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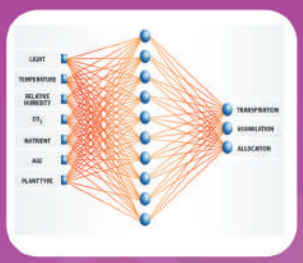

Special Issue

Proceeding of the 5th National Conference on "Emerging Trends in Computer and Information Technology" held on 23rd December 2019.

Editor in Chief

Dr.B.H.Barhate

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Tapti Education Society's

Dept. of Computer Science and Information Technology

Bhusawal Arts Science & P.O.Nahata Commerce College,

Bhusawal - 425 201 Maharashtra

NAAC Reaccredited : Third Cycle Grade 'A' (CGPA : 3.30)

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Special issue on

5th National Conference on

"Emerging Trends in Computer And Information Technology"

Held on 23rd December, 2019

About Publisher of IJCRT

Bhusawal, as recalled and noted down in records has a prominent place on the map of the nation; proudly housing two ordnance factories, a thermal power station in the region, and itself being one of the major railway junctions of Central Railway from where, residents proudly say, you may visit any corner of India. A mixture of farmers, tribal people from adjoining areas with the servants from all over India, Bhusawal serves as a slice of the nation; and honorably has unity in diversity. It is 25 kms away from the district, Jalgaon, famous as a city of gold; and few kms away from Yawal and Raver tehsils, famous all over nation for bananas. It is the only 'A' graded Municipal Corporation in the district. Another identification as well as benefit of the city is that it is situated at the banks of the Tapiriver, the only river that flows from east to west. The city of Bhusawal has been a home place for the British authorities, and it is famous for railways since British rule. It is historically remarkable for the grave of Major Robert Gill, who invented world famous Ajanta caves; and for the tomb of Sant Gadgebaba, a famous and truly a leading social reformer in Maharashtra. It is believed that the parental home of Rani Laxmibai (famous as Queen of Jhansi) is situated at Parola, 50 kms away from the city. Bhusawal is also famous for many mythological stories like that of Shravana, coming from Ramayana who is said to be killed at Hartala, which is near to the city. Besides, the city was once famous in Bollywood for film distribution companies. The world famous Ajanta caves are just 60 kms away from the city.

Summing up the physiognomies of the city, Bhusawal stands as a glorious city in the eyes of everyone. However, it was the time- besides all assets of the city- when Bhusawal was a degenerated city in terms of higher education even after a long time from independence. There were few schools imparting high school level education but none of the colleges. It was only in 1958, under the motivation of Late Hon'ble Madhukarrao Chaudhari, ex-speaker of Maharashtra Legislative Assembly, a group of social well-wishers came together and established the Tapti Education Society in 1958. Simply having the wish in mind to provide potential students higher education facilities near their home, they started the Bhusawal College of Arts and Commerce in 1963. Their philanthropic view may be seen in the motto: *Vidya danam mahat punyam.* Yet difficulties were innumerable. The college with two faculties was started in the place of rent of a high school in the city.

It is wisely said that *vidya danam* is *mahat punyam*. The dedicated faculty, the sublime view of the management soon started to produce good academicians. Inspired by the results the trust purchased a barren land of 7 acres out of the city which is soon to be developed as a centre of imparting quality higher education in the area. The barren land with sustaining hard work, and devotion was then transferred into a naturally beautiful campus. The college is then shifted to a new place in 1972 with the introduction of Science stream. The philanthropist Late Mr. Poonamchand Nahata donated to the college, hence the college is renamed- and which today itself is a brand- as Bhusawal Arts, Science and Poonamchand Omkardas Nahata Commerce College, Bhusawal.

The college is then marching forward with a goal to **creatively contribute the society through the pursuit of learning at higher level of excellence**. The institute has contributed in many ways for economic, social and cultural uplift of the society by offering quality education. Since the inception it has been known for academic excellence, inventive pursuits and athletic dynamism. The college is a multi-stream institute catering to the needs of the young minds primarily from the rural areas. Our society runs not only the college but also the Institute of Management and Career Development and much-sought Tapti Public School (affiliated to CBSE Board, New Delhi) within a minimum space of 7.3 acres. The institute is developing vertically in all of the fields.

The Tapti Education Society's Bhusawal Arts, Science and P. O. Nahata Commerce College was accredited as **four stars** in 2001, reaccredited as **'A' Grade** with CGPA3.28 in 2008 **and recently reaccredited 3rd cycle as 'A' Grade with CGPA 3.30 in 2015** as the **first College** in North Maharashtra University jurisdiction. It is also the first college to volunteer for the third cycle of accreditation in the jurisdiction of the university. It is also recognized by UGC as **College with Potential for Excellence**. Recently, the society is certified as ISO 9001:2008 institute. Our institute is one of the renowned institutes in the adjoining area. We welcomed the upcoming students from rural areas who made remarkable progress and set theirs and college's image in society. Many of the students of this institute secure top position in various fields. This make us feel great.The college achieves 'A' grade in three subsequent cycles of Re-accreditations and it brings the college towards autonomous status.

Initially the college was affiliated to the Pune University, and got permanent affiliation in 1990. Since the inception of North Maharashtra University in 1991, the college is permanently affiliated to the same. The university spreads all over three districts: Jalgaon; Dhule; and Nandurbar, being on the boundaries of Gujrat and Maharashtra, and one being the district of tribal people. The university is trying hard to uplift the downtrodden, while keeping in touch with the rapidly changing world.

Last but not least, the college has the advantages of developing youth coming from rural area, and forming them into sensible youth as they are mixed in the cosmopolitan society. The college is aware that every coin has two sides: hence students coming from rural areas have inferiority complex, their vernacular background being most disadvantage for them. The college has faced challenges to improve their communication skills, to boost their confidence to bring them into modern current while making them aware of great Indian culture. As recently, the college has celebrated its golden jubilee, it will be a golden, in fact a platinum moment for us when the students coming from different backgrounds will be essentially Indian serving for the welfare of humanity. With this view the college is making progress towards quality excellence so that it will be a lead college that will stand as a lighthouse for the confused.

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President's Message……..

I am extremely glad to know that Department of Computer Science and Information Technology of Tapti Education Society's, Bhusawal Arts, Science and P. O. Nahata Commerce College is organizing one day 5th national conference on "Emerging Trends in Computer And Information Technology" (ETCIT 2019-20).

I assure that this conference will provide a platform to bring together researchers from various research and industrial organizations and educational institutions under a common environment and discuss the emerging trends in Computer and Information Technology.

Moreover, such a conference will help the staff and students of the department to interact with prominent personalities from the renowned institutions across the country.

My warm wishes are always for the fruitful conference.

From principal's Desk.....

It's pleased to publish that after productive success of forth National Conference ETCIT-2019, the Department of Computer Science and Information Technology is organizing one day 5th National Conference on "Emerging Trends in Computer and Information Technology" (ETCIT 2019-20) on 23rd December, 2019.

The conference will provide an opportunity for the delegates and all computer and management professionals to deliberate and discuss the latest developments in this field.

All the staff of Department of Computer Science and Information Technology is always make such ground-breaking and challengeable events successful beyond our expectation and make me proudly. Passion of organizing committee of the National Conference ETCIT 2019-20 is very admiring.

I ensure enormous success for this one day 5th national conference ETCIT-2019-20 from bottom of my heart.

Convener's Message.....

Now a day's world is moving towards the smartness. In research, Computer Science and Information Technology is a paradigm whose applications can be seen in almost all disciplines to make the world smart. Our department is organizing the 5th one day national conference entitled "Emerging Trends in Computer Science and Information Technology (ETCIT-2019-20)" on 23rd December 2019.

This conference and various sessions have stroke balance between theoretical and applied research which will be helpful and fruitful for new researchers.

We are grateful to all the authors who submit their research work for this conference and selected papers are published in the International Journal of Computer Research and Technology (IJCRT), a peer reviewed, half yearly research journal, Vol.-5, Issue-2, July-Dec. 2019-20, ISSN: 2454-7719.

Specially, we are thankful to our patrons, principal, resource persons, vice principals for their appreciation and ethical support. The event organized by us is thoroughly providing a valuable work for participants, researchers and society.

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I N D E X

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Attack Effect and Security Scheme in MANET

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ABSTRACT: ***The sensor hubs are free and work as sender, collector and middle hub in Mobile Ad hoc Network (MANET). The remote versatile hubs are shaping the little system in which the at least one sender is sending information to one goal/s through transitional hubs or sending data to goal. The data gather by base station is additionally examined. The hubs are additionally static or portable relies upon the circumstance or conditions. Directing convention is liable for association foundation and information sending in MANET. The directing conventions of MANET are not same as customary remote steering conventions. One significant issue on this system is security. The directing conventions are sending data to goal from specific source and the steering procedure is gives the better method for conveyance in the system. The remote versatile hubs in arrange are performing with no area based DREAM directing thus, every time same sender finding the goal. In this paper the focal point of thought is on the security issues identified with MANET directing conventions. The directing in MANET stays a key issue in light of that without precisely working of steering conventions, the system neatly won't work the procedure it's planned to. Additionally features the issue of area nonappearance by that hubs area estimation and portability speed checking speed discovery is conceivable. Lamentably, directing likewise one of the most hard to ensure against assaults pernicious exercises as a result of the organization in MANET. The better insurance plot is gives the total security from assaults and the safe directing is gives the better and trustful system execution .***

INTRODUCTION

The Wireless Network is the system wherein the correspondence between the sender and beneficiary host is conceivable with no link association. The remote system is progressed to remote system since it diminished the expense of additional connection is associated with specific host in the system. The various gadgets in remote system are playing out their job productively to keep up the solid association in the middle of source to goal. The MANET (Wireless portable Network) is the remote system wherein every single remote cell phone is fill in as both switch and host [1]. The no brought together authority is available in this system for supervision of appropriate correspondence, if without base station sensors are speak with one another. The Wireless portable system is fundamentally isolated n two sorts initial one is Infrastructure based Wireless Network and with no Infrastructure based system. Foundation Ad hoc remote systems, versatile hub can move during imparting and furthermore conceivable leaves the range, and conceivable which gets into the scope of another hubs [2]. While in Infrastructure less systems is known as the specially appointed remote systems. In MANET during correspondence no any base stations or any brought together authority is available and all hubs in arrange go about as switches and it makes dynamic connection and performing correspondence. The connection steadiness for long term is the serious issue in this sort of system [3]. The plausibility of bundle misfortune in unique system is increasingly because of connection disappointment and because of noxious exercises [4] performs by assailant.

Every portable remote cell phone can speak with one another in the event that they are under the correspondence run. The hubs in extend are the neighbor hubs and every hub is additionally moves in coordinate with irregular versatility speed in meters second. Because of development of remote versatile hubs the string association foundation is additionally the significant worry for fruitful information conveyance [5]. The MANET is abhorrent then

different systems and furthermore effectively settled at any territory. The case of foundation less remote portable system is referenced in figure 1.

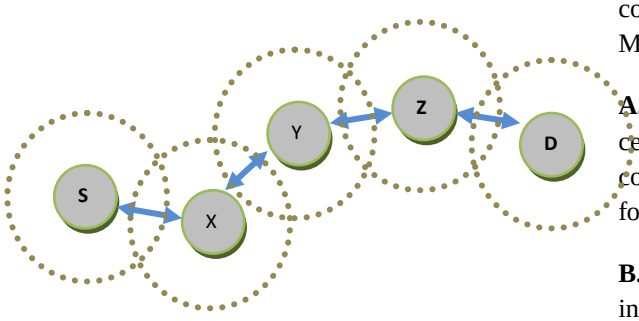

Fig.1 Example of MANET

In this sorts of system Source S need to speak with goal D. It implies that the no base station is containing the all data of hubs. This sort of system is actually we state same as specially appointed remote system. These systems are totally autonomous and the hubs are moves in the system through irregular movement.

The aggressors or noxious hubs are effectively upsetting the first steering presentation [5]. The aggressor hub is consistently the middle of the road hub/s and this hub/s are not right away assault in organize however these anodes are first break down the directing data and precisely carries on like the typical hub. In the event that the sender is begun the information sending right then and there aggressor is enacted and drop or degenerate all significant data [6]. A portion of the pernicious hubs are likewise flooding undesirable data in gigantic sum.

The aggressor are likewise classified in various classifications and these classes are referenced the assailant type in arrange. The aggressor point is just to drop the parcels, expend organize data transfer capacity or connection limit between the portable remote versatile hubs and speak with counterfeit character in arrange. In this overview the various assaults grouping in MANET and kinds of directing conventions is detail talked about with various steering technique in MANET.

APPLICATION OF MANET

Remote Ad hoc Network is dynamic system and less have additionally frameworks, so it is increasing prevalent in ongoing patterns. The remote versatile hubs are gathering the data of condition; gather the real heartbeat data to perceive the real human issue in human body. Impromptu Network can be set up [1, 2] anyplace where the hubs have availability with different hubs and can join and leave the system whenever or share the data to one another or base station. This system is extremely helpful and gives numerous offices to client in field of restorative, condition, fight and training. The utilizations of MANET [1, 7] are as per the following:

A. Military: The correspondence among the warriors, central station of military and vehicles can be conceivable as this region don't have the correct foundation of the base station for the correspondence.

B.Emergency Services: This system can be utilized in crisis tasks, for example, search and salvage, recuperation from fiascos for example Fire, flood, spring of gushing lava tremor, ejection and so on.

C.Commercial conditions: MANET can self-sufficiently interface a moment in business to share the day by day updates of office. The workplace regions are not restricted, with the goal that this system is transfer useful for sharing data.

D. Area checking: In region observing, the portable hubs are conveyed over a district where some marvel is to be checked. At the point when the sensors recognize the occasion being checked (heat, pressure and so forth), the occasion is accounted for to one of the base stations, which at that point makes fitting move.

Types of Attack in MANET

Aggressors or Malicious hubs are performing various sorts of noxious exercises that have harm fundamental parts of security like uprightness, secrecy and protection [8]. Here there are various kinds of assaults [9, 10] and their referenced in detail.

A.Active Attacks

It resembles as uninvolved assault that screens and tunes in by unapproved correspondence channel and it additionally alters information stream in correspondence channel. These aggressors are effectively taking an interest in arrange in malignant execution. There are various kinds of dynamic assaults an appeared here.

1)Blackhole Attack

Blackhole assault is the parcel utilization assault. In this assault the assailant hubs is recognized the sender that need to send information to recipient and answer counterfeit course data to sender. Sender is sends the information from the way where the aggressor is exist in arrange. At that point all things

considered the assailant is misfortune entire information and system execution id corrupts.

2)Sybil Attack

Noxious hub can copy itself and it nearness influences at different spots. It targets adaptation to non-critical failure plot as circulated stockpiling, multipath characters for another hub, multipath steering and topology in the systems. These aggressors are changing their unique personality and handle the neighbor hub character in organize.

3) HELLO Flood Attack

An aggressor with high radio transmission range and procedure on control sends "Hi" parcels to number of portable hubs which are disconnected in remote versatile system. So portable hubs preference foe is their neighbor. While data is sent to the base station, at that point around then, the unfortunate casualty hubs are attempting to go through assailant coming about neighbor in higher mock.

4)Denial of Service

At the point when inadvertent disappointment of hubs or pernicious hubs assault any occasion that lessens system's capacity of administrations and furthermore influence on annihilating system, this can be influenced on various layers like Physical layer and DoS aggressor in sticking and altering. While crash, injustice and weariness will happen in Link Layer affirm the nearness of DoS assault.

5)Wormhole assault

Wormhole assault is most extreme assault in MANET in which utilizing private rapid systems administration, pair of plotting aggressors can record bundle data at one area and replay then on other area. So this can be propelled against all interchanges for giving realness and privacy.

B.Passive Attacks

It doesn't influence any correspondence works yet unapproved individual can simply screen and listen correspondence channel and it is elusive these sorts of assaults because of its detachment conduct. The latent aggressors are not consistently and effectively infuse noxious activities in arrange in view of that their redesign is troublesome.

1)Attacks against protection

In portable system there are enormous quantities of data accessible by remote access, so any malevolent hub can undoubtedly accumulate data. Here certain assaults against protection are characterized:

2)Monitor and Eavesdropping

It is normal assault, in which, by snooping information enemy it can without much of a stretch find correspondence control data for versatile Ad hoc system design that contains data and influences against security assurance.

3)Traffic Analysis

In spite of the fact that messages are moved by scrambled, it leaves high plausibility correspondence designs, on account of versatile exercises and it can conceivably influence on empower data and cause mischief to portable system.

ROUTING IN MANET

Steering Protocols are assuming the primary job in correspondence if the sender is beneficiary isn't legitimately associated. These Wireless Ad hoc Network convention [11] is contrasts from regular steering in fixed systems in different ways. There is no framework, remote connections are untrustworthy, versatile hubs may come up short, and steering conventions need to meet exacting vitality security prerequisite. As a rule, directing in MANET can be isolated into level based steering, various leveled based directing, and area put together directing depending with respect to the system structure. In level based directing, all hubs are ordinarily allocated equivalent jobs or usefulness.

The MANET directing conventions are totally unique in relation to steering conventions are utilized for customary remote and wired system. The topology creation and confinement is absolutely flighty by that the conventions are likewise intended for that system where just the hubs/stations/switches are speak with one another in a constrained correspondence go. The kinds of directing conventions [12, 13] order are as per the following:-

1. Proactive or Table driven routing protocols
2. Reactive or On demand routing protocols.
3. Hybrid routing protocols.

These protocols are further classified in different types of routing protocols like DSDV [14], AODV [15] and ZRP [16]. The whole classification is mention below in detail:-

A.Proactive Routing Protocols:-

The proactive directing conventions are set up association and keep up the record of each hub that are in prior period sending information to middle of the road hubs in powerful system. The importance is that the historical backdrop of way of all associated or close by hubs is kept up by every single hub. In the event that the any hub just one time partaking in correspondence, at that point all things considered their record is available to each through which hub is associated. The proactive directing conventions are exceptionally effective if each time hub position isn't changed. That implies, in the event that past hub exists, at that point no compelling reason to flood demand bundles for foundation of association in powerful system yet in MANET that sort of plausibility chances is extremely less. DSDV (Dynamic Source Distance Vector) convention is the case of proactive steering convention.

B.Reactive Routing Protocols

The responsive directing convention isn't keeping up the record history of hubs in past that they are taking part in steering system. In this sort of convention the hubs sender is set up association in On request way. That implies moment hub accessible at that point forward solicitation to next accessible hub till the goal isn't discovered this strategy is call it over and over. No record of hubs is kept up on every hub after finish of information conveyance in unique system. The case of Reactive Routing Protocol is AODV (Ad Hoc On request Routing) convention.

C.Hybrid Routing Protocol

In this sort of directing the diverse steering strategy is performing on the distinctive region in a similar system and the diverse zone of correspondence in the system are called zone in the system. The correspondence in the middle of the various zones is conceivable through half and half steering convention. The case of half breed directing convention is the ZRP (Zone Routing Protocol). Half breed conventions utilize a blend of these two thoughts. At the point when portable hubs are static, it is desirable over have table driven steering conventions as opposed to utilizing responsive conventions. A lot of vitality is utilized in course revelation and arrangement of receptive conventions.

DREAM (DISTANCE ROUTING EFFECT ALGORITHM FOR MOBILITY)

In DREAM convention [17], every hub keeps up area data that stores position information with respect to each other hub that is a piece of the system. It will so be named a for all methodology. a section inside the position data incorporates a hub image, the course of and separation to the hub, just as a period esteem that demonstrates when this data was created. A section in the position database incorporates a hub identifier, the course of and separation to the hub, just as a period esteem that shows when this data was produced. Obviously, the precision of such a section relies upon its age. Every hub normally floods bundles to refresh the position data kept up by different hubs. A hub can control the exactness of its position data accessible to different hubs by:

- The recurrence at which it sends position refreshes (transient goals)

- Indicating how far a position update may go before it is disposed of (spatial goals)

The fleeting goals of sending refreshes is combined with the portability pace of a hub (i.e., the higher the speed, the more regular the updates). The spatial goals is utilized to give precise position data in the immediate neighborhood of a hub and less exact data at hubs more remote away. The expenses related with exact position data at exceptionally remote hubs can be decreased since, as the creators contend, "the more noteworthy the separation isolating two hubs, the more slow they seem, by all accounts, to be moving as for one another" (named the separation impact [18]). In DREAM, trading hubs' directions as opposed to trading total connection state or separation vector data helps decreasing the involved transmission capacity. Besides, since DREAM utilizes the separation impact guideline depicted above, it can scale to enormous portable specially appointed systems.

Literature Survey

Portable Ad hoc Network are progressively helpless as contrast with wired or remote correspondence anyway in right now, number of investigation center inside the field of MANET, hence in future the MANET is most used system in genuine application in each were. In this segment we tend to think about scope of most recent papers underneath security issue and its goals in MANET field is as per the following.

In this paper [19] is to survey the effect of the blunder related with the situation of the hubs in LB steering conventions for MANETs. In particular, DYMOselfwd and AODV-Line has been utilized for the presentation assessment, as the two of them have been proposed to diminish the directing overhead in AODV/DYMO steering conventions. The point of this work is to evaluate the effect of the position exactness on the exhibition of area based directing conventions that have been as of late proposed. The objective of DYMOselfwd is to diminish the overhead of the inheritance DYMO convention, expanding henceforth the system lifetime and upgrading the data transmission utilization. Consequently, DYMOselfwd adjusts the RREQ definition and incorporate two more data components: the transmitter and goal positions. The source hub sets the goal position into the RREQ parcel and each sending hub refreshes the transmitter position with its own area. With this new information in the RREQ bundle, the sending hubs postpone the retransmission of the RREQ parcels as per initial one is the good ways from the last visited transitional hub to the goal hub and the subsequent one is the good ways from the present sending hub to the goal hub.

In this work [20], Reinforcement Learning (RL) based arrangements are proposed for directing in powerfully changing hub area situations. It is demonstrated that RL based arrangements give better result in contrast with the static calculations. Static calculations neglect to adjust the changing circumstances while the RL based arrangements can adjust to these progressions and limit the normal bundle conveyance time. The RL based calculation works as indicated by the prizes and punishments it gets from the performed advances. A compensated advance is kept in memory for future activities. Be that as it may, investigation is accomplished for new cases and in like manner the learning calculation is refreshed. Least bustling ways are typically picked as the initial step of the procedure. Step by step from learning results, the least bustling ways might be dodged for ideal exhibitions.

In this paper [21], they propose a multipath steering convention called Heterogeneous Ad hoc On-request Multipath Routing Based on Node Stability (HAOMDV-NS) which finds ways dependent on hub strength. We characterize the hub soundness by the quantity of one-jump neighbors, neighbor likeness between contiguous time and normal got signal quality marker. Coefficient of variety strategy is utilized to weight these three elements. The way quality is estimated by the got sign quality pointer. In this paper, each hub in the system has three diverse radio interfaces, so there are three hub steadiness esteems. Hubs communicate the hub strength by Hello bundles to neighbor hubs occasionally. At the point when source hub need to start another course revelation process, it chooses the interface with the biggest normal neighbor hub security incentive to communicate RREQ with the way quality to the system. The convention refreshes the way quality jump by bounce and constantly select the most steady interface as the transmission interface in revelation process. The source hub gets various stable ways and it picks one with the biggest way quality incentive as the essential way. Contrasted and AOMDV, the exhibition of HAOMDVNS is better on bundle conveyance, normal start to finish deferral and course overhead.

In this paper [22] the significant commitment of this work is to present most limited connection dependable and changed form of AOMDV steering convention for remote impromptu systems, called Link Reliable Multipath Routing (LRMR) convention. Remote specially appointed systems, because of their impromptu nature and portable condition, utilize communicate natives, for example, data transfer capacity, vitality, delay, load, and so on to adjust with arrange changes. Dependable information transmission in MANET has been an issue because of the regular disappointments of remote connections between hubs. Along these lines, it is basic to create connect dependable responsive directing convention that chooses solid connections during information transmission. The AOMDV utilizes the conventional steering metric jump mean finding numerous courses and chooses a course with barely any bounce consider as a part of them for information transmission. During information transmission on the off chance that any connection between the hubs of that course comes up short, at that point information misfortune happens in AOMDV. To redress this issue, they propose an improved AOMDV directing convention which uses jump tally and CETX for numerous connection solid ways choice.

In this exploration [23] paper is showing an Energy-Efficient Routing convention that will improve the usage of connection by adjusting the vitality utilization among used and underutilized hubs to address the above difficulty. The convention manages different parameters as Residual Energy, Bandwidth, Load and Hop Count for course revelation. The disappointment of any hub in the

course when the transmission of information bundle is in progress prompts the corruption of the QoS (Quality of Service). To defeat with this issue, the paper proposes two techniques for support of the course.

This work [24] proposed a hub disjoint area based multi-way directing convention (Location-BMP) for versatile specially appointed systems to lessen the quantity of communicate multi-way course revelations and the normal jump check per way from the source to the goal. During course disclosure process, the moderate hubs incorporate their area data alongside the separation in the Route-Request (MP-RREQ) parcel. The goal hub chooses a lot of hub disjoint ways from the MP-RREQ bundle got and sends a Route-Reply (MP-RREP) parcel on every one of the hub disjoint ways.

Conclusion and Future Work

The Wireless Ad hoc Network is separated into numerous classifications and these sorts of classifications are static system with base station and without base station and dynamic system with base station and without base station. The Location based DREAM convention manages use of vitality assets. On the off chance that any hubs in the system having a worth littler or equivalent to limit esteem can't take a section in correspondence and furthermore ascertain the vitality of hubs and select the hubs based on area based plan There are little issues and arrangements which observes the need of vitality effective steering in specially appointed remote systems. The steering conventions in MANET are genuinely restless on the grounds that assailants or noxious hubs can without much of a stretch secure data about system topology at the hour of course foundation. Through all these data a pernicious hub assaults performed so as to bother the first system activity by segregate real significant hubs, and so on. That is the accomplishment of prompt system regardless of the kinds of hubs or sort of conditions that is standard which is express in this paper. The distinctive creator ongoing work is extremely viable and one of a kind. The entire review of MANET with its application and difficulties are talked about and see that the security and vitality utilization issue is essential issue in MANET.

In future we recognized that the conduct of assailants behind commencement either bundle dropping or steering trouble making is to accomplish a specific objective, for example, assault (for example making certain assets or administrations, for example, applications, web access, printing, or directing, inaccessible to the proposed clients). By controlling the early consumption of the battery, modify the vitality to choose the correct vitality level of a hub and incorporate the low power techniques into the conventions utilized in different layers of convention stack. Proposed arrangement will upgrade the

- Throughput.
- Reduces packet loss
- Reduces routing load

we combines these three different modules like location aware, energy and AODV routing in MANET. This approach will depends on the results analysis of normal routing and Location based energy efficient routing protocols

In addition, other goals of attackers might include partitioning the network, creating routing loops, or generating multiple identities discovering valuable information, or theft of resources. It's assumed that the attacker joins the network with its single identity, and that malicious nodes do not collide with one another. It also assume that nodes do not increase or decrease their transmit power because power consumption issue of attack is in different category.

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Self Drive Car: New Era in Autonomous Robotics

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ABSTRACT: ***A robot is a machine which is capable of doing a complex sequence of actions automatically or autonomously. They can be directed by internal or external embedded controls. The driverless car can also be referred to as a robotic car. This car can sense the situation with the help of cameras, obstacle detectors (LIDAR), RADAR, navigational paths using GPS system. These autonomous cars have capability of the human transportation capabilities without any human input. This is a big step in the advancing future technology.***
Keywords: Driverless car, Embedded system.

1. INTRODUCTION

Now a day technology is becoming very advance and promising but still Indian roads are major challenge as compared to roads in the western countries [1, 2]. Indian roads are well-known for busy and highly congested traffic. The rate of road accidents, casualty and death is at alarming time. These are the few major areas where autonomous vehicles can do Magic. Another major issue during heavy traffic is that driver has to use continuously clutch, brake and accelerator and drive slowly. That means a physical and mental stress is more [2, 3, 4]. The next issue is when two vehicles have the same destination but one of the drivers does not know the route. In such type of situation the driver follows the front vehicle if they share their location to reach the same destination. Some time there is a situation that to driver may be physically challenged and unable to drive the vehicle.

In all these types of issues the autonomous car is a great solution to relax the driver by making vehicle smart enough to make decisions its own according to the situation. A self driving car is a vehicle equipped with an autopilot system, and capable of driving from one point to another without help from an operator [5]. With the considerable growth in technology in the field of electronics, VLSI, embedded and computing, self-driven vehicles are safest vehicles.

This paper presents the idea of self drive car. In this paper, how the autonomous car guided by embedded controls is described. The working, usability and applications of various sensors also discussed here.

2. Working of Self Drive Car

The autonomous robot consists of multiple sensors, which helps it to communicate with Application Program Interface of Google Maps and makes it find the shortest and light traffic route also the sensors are used to determine obstacles in the route to move smoothly. Figure 1 shows the block diagram of self drive car.

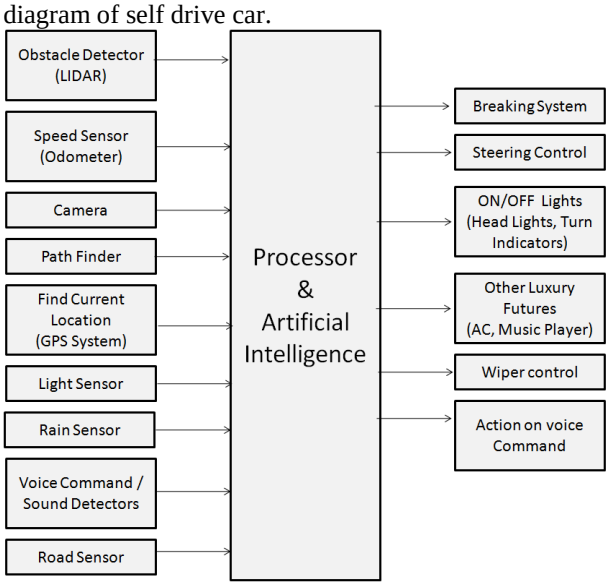

Figure 1: Block Diagram of Self Drive Car.

2.1 Voice Commanding

When driver entered in to the car, he needs to switch ON the ignition using the key and operates all controllers manually. The voice recognition technology can be use to do all these activity automatically by giving voice command only [6]. The car have voice receiver box where it receives voice commands. The driver can feel like he has full control of the car. Figure 2 shows the use of voice command [7]. Driver can use his own voice for voice

recognition programs so that only he can operate the car and another sound interference can be ignored. Now days, the voice recognition technology is economical. The voice commands can be used for ON/ OFF the engine, set the destination, AC and music control, shutter the windows etc.

Figure 2: Use of voice command.

2.2 Obstacle Detection

LIDAR stands for Light Detection and Ranging. It is based on a pulsating laser light. LIDAR measures distance of target or obstacle by illuminating the laser and the sensors measure the reflected light. The wavelengths and laser returning time are used to form digital 3-D representations of the target. Figure 3 shows the LIDAR system [8]. LIDAR systems allow examining natural and artificial objects with accuracy, precision, and flexibility.

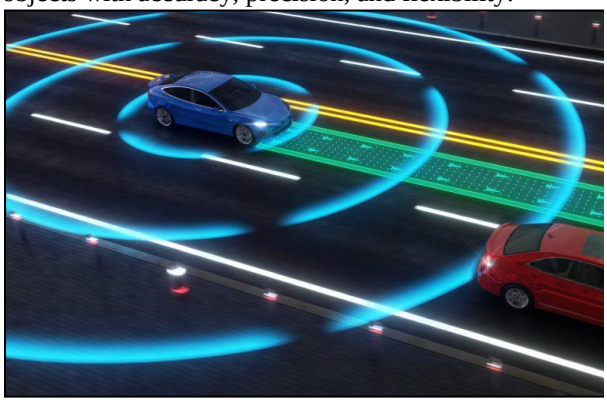

Figure 3: LIDAR System

2.3 Finding Current Location

The GPS stands for Global Positioning System. It is a satellite based radio navigation system made from at least 24 satellites. The GPS operates independently of internet or telephonic reception, however these technologies can improve the effectiveness of the GPS positioning information. The position of car is depends on some factors like Speed, Trip distance. GPS work independent of weather conditions all over the world. GPS satellites revolve around the Earth in a precise orbit. Each satellite transmits orbital parameters and unique signal. GPS devices decode the information and calculate the precise location of the satellite. GPS receivers use this information and by mathematical calculations (trilateration) [9]. GPS calculate exact location of car and display it electronically in form of running route map. Figure 4 shows idea of GPS tracing [10].

Figure 4: GPS tracing

2.4 Automatic Light and Windshield Controls

During night and foggy season the visibility is extremely low (Figure 5) [11]. So it is essential to switch ON the head lamp, Fog Lamp and day time running lamp during the driving for better visibility. Light sensors are photoelectric devices which are used to detect light in environment and generates electrical signal in accordance with intensity of detected light. According to electric signal controller decides to ON-OFF the lights of car.

Figure 5: Foggy season

It is important that windshield should to be clear during the driving for safety. During the rain fall the visibility level decreases (figure 6). The wipers should be turned on instantly to clean windshield. The rain sensor detects rain and switch ON the wipers automatically so that visibility can be maintained.

Figure 6: Windshield during raining season

2.5 Road Sensors

Moreover Indian roads are major challenge in India. The roads are not properly maintained and having numbers of digs. When the car is going on such type of road, it may be loose its balance and control. Road sensing suspensions or active suspensions use variety of sensors and get the information about the vehicle's body movement. Using this information, a central ECU controls the dynamics of the suspension. Figure 7 shows the idea of active suspensions [12]. These types of suspensions used to decrease the effects of disturbances on the surface of the road and ensure ride smoothly.

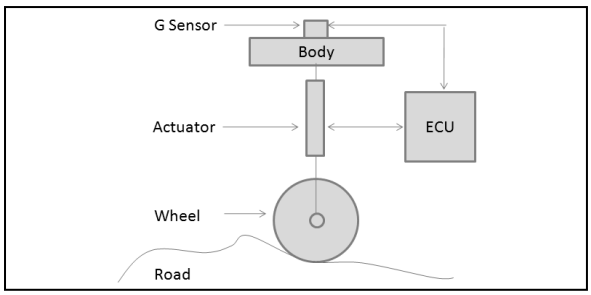

Figure 7: Road sensing suspensions

2.6 Processor with Artificial Intelligence

The CPU of car collects all the data obtained from the various embedded sensors and Google maps and controls the various activity of car like steering, speed and brakes. Not only traffic laws, but also the unspoken assumptions of road users are needed to understand by the central processing unit. Artificial Intelligence car provides the real time decisions. The main objective of artificial intelligence is to drive the passenger safely and legally to proper destination.

CONCLUSION

The embedded system plays an important role in automation. The driver less car can control the situation with the help of various embedded sensors and controller. These autonomous cars have transportation capabilities without any human input. The aims behind the development of driverless car to make ride safe, fuel efficiency, easy, comfortable and inexpensive drive without driver.

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A Pilot Survey on: Increasing Secrecy of confidential message with Combination of Cryptography and Steganography

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ABSTRACT: Now a days, Digital communication takes place frequently on the internet and applications. Hence, The Security becomes important and must be provided. The formation of a secure communication between sender and receiver is becoming a difficult problem due to the possibility of attacks and other unpremeditated changes during dynamic communication over an unsecured network. However, the secrecy of information can be secured using either "cryptography or steganography". Steganography refers to the act of covering a message (without any traceability) in such a manner that it will make no sense to anyone else except the intended recipient, while cryptography, refers to the practice of converting a plaintext /message into an unreadable format. Thus, steganography masks the existence of a secret message while cryptography modifies the message format itself. Both cryptographic and steganographic techniques are influential and vigorous. In this paper, the aim is to analyze different ways of combining cryptographic and steganographic techniques to achieve a hybrid system. Moreover, some of the differences between cryptographic and steganographic techniques were presented as well.

Keywords: Steganography, Cryptography, Image steganography, Security, Information hiding

Introduction:

It is true that the development of the Internet and its successive development has made digital communication very easier, but with additional cost and that is the issue of information security over open networks. Sending and receiving information via email or the use of web browsers are not secure as sensitive information such as credit card information sent over such medium can be intercepted. There is a need for a private and secure communication for online users. To solve the issue of information threats, several methods (Table 1) have been proposed in the area of systems security under information hiding and encryption [1].

Table 1 Security System Organization [2]

Security System	Information Encryption	Cryptography	Symmetric Cryptography Asymmetric Cryptography
	Information Hiding	Steganography	Linguistic Steganography Technical Steganography - (Digital- Audio, Video, Text)
		Watermarking	Robust Watermarking (Imperceptible, Visible, Fingerprint) Fragile Watermarking

Cryptography is sometimes referred to as information encryption and steganography is also called as information hiding. These are most used techniques for information security [3]. Using cryptography, the secret information is transformed in a way that it cannot be readable to intruders, but using steganography, the presence of the information is completely masked from intruders [4, 5].

The value of the secret data obtained from a system is the most significant thing to the intruders. The data may be compromised, unfair, or even used for future attacks by attacker [6]. Individually cryptographic and steganographic techniques are not sufficient to provide better security to the confidential information. A Hybrid System which is combination of cryptographic and steganographic techniques is the perfect way of overcoming these problems. Use of hybrid system which can be stronger than the

individual can provide better security for secret data [1]. In this paper, section 2 presented a history or background of steganographic and cryptographic techniques, with prominence on the basic differences between them, while in section 3 reviewed the methods of combining steganographic and cryptographic techniques. Section 4 presented the conclusions of the review.

2. Background:

The well-known techniques that deploy information in order to cipher or hide their presence respectively are "Cryptography and Steganography". Steganography is the art and science of hiding the existence confidential information into digital media (Image, Audio, Video, Text) in such a way that attacker cannot detect the existence of information and the hidden information cannot be seen. Cryptography, refers to the practice of converting a plaintext /message into an unreadable format. The Steganography hides the message so that it cannot be seen and Cryptography scrambles the message so that it cannot be understand. Even though both methods provide security, a study is made to combine both cryptographic and Steganographic techniques into hybrid system for better confidentiality, integrity and security [7]. However, It is required to provide further clarification of these techniques to support in the understanding of the advantages of their combination.

Steganography:

Steganography, is term which means 'Writing in Hiding'. Steganography is art of hiding confidential information in a cover media like image, audio, video in such a way that the attackers will not be able to detect it [8] (Figure 1). The applications of information hiding systems mainly range over a broad area from military, intelligence service, internet banking, medical science and so many others. These variety of applications make steganography important. The cover medium is usually chosen keeping in mind the type and the size of the secret message and many different carrier file formats can be used. In the current situation digital images are the most popular carrier/cover files that can be used to transmit secret information [9]. Before inserting an information in a cover media, the sender party must first convert the confidential message, then manipulate some of the bits of the cover object to form the stego-object [10]. Then, the stego-object is transmitted over a communication medium to the receiver. When receiver receives, the process is performed in a reverse manner and extract the hidden information is extracted from stego-object. If the process involves a secret key, both parties (sender and receiver) must have the key prior to the transmission of the stego-object [11].

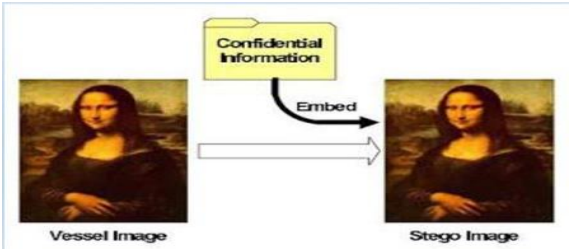

Figure 1.

The two other techniques that are related to steganography are Watermarking and fingerprinting but they are not in the same class [10].

Steganography algorithms:

Many steganographic algorithms are used to guarantee the security of confidential information. All steganographic algorithms does not incorporate key. Secret key is optional in case of Steganography algorithms. (Tayana Morkel, University of Pretoria says), The security of steganographic systems can be increased by applying the "Kerckhoff principle". According the Kerckhoff principle if Steganogrphy algorithm incorporates Secret Key then even if an eavesdropper knows the design and implementation of the steganographic system, he requires the secret key to launch a successful attack on the system to extract the hidden information. Therefore, it is good practice to use the secret keys which can be public or private, when implementing steganographic systems.

Cryptography:

Cryptography is the study of converting of original data which is readable and understandable into a form which cannot be read or understood by the attackers in order to secure confidential data. The information that we need to hide, is called plaintext. The data that will be transmitted is called cipher text or meaningless data. Cipher is the algorithm that is used to transform plaintext to cipher text, This method is called "encryption". The process of encryption requires a key (Public/Private). After encryption generated cipher text is sent to the receiver so that even if attacker gets access to the data he/she cannot read or understand it. When receiver receives the cipher text, converts it into the original data which is readable and understandable using the secret key. This process is called "Decryption" .(Figure 2.) [12].

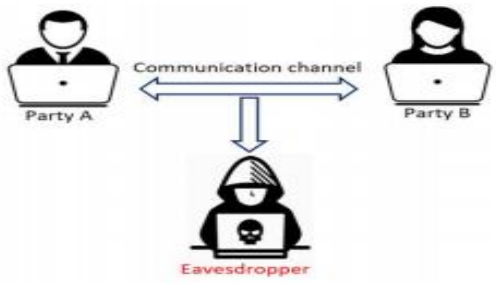

Figure 2. Encryption System

Encryption and Decryption Algorithms:

The technique of encryption may be publicly known but after receiving cipher text the process of decryption of the message needs knowledge of the key. This key is used at both the encryption and decryption phases, and without this key, it is not possible to decrypt an encrypted message even if the attacker knows encryption algorithm. The encryption is classified into two types which are symmetric and asymmetric encryption algorithms. This grouping is centered on the role of the keys in each algorithm [1].

In The symmetric encryption algorithms, we require both the parties to be known about secret key for encrypting and decrypting the message (Figure 3).

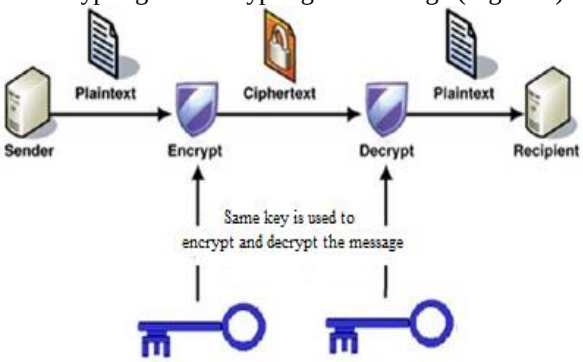

Figure 3. Symmetric Encryption and Decryption

In asymmetric encryption algorithms, Both the parties uses, separate keys. Process of encryption incorporates public key and the process of decryption incorporates private key (Figure 4.).

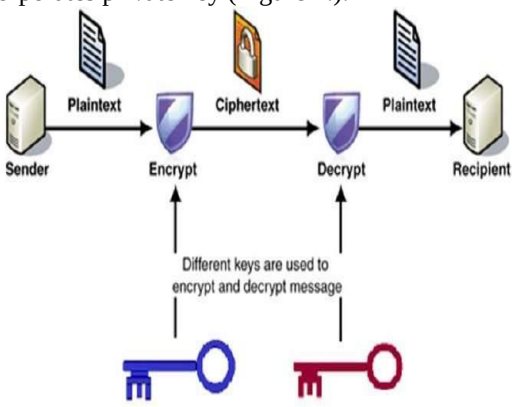

Figure 4. Asymmetric Encryption and Decryption

Difference between Cryptography and Steganography:

The Table 2. Illustrates the difference between Cryptography and Steganography:

BASIS FOR COMPARISON	CRYPTOGRAPHY	STEGANOGRAPHY
Basic	It means secret writing.	It is known as cover writing.
Goal	Data protection	Secret communication
Structure of the message	Altered only of the transmission.	Not altered
Popularity	More commonly used.	Less popular
Relies on	No parameters.	Key
Supported security principles	Confidentiality, data integrity, authentication, and non-repudiation.	Confidentiality and authentication
Techniques	Transposition, substitution, stream cipher, block ciphers.	Special domain, transform domain, model-based and ad-hoc.
Implemented on	Only on text files.	Audio, video, image, text.
Types of attack	Cryptanalysis	Steganalysis

Table 2. Comparative analysis of Cryptography and Steganography

By studying these differences, we can propose that steganography is alternate solution for cryptography.

3. Combining both Steganography and Cryptography:

Steganography and cryptography have been found to be individually insufficient for complete information security; therefore, a more reliable and strong mechanism can be achieved by combining both techniques [45]. Combining these strategies can ensure an improved secret information security and will meet the requirements for security and robustness for transmitting important information over open channels. Figure 5 presents a strategy for the combination of both techniques

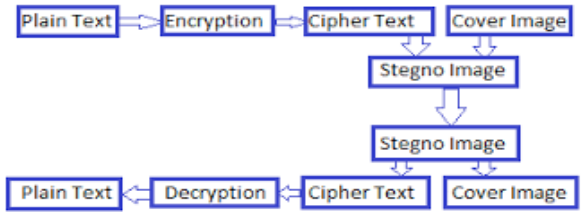

Figure 5. Illustration of combination of Cryptography and Steganography

In cryptography, the system can be cracked by the intruder and he/she can read the secret message. To break the steganography, the attacker needs to notice that some important information is covered by the object and he is able to read the covered message by breaking the steganographic system. However, it is always a good practice to use Cryptography and Steganography together to add adding multiple layers of security. Combining means, the cipher text of secret message can be obtained by using any data encryption algorithm and then cover the obtained cipher text in an any other digital media using stego key. The combination of these two methods will enhance the security of the data embedded. This combined harmony will satisfy the requirements such as integrity, confidentiality,

security and robustness for secure transmission of secret message over an open channel. The **figure 5.** illustrates the combination of cryptography and steganography [13]

Conclusion:

The study of comparison between the science of Cryptography and Steganography, the authors cannot guarantee that steganography and cryptography are alternatives for each other. Cryptography is the study of converting of original data which is readable and understandable into a form which cannot be read or understood by the attackers in order to secure confidential data, while Steganography is art of hiding confidential information in a cover media like image, audio, video in such a way that the attackers will not be able to detect it. Steganography and cryptography have been found to be individually insufficient for complete information security and using any one of these two techniques to hide the information is susceptible. Therefore, the combination of these two technique can give more layers of security and confidentiality, integrity and robustness of information is guaranteed.

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A Review of Automated Techniques for Brain Tumor Detection from MR Images

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ABSTRACT: ***Abstract-*** *To find out the severity of different injuries in human body by scanning the patient can be done by MRI process i.e. Magnetic Resonance Imaging. Exact location of tumor in brain can identify by segmentation process. Due to automation this process can be done easily and within* **minimum time. To study various techniques of** *automated brain tumor detection for the medical investigation reasons. In this review paper we studied different brain tumor segmentation methods using MR images. Here we analyse and compare various segmentation techniques with their advantages and disadvantages.*

Keywords— *Magnetic resonance imaging, Brain tumor segmentation*

I. INTRODUCTION

Brain tumor is the disease which we find all over the world. MRI process is the gift for the patients to identify brain tumor disease, But Shapes, appearance and sizes of the tumor is the challenge. For the accurate classification of medical resonance imaging is essential for medical diagnosis.

This paper presents a review of different techniques used for brain tumor image segmentation. This paper is organized into four parts. After this introductory part, the next part highlights the major techniques that have been studied as part of the literature survey. Part III outlines crucial evaluation of the techniques discussed in the related work section. Finally Part IV, we conclude in the last section.

II. LITERATURE REVIEW

2.1 Image Segmentation

Image segmentation is serious task. Differentiating the normal and abnormal region is most challenging task while segmenting image. Image segmentation is divided into three types:

2.1.1Spatial Clustering

In image segmentation grouping is done in spatial domain and in image clustering it is done in measurement space. Clustering for image segmentation usually classifies image pixels into - clusters such that members of the same cluster are more similar to one another than to members of other clusters, where the number, , of clusters is usually predefined or set by some validity criterion or a priori knowledge[1].

2.1.2 Split and Merge Segmentation

In split method, firstly entire image is consider and it splits into quarters. This process is repeated until homogeneity condition is not satisfied. In merge method, it merges or joins adjacent segments of the same object [2].

2.1.3 Region Growing

In region growing method neighboring points are connected to each other to make the region bigger. This method is depending on the selection of threshold value [2, 3, and 4].

2.2 REVIEW OF IMAGE SEGMENTATION TECHNIQUES

The manual brain tumor segmentation is time consuming process to overcome this problem. All chooses automated detection and segmentation process. In recent years, many techniques are developed for automation of imaging, scanning, detection and segmentation. These methods mostly classified into intelligent based method and non-intelligent based method. Out of which some methods have been reviewed. The following figure shows different segmentation techniques.

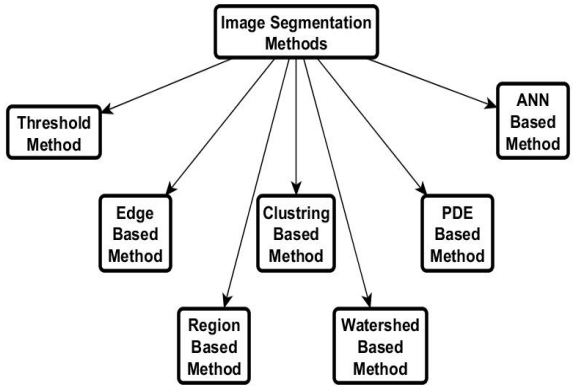

Figure 1: Segmentation Methods

2.2.1 Threshold based method

In this method firstly intensity value is calculated which is called threshold which separate each class from other. This method is mainly depending on gray level intensity value. In this method the pixel having intensity greater than threshold are group into one class and remaining into other class. But the drawback of this method is there are only two classes. This method is not good when borders are not clear.

2.2.2 Edge Based Method

Edge Based Segmentation method is a connected pixel that is found on the boundary of the region is called an edge. So these pixels on an edge are known as edge points. Edge can be calculated by finding the derivative of an image function.

2.2.3 Region Growing based method

This method is used to extract a region of the image which is based on predefined criteria. The manually selected seed Points are required for region growing and extract all pixels which are connected to initial seed. The drawback of this technique is sensitive to noise so this method is not sufficient for segmenting brain tumor correctly. This method is semiautomatic because it requires manual input seed selection. It is simpler than edge detection method.

2.2.3 Neural Network based method

This method uses a model which consist neurons and weighed connection between them. To obtain the values of weights i.e. coefficients requires training. Several types of network used for image segmentation for eg. Multilayer Perception (MLP).The earliest application of MLP is trained the neural network using known diagnostic image. Detection and visualization of brain tumor can be done by using unsupervised learning artificial neural network.

2.2.4 Clustering Based Segmentation Method

The clustering based techniques are the techniques, which segment the image into clusters having pixels with similar characteristics. Data clustering is the method that divides the data elements into clusters such that elements in same cluster are more similar to each other than others.

2.2.5 Water Based Method

The watershed based method uses the concept of topological interpretation. In this the intensity represents the basins having hole in its minima from where the water spills. When water reaches the border of basin the adjacent basins are merged together. To maintain separation between basins dams are required and are the borders of region of segmentation. These dams are constructed using dilation. The watershed methods consider the gradient of image as topographic surface.

2.2.6 Partial Differential Equation Based Segmentation Method

This method is the fast method of segmentation. These are appropriate for time critical applications. There are basic two PDE methods: non-linear isotropic diffusion filter (used to enhance the edges) and convex non-quadratic variation restoration (used to remove noise).

2.2.7 Neural Network based method

This technique uses a model which consist neurons and weighed connection between them. To obtain the values of weights i.e. coefficients requires training. Several types of network used for image segmentation for e.g. Multilayer Perception (MLP).The earliest application of MLP is trained the neural network using known diagnostic image. Detection and visualization of brain tumor can be done by using unsupervised learning artificial neural network.

2.2.8 Hybrid based technique

Different methods of machine learning algorithm are combined to form hybrid system. It gives better solution to a problem, which is not given by single method.

III. CRITICAL EVALUATION

Comparative study of different segmentation techniques is summarized in compare table **(Table-I)** with proposed method, algorithm used and advantages, disadvantages.

Author	Title	Proposed Technique	Algorithm Used	Advantages	Disadvantages
K. Sudharani Dr.T.C. Sarma Dr. K. Satya Prasad (1995)	Advanced Morphological Technique for Automatic Brain Tumor Detection and Evaluation of Statistical Parameters[5]	Advanced morphological Technique	Threshold	The proposed method is able to detect very low intensity parts of the image	It works on T2 weighted MRI images. Some Standard Mathematical calculation is needed.
Kovacevic (1997)	A method for segmentation of CT head images[6]	Receptive field	Radial basis function on neural network	Training algorithm is moderately simple as compared to the back-propagation iterative algorithm used with MLP.	The proposed algorithm does not fit on trained data
Zhang (2001)	Segmentation of brain MR images [7]	Segmentation of brain MR images	Expectation Maximization	Technique possesses ability to encode both spatial and statistical properties of an image.	This method does not produce accurate results most of the time and is computationally expensive.
Ahmed (2002)	MRI data Segmentation [8]	Bias field Estimation	Fuzzy C-Mean	An algorithm is faster to generate accurate classification	Integration of spatial constraints into the classification blurs some fine details.
Tolba (2003)	Segmentation of MR images [9]	Gaussian Multi-resolution Analysis	Expectation Maximization	It uses strong spatial correlation between neighbouring pixels.	The edges rarely appear in the images.
				Technique uses enhanced	With this method some

Li (2004)	Fusion of images [10]	Wavelet based	Discrete Wavelet frame transform	version of DWT and is relatively easy to implement.	noise is easily introduced into the fused image, which will reduce the resultant image quality consequently
Sing (2005)	Segmentation of MR images[11]	Neural Network	Fuzzy Adaptive radial basis function	Removes noise from medical images without losing sharpness of the objects.	Dynamic ranges were not considered during calculations.
Yu (2008)	3 level image segmentation [12]	Maximum fuzzy partition entropy of 2D histogram	QGA	QGA is selected for optimal combination of parameters.	Compute each possible value QGA is practically not possible.
Kumar (2011)	Automatic Segmentation using Seeded Region Growing Method[13]	Texture based Tumor detection and automatic segmentation	Seeded Region growing	To determine abnormality is present in the image or not.	It takes more time.
Roy (2012)	Symmetry analysis [14]	Modular approached to solve MRI segmentation	Symmetry analysis	The proposed method can identify the status of increase in the disease by employing quantitative analysis.	Time Consuming
A. Jayachandran and D. Raghavan (2013)	Brain tumor Detection and Classification of MRI Using Texture Feature and Fuzzy SVM Classifiers [15]	Based on hybrid algorithm for detection of brain tumor by using statistical and SVM classifier.	Hybrid algorithm for detection of brain tumor	Classification of normal and abnormal brain MR images	Principal component analysis diminishes the lower dimensionality of the texture feature.
M.Y. Bhanumurthy and K. Anne (2014)	An Automated Detection and segmentation of Tumor in Brain using Artificial Intelligence[16]	Neuro-fuzzy classifier, Region growing method	Region growing method	To detect and segment abnormal tissues like tumor and atrophy in brain MRI images accurately	Region growing method is very costly in terms of calculation of time and memory.
K. Sudharani, T.C. Sarma and K.S. Rasad (2015)	Intelligent Brain Tumor Lesion Classification and Identification from MRI Images Using k-NN	SVM & SVM-KNN classification	KNN Classification	KNN is one of the simplest of classification algorithms available for supervised learning	Large search problem to discover nearest neighbour and Storage of data.
G. Singh and M.A. Ansari (2016)	Efficient Detection of Brain Tumor from MRIs Using K-Means Segmentation and Normalized Histogram[18]	K-Means Segmentation and SVM &Naive Bayes classification	K-Means segmentation	Relatively simple to implement. Scales to large data sets	admirably with clusters (in the original input data) of various size and Different density.
R. Ahmmed, A.S. Swakshar and Md. F.Hossain, Md.A. Rafiq (2017)	An Advanced Algorithm Combining SVM and ANN Classifiers to Categorize Tumor with Position from Brain MRI Images[19]	TKFCM Segmentation, SVM Classification and ANN classification	Hybrid Algorithm	Better Accuracy Less time is required Better reliability	Trouble in choosing ideal features to recognize distinctive classes are time consuming.
Sonali Bansal, Shubpreet Kaur, Navdeep Kaur (2019)	Enhancement in Brain Image Segmentation using Swarm Ant Lion Algorithm[20]	Hybridization of PSOA and ALO. A Swarm Ant Lion method	Hybrid Algorithm	Result improves the performance metrics with PSNR and Accuracy Rate and reduces the error rates and compared with the existing method (PNN). Accuracy level is enhanced.	Extraction of features from Images is not possible

IV. Conclusion

Thus the diagnosis and location of tumor in brain can be found accurately by above given methods. So these are very efficient and important modified methods in biomedical imaging applications. Stronger image segmentation technique can be developed in future by elaborating above methods.

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Overview of Big Data

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ABSTRACT: ***Big data is a large set of data that is used to describe a massive volume of both structured and unstructured data that is so large and it's difficult to process using traditional database and software techniques. When handling such massive datasets organization faces problems in becoming capable to create manipulate and manage this massive data, because standard tools and procedures are not available to search and analyze such enormous datasets. This paper deals with big data, we discuss about big data, how big data generate, what are the characteristics of big data. We also explain what is big data analytics and how it is handle for that we have discuss example of IBM big data analytics. While studying with big data and its challenges we found that Hadoop is the technology which can be used to handle big data.***

Keywords- *Big Data, 5V's, Big Data Analytics.*

1. Introduction

Big data is the term for gathering large and complex data sets which becomes difficult to process using on-hand database system tools or traditional data processing applications. Big Data is also data which is large in size. Big Data means a large datasets that cannot be processed by traditional computing techniques. Big data is not only a data, rather it has become a complete subject, which involves various tools, techniques and frameworks. Big data generates value from the storage and processing of very large quantities of digital information that cannot be analyzed with simple computing techniques. New technologies, devices, communications are growing day by day. So the amount of data produced by mankind is growing rapidly every year. Almost 90% of the world's data was generated in the last few years.

Big data is getting larger every minute in almost every sector, be it tech, media, retail, financial services, travel, and social media, to name just a few. The volume of data processing we are talking about is mind boggling.

Following statistical information gives an idea about big data

Table 1: Statistical information about big data

Sources	Generated Data
Google search	3.5 billions of searches per day, which is over 40,000 searches every second on an average.
Weather channel	It receives 18,055,555 forecast request in every minute.
Instagram	In every minute Instagram users post 49,380.
Netflix	In every minute users stream 97,222 hours of video
Skype	In every minute users make 176,220 calls every.

Therefore, when we say Big Data, it essentially refers to data or sets of records that are too large to be survivable. They are produced through the search engines, business informatics, social networks, social media, genomics, meteorology, weather forecasts, and many other sources. This information cannot be operated using current database management tools and techniques. Big Data disclose an arena of big challenges in terms of storage, capture, management, maintenance, analysis, research and new tools to handle them.

2. Characteristics of Big Data-

There are five characteristics of Big Data that are Velocity, Volume, Value, Variety, and Veracity.

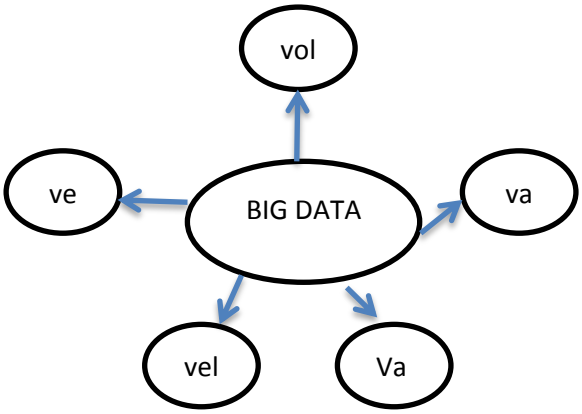

Fig. 1: Characteristics of Big Data

2.1. Velocity

Velocity refers to the speed amounts of data are being generated. System generated stream of data and multiple source feeding data for one system so for this Velocity need fast processing. Each and every day the number of emails, twitter messages, photos, video clips, etc. increases rapidly. Each and every second of every day data is increasing. Not only the data must it be analyzed, but the speed of transmission, and access to the data must also remain instantaneous to allow for real-time access to website, credit card verification and instant messaging. Big data technology permits us to analyze the data while it is being generated, without ever putting it into databases.

2.2. Volume

Volume refers to the amount of data that can be generated. The data is generated each second from social media, cell phones, cars, credit cards, Machine to Machine (M2M) sensors, photographs, video, etc. The huge amounts of data have become so large in fact that we can no longer store and analyze data using traditional database technology. Now we use distributed systems, where parts of the data is stored in different locations and brought together by software. For example Facebook alone there are 10 billion messages, 4.5 billion times that the "like" button is pressed, and over 350 million new pictures are uploaded every day. Collecting and analyzing this data is clearly an engineering challenge of immensely vast proportions.

2.3. Value

When we discuss about value, we're referring to the worth of the data being extracted. Having infinity amounts of data is one thing, but unless it can be turned into value it is useless. While there is a connection between data and insights, this does not always mean there is value in Big Data. The most important part of embarking on a big data initiative is to understand the costs and benefits of collecting and analyzing the data to ensure that ultimately the data that is received can be monetized.

2.4. Variety

Variety is refers to the different types of data like structured data, unstructured data. Data today looks very different than data from the past data. structured data (name, phone number, address, financials etc) that fits nice and neatly into a data table. Today's data is unstructured. Almost 80% of all the world's data fits into this form, including photos, video sequences, social media updates, etc. New and innovative big data technology is now allowing structured and unstructured data to be harvested, stored, and used simultaneously.

2.5. Veracity

Last, but certainly not least there is veracity. Veracity is the quality or trustworthiness of the data. Just how accurate is all this data? For example, let see all the Twitter posts with hashtags, abbreviations, typos, etc., and the reliability and accuracy of all that content. Gleaning loads and loads of data is of no use if the quality or trustworthiness is not accurate. Another good example of this relates to the use of GPS data. Mostly the GPS will "drift" off course as you peruse through an urban area. Satellite signals are lost as they bounce off long buildings or other structures. When this happens, location data has to be fused with another's data sources like road data, or data from an accelerometer to provide accurate data.

3. What is Big Data analytics?

Basically what Big data analytics is doing, it is helping large company to facilitate their growth and development. Big data analytics techniques use in large data set which comes from different sources in different size from terabytes to zettabytes that include structured, semi-structured, and unstructured data. Big data is applied to data sets whose size or type is beyond the ability of traditional relational databases to capture, manage and process the data with low latency. Big data has a following characteristics: high volume, high velocity or high variety. Artificial intelligence (AI), mobile, social and the Internet of Things (IOT) are driving data complexity through new forms and origins of data. For example, big data comes from sensors, devices, video/audio, networks, log files, transactional applications, web, and social media — most of it generated in real time and at a very large scale.

Big data analysis allows analysts, researchers and business users to make better and faster decisions using data that was previously inaccessible or unusable. Advanced analytics techniques are uses in Business such as text analytics, machine learning, predictive analytics, data mining, statistics and natural language processing to gain new insights from previously integrated data sources independently or together with present enterprise data. Consider the following example of how big data analytics works.

Let's see how IMB Big Data Analytics works?

In earlier the process of collecting data which is Reading of meters from Each and every house is time taking process it almost takes 1 month to gather the data. But now a days IBM came with Smart meters. This is time consuming process. In this process data will be get gathered in 15 mins. Because of this the Big data was generated.

There are 96 Billions of readings from every million meters which is very huge data.

IBM realized that the gathered data was very important for them to gain something from it. For that they need analysis of that data.

To manage and use this information to gain insight, Utility companies must be capable of high-volume data management and advanced analytics design to transform data into actionable insights. Before analyzing that data they came to know that Energy utilization and Billing was increased. After analyzing the Big-data they realize that during peak-load user require more energy and during off peak time the user requires less energy.

In industries they use their machineries during there off peak time, so that load will be balanced.So that off-time use price encourages cost-savvy retail like industrial heavy machines to be used at off-peak time.So they can save money as well because the Off-peak time prices are less than the peak time prices.

This is how IBM smart meter big data is analyzed. IBM smart meter solution is, First the all collected data will be get gathered in Data Warehouse and it will be kept as secure. Then we have to sort the data and keep the useful data in it (Data mining) and at last perform certain analysis.

In order to do this we have to take care of few things which is as below:-

- Monitoring smart meter data
- Monitoring the distribution grid.
- Optimizing unit commitment
- Optimizing energy trading
- Forecasting and scheduling loads.

IBM offers an integrated suite of products designed to enable IT to leverage big data in a variety of ways that can contribute in the success of energy Companies.

ONCUR using IBM smart meter solution.

ONCUR is electrical delivering company and it is largest electric distribution and Transmission Company in Texas and one of the 6th Largest company in the United States.

When they implement this they kept 3 things in mind that is :-

1. Instrumented - Utilizes smart electricity meters to accurate measurements of the electricity usage of a household.

2. Interconnected - Unprecedented access to detailed information about their electricity use.

3. Intelligent - Consumers monitor and Control their electricity usage through near near Real time readings of electricity meters.

Benefits is that customer's in Oncors service territory showed last year during the company's biggest energy saver contest, by using the information from Oncors advanced meter user reduced their electric usage and bills by 25% and more.

While analyzing big data some problems are generated, the problems are-

- Problem 1. The data was storing exponentially, growing huge datasets. Because data generated in past two years is more than the precious history in total. By 2020, total digital data will grow to 44 terabytes approximately. By 2020, about 1.7 MB of new information will be created every second for every person.
- Problem 2. Processing data having complex structure like data should be structured format like RDBMS data etc., In semi structured format such as XML & JSON file and data in also unstructured format like multimedia files etc.
- Problem 3. Processing data faster. The data is growing of much faster rate than that of disk read/write speed.

To solve these problems there are some techniques which are HADOOP & DATA MINING, etc.

- **Data mining** is the process of uncover patterns in huge data sets. Data mining is the process of examine data and encapsulate it to produce useful information. Data mining uses worldly data analysis tools to discover designs and relationships in large datasets. Data mining tools allow a business organization to predict customer behavior.
- **Hadoop** is the framework that allows to store and process the large data sets in parallel and distributed fashion.

4. Conclusion

As Big Data, low-cost commodity hardware and new information management and analytic software are available, it makes visible change in the history of data analysis. By gathering these trends, first time in the history we acquired capabilities to analyze massive data sets quickly and economically. These capabilities give excess gain in terms of efficiency productivity revenue and profitability. The age of Big Data makes big revolution in the business and technology persons to work together. Hadoop technology can give real benefits of Big Data. Hadoop give you the scale and flexibility to store data before you know how you are going to process it. Real time Big Data is not just process for storing petabytes or Exabyte of data in a data warehouse. It is about the ability to make better decisions and take meaningful action at the right time.

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Overview of Data Warehousing and Data Mining

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ABSTRACT: ***In this article, we'll take a detailed look at Data warehouse and Data Mining. This paper tries to explore the overview, advantages and disadvantages of data warehousing and data mining with suitable diagram and it also show the phases of data warehousing. This paper also discuss the difference between Data warehousing and Data mining. Data warehousing and data mining are interrelated. Data warehouse are used for analytical purpose and business reporting. A data warehouse is database system which is designed for analytical analysis instead of transactional work. Data warehousing enhance the speed and efficiency of accessing varies data sets and makes it easier for support decision-makers to derives insights that will guide the business and marketing strategies that set them apart from their competitors. Data mining will analyze the data and extract the meaning from it. It will also work for hidden patterns within the data and try to predict next incoming behavior. Data mining is the process of analyzing data patterns. Data mining is used in market analysis and management, fraud detection, corporate analysis and risk management. Data mining tools can be used in artificial intelligence, statistics, machine learning and database systems to find correlations between the data. These tools can help to answer business questions which are consuming to resolve***

Keywords- *Data warehousing, Data Mining, KDD, Metadata*

1. Introduction

The huge amount of data can be created from historical data which integrate those data from different sources and store them centrally this special repository called as Data Warehousing (DW). DW is a large collection of business data such as sales, marketing, finance, etc. are used to help for making a decision of business organization. It was simply to provide relevant data efficiently and quickly. High professionalize businesses found themselves with data dispense across multiple platforms and different technology, making it almost impossible for any one individual to use data from multiple sources. A key idea within data warehousing is to take data from multiple platforms them in a common location that uses a common querying tool. A DW is read-only-data. Data Mining (DM) is also called as Knowledge Discovery Database (KDD). DM is the extraction of secret predictive information from huge database, is new technology to aid companies focus for importance information in their DW. This paper gives overview of Data warehousing and Data mining.

The rest of the paper organized as given below section 2 describes about Data warehousing, about Data mining is given in section 3,section 4 gives difference between Data warehousing and Data mining, section 5 summarizes merits and demerits of Data warehousing and Data mining, and last section gives the conclusion.

2. Data warehousing

A data warehouse is a collection of unified databases. DW is the process of compiling and organizing data into one common database i.e data warehouse. A data warehouse is designed as integrating data from various type of heterogeneous i.e. diverse sources that support analytical reporting, structured and/or ad hoc queries, and decision making. Data warehousing involves data cleaning, data integration, and data transformation.

2.1 Properties of Data Warehouse-

Bill Inmon who defined it as "A Data warehouse is a subject oriented, integrates, time-variant, and non-volatile collection of data in support of following –

Subject Oriented- The data warehouse is subject oriented because data is categorized and stored by business subject. It gives information around a subject rather than the organization's ongoing operations. Data warehouses focus on past subjects, such as, sales, revenue, and not on ongoing and current organization data.

Integrated- The data warehouse is integrated means data on given subject is collected from multiple sourced such as relational database, flat files, etc. and stored in single place.

Time-Variant- The data in data warehouse collected is recognized with a particular period of time. Data uploaded into a warehouse can be identified with a certain timeline making it a multidimensional historical view whenever you access data.

Non-volatile- The data in a warehouse is of the non-volatile type because, in data warehouse data is not deleted or updated. Once a data is comes into data warehouse it can't be deleted or changed.

A data warehouse permit to process the data stores in it. The data can be deal with querying, basic statistical analysis, reporting using tables, charts, or graphs.

2.2 Metadata

Metadata is clearly defined as data about data. The data that are used to appear for other data is known as metadata. Metadata in data warehouse explain the warehouse objects. Metadata behave as a directory. Metadata assist in decision support system for mapping of data when data is converted from operational environment to data warehouse circumstances. It is used for query tool. It plays an important role in loading functions. Metadata use in driving them precision of reports, validates data transformation, and ensures the accuracy of calculations. Metadata existing in text files or multimedia files. To utilize this data for information management solutions, it has to be correctly defined.

2.3 Process flow in Data Warehouse-

There are four main processes that contribute to a data warehouse

- Extracting and loading the data.
- Cleaning and transforming the data.
- Backup and archive the data.
- Query management process

Data warehouse are widely used in the following fields-

Financial services, Banking services, Consumer goods, Retail sectors etc.

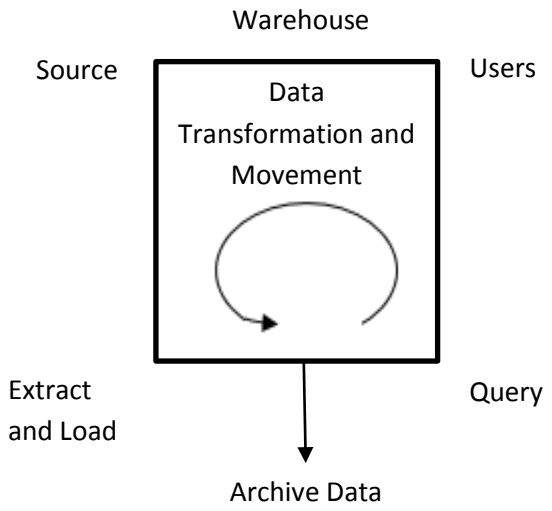

Fig (1): Process flow in Data Warehouse

[Source:http://www.tutorial.com]

3. Data Mining

Data mining is the process of uncover patterns in huge data sets. Data mining is the process of examine data and encapsulate it to produce useful information. Data mining uses worldly data analysis tools to discover designs and relationships in large datasets. Data mining tools allow a business organization to predict customer behavior. Extraction of information is not the only process we need to execute; data mining also involves other processes such as Data Cleaning, Data Integration, Data Transformation, Data Mining, Pattern Evaluation and Data Presentation. These process area as shown in fig(2).Data mining tools are used to build risk models and detect fraud. Data mining is used in market analysis and management, fraud detection, corporate analysis and risk management. Data Mining is also called as Knowledge Discovery in Database (KDD) process.

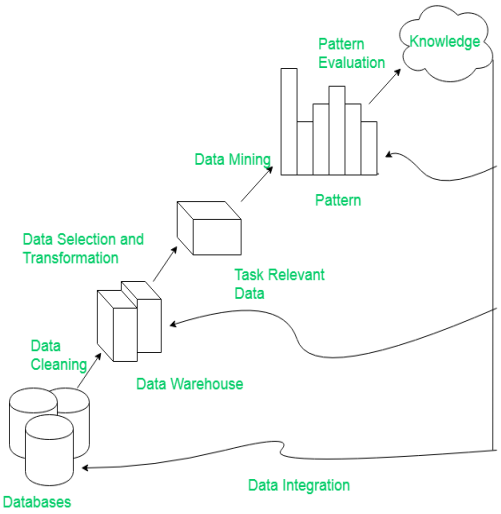

Fig (2) : KDD Process
[Source: http://www.geeksforgeeks,org]

3.1 Real Life example Of Data Mining

3.1.1 Market Basket Analysis

Market Basket Analysis is a technique which gives the careful study of purchases done by a customer in a super market. The concept is essentially applied to recognize the items that are bought together by a customer. Say, if a person buys sauce, what are the chances that he/she will also purchase bread. This analysis helps in promoting offers and deals by the companies. The same is done with the help of data mining.

3.1.2. Fraud Detection-

Data mining is also used in the fields of telecommunication and credit card services to identify frauds. In fraud telephone calls, it helps to find the place of the call, time of period the call, time of the day or week, etc. It also analyzes the patterns that deviate from expected average.

3.1.3 Telecommunication Industry-

Telecommunication industry is one of the most emerging industries providing various services such as fax, pager, cellular phone, internet messenger, images, e-mail, web data transmission, etc. Data mining in telecommunication industry helps in recognize the telecommunication patterns, catch fraudulent activities, make better use of resource, and improve quality of service.

4. Difference between Data warehousing and Data mining-

4.1. Data warehousing

- Data warehouse provides an environment where the data is stored in an integrated form which support data mining to extract data more efficiently.
- Data warehouse hold integrated and processed data to perform data mining at the time of planning and decision making
- Data warehousing is a process which needs to occur before any data mining can take place.
- Data warehouses are created for a huge IT project. Therefore, it involves high maintenance system which can impact the revenue of medium to small-scale organizations.
- In Data warehouse, the data needs to be cleaned and transformed. This could be a challenge.
- Data warehouse allows users to access unfavorable data from the number of sources in a single place. Therefore, it saves user's time of retrieving data from multiple sources.
- Data Warehouse has ability to update consistently. That's why it is ideal for the business owner who wants the best and latest features.

4.2. Data Mining

- Data mining is a process of extracting meaningful data from the huge database or data warehouse.
- Data come across by data mining results in finding patterns that are useful for future predictions.
- Data mining is usually done by business users with the assistance of engineers.
- The information gathered based on Data Mining by organizations can be misused against a group of people.
- Data mining tools work in different manners due to various algorithms employed in their design.
- Data mining techniques is the identification of errors which can lead to losses. Generated data could be used to detect a drop-in sale.
- One of the most important benefits of data mining techniques is the detection and identification of errors in the system. [4]

5. Merits and Demerits of Data warehousing and Data Mining

Merit-

- A Data warehouse Delivers Enhanced business Intelligence- The data warehouse

- and related Business Intelligence (BI) processes can also be directly implemented in inventory management, financial management, sales and marketing.
- Enhanced the data Quality and Consistency- Businesses can run with higher accuracy and consistency, generating persistent and dependable employment decisions.
- Saves Time and Money-The business continue to run every time and anytime, without any time lag or reliance on external sources.
- Provide Historical Intelligence- Businesses can track data in different time periods and proceed likewise in the future.
- Data mining be relevant effectively not only in the business environment but also in other fields such as weather , medicine, transportation, healthcare, insurance, forecast, government…etc.
- Help with Decision Making.

Demerits-

- Adding new data sources takes time and associated high priced.
- Ownership Concerns-while warehousing is all about centralizing data at one place for the ease of analysis and access. It sometimes causes issues to different departments as they hesitate to share their personal data within a central repository.
- Long initial implementation time and associated high cost.
- Security issues- Businesses own information about their employees and customers including social security number, birthday, payroll and etc. There have been a many cases that hackers accessed and stole big data of customers from the big corporation.
- Possible misuse of information-Information is collected through data mining intended for the ethical purposes can be misused.

6. Conclusion-

A data warehouse is a solution to a business problem. The data warehousing and data mining need to constantly overcome obstacles that are yet undefined and improves the goodwill of organization. Data mining helps in securing and processing the data into understandable cube, where warehousing helps in analyzing the data and put it in such a way as to facilitate comparison between trends, analyzing the data for the business predictions. Data mining brings a many benefits to businesses, society, governments as well as the individual. One powerful feature of data warehouses is that data from various locations can be combined in one location. A data warehousing and data mining implementation includes the conversion of data from various source systems into a common format with accuracy, it helps the organization in the strong business decision and help to expand the business empire. A Data Warehouse Enhances uniformity and Data Quality each data from the different departments is normalized, each department will produce results that are in line with all the other departments. It is relevant and organized in an efficient manner. Dissimilarity between data mining and data warehousing are the system designs, a methodology used and the purpose. Data warehousing is a process that must arise before any data mining can take place. A data warehouse is the circumstances where a data mining process might take place. Lastly, it can be said that a data warehouse organizes data effectively so that the data can be mined.

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Role of Python in Artificial Intelligence

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ABSTRACT: ***Artificial Intelligence (A.I.) is an emerging a field of research. AI goal is to automate activities that presently require human intelligence. Python is an open source programming language which has very attractive features like easy to learn and use, expressive language , interpreted Language, cross-platform Language ,Free and Open Source. Because of these, now a day python is very useful for rapid application development. In this paper we first introduce python. We discuss about its features and give some advantages of using python. Also we discuss about Artificial Intelligence its type and some of its applications. From this study we found that python is very useful language for building various application of artificial intelligence***.

1. Introduction

Python is a general purpose, publically, high level, and interpreted programming language. It supports Object Oriented programming to develop applications. It is easy to learn and provides lots of high-level data structures. Python is easy to learn know powerful and versatile scripting language, which makes it attractive for Application Development.

The term "artificial intelligence" means a programme which mimics human intelligence. Artificial intelligence is the way of a computer program or a machine to think and learn. It is also a way of study which tries to make computers "smart". They help on their own without being encoded with commands

2. Python

Python is an interpreter, object-oriented, high-level programming language with publically semantics. Its high-level built in data structures with publically using and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's easy to learn syntax readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which use program modularity and code reuse. The Python interpreter own library are available in source or binary form without charge for all major platforms, and can be freely distributed.

Often, programmers fall in love with Python because of the implement productivity it provides. See there is no compilation step, the edit-test-debug cycle is incredibly fast. Debugging Python programs is easy error or bad input will never cause a segmentation fault. Instead, when the interpreter face an error, it raises an exception. When the program doesn't know the exception, the interpreter prints a stack trace. A source level erroe allows inspection of local and global variables, evaluation of arbitrary expressions, setting breakpoints, stepping through the code a line at a time, and so on. The developer is written in Python own, satisfying to Python's introspective power. On the other hand, often the easy way to error a program is to add a few print statements to the source: the fast edit-test-debug cycle makes this simple approach very effective. **[3]**

2.1. Python Features

Python provides many of features that are listed below.

- Easy to Learn and Use - Python is easy to learn and use. It is developer-friendly and high level programming language.
- Expressive Language - Python language is more easy means that it is more understandable and readable.
- Interpreted Language- Python is an interpreted language i.e. developer executes the code line by line at a time. This makes debugging easy and suitable for beginners.
- Cross-platform Language- Python can run same on different platforms such as Windows, Linux, Unix and Macintosh etc. So, we can say that Python is a cross platform language.
- Free and Open Source - Python language is freely available at address. The source-code is also available. Therefore it is open source.**[4]**

2.2. Advantage

- The Python Package Index contains no of third-party modules that make Python capable of interacting with most of the other languages and platforms.
- Extensive Support Libraries: Python provides a more standard library which includes areas like internet protocols, string operations, web services tools and operating system interfaces. Many more use programming tasks have already been scripted into the standard library which reduces length of code to be written significantly.
- Open Source and freely Development Python language is developed under an Open Source approved open source license, which makes it free to use and distribute, including for commercial purposes.**[5]**

3. Artificial Intelligence

- Artificial intelligence is the things of human intelligence processes by machines, especially computer systems. These processes include learning, reasoning and self-correction. similar applications of Artificial Intelligence include expert systems, speech recognition and machine vision.
- Artificial intelligence can be divide as either weak or strong. Weak Artificial Intelligence, also call as narrow Artificial Intelligence, is an Artificial Intelligence system that is designed and trained for a particular task. Virtual own assistants, such as Apple's Siri, are a form of weak Artificial Intelligence. best Artificial Intelligence, also known as artificial general intelligence, is an Artificial Intelligence system with generalized human cognitive abilities. When presented with an unfamiliar task, a strong Artificial Intelligence system is able to find a solution without human intervention.
- Because hardware, software costs for Artificial Intelligence can be expensive, many vendors are including Artificial Intelligence components in their standard offerings, as well as access to Artificial Intelligence as a Service (AIaaS) platforms. Artificial Intelligence as a application allows separately and companies to experiment with Artificial Intelligence for various business purposes and sample multiple platforms before making a commitment. Popular Artificial Intelligence cloud offerings include Amazon Artificial Intelligence services, IBM Watson Assistant, Microsoft Cognitive Services and Google Artificial Intelligence services **[2]**

3.1. Types of Artificial Intelligence

A. Arend Hintze, an personal professor of integrative biology and computer science and engineering at Michigan State University, categorizes Artificial Intelligence into three types, from the kind of Artificial Intelligence systems that exit today to sentient systems, which do not yet exist. His categories are as follows:

- **Type 1: Reactive machines**. An example is Deep Blue, the IBM match program that beat Garry Kasparov in the 1990s. Deep Blue can match pieces on the match board and make easy, but it has no memory and cannot use past experiences to inform future ones. It analyzes easy moves its own and its component and chooses the most strategic move. Deep Blue and Google's Alpha GO were use for narrow purposes and cannot easily be applied to another situation.
- **Type 2: Limited memory.** These Artificial Intelligence systems can use past experiences to inform future decisions. Some of the decision-making functions in self-driving car are designed this way. Observe inform actions happening in the not so distant future, such as a car changing lanes. These observations are not stored permanently.
- **Type 3: Self-awareness.** In this category, Artificial Intelligence systems have a sense of self, have consciousness. Machines with itself understand their current state and can use the information to infer what others are feeling. This type of Artificial Intelligence does not yet exist **[2].**

B. 3.2. Artificial Intelligence Applications

Artificial intelligence has make its way into a number of areas. Here are three examples.

- **Artificial Intelligence in healthcare**. The biggest improving patient outcomes and reducing costs. Companies are applying machine learning to make better and fast diagnoses than humans. One of the best way known healthcare technologies is IBM Watson. It understands simple language and is capable of responding to questions asked of it. The system understand data and other available data sources to form a hypothesis, which it then presents with a confidence scoring schema.Artificial Intelligence applications into chatbots, computer program help online to answer questions and assist customers, to help schedule follow-up appointments or aid patients through the billing process, and personal health assistants that provide basic medical feedback.
- **Artificial Intelligence in business**. Robotic process automation is being applied to highly repetitive tasks normally performed by humans. Machine learning algorithms are use

- integrated into analytics and CRM platforms to uncover information on how to better serve customers. Chatbots have been incorporated between websites to provide immediate service to customers. Automatic of job positions has also come a talking point among academics and IT analysts.
- **Artificial Intelligence in education**. Artificial Intelligence can automate grading, giving educators more time. Artificial Intelligence can assess students and adapt to their needs, helping them work at their own pace. Artificial Intelligence tutors can provide additional support to students, ensuring they stay on track. Artificial Intelligence could change where and how students learn, perhaps even replacing some teachers.**[2]**

4. Python as the best for Artificial Intelligence

As Artificial Intelligence are being applied across various channels and industries, big corporations invest in these fields, and the demand for experts in Artificial Intelligence grows accordingly. Jean Francois Puget, from IBM's machine learning department, expressed his opinion that Python is the most popular language for Artificial Intelligence and based it on a trend search results on indeed.com. According to the graph from Francois Puget, Python is the major code language for Artificial Intelligence and Machine Language.We have conducted some research on Python's strong sides and found out why you should option in for Python when bringing your Artificial Intelligence and projects to life.

- **A great library ecosystem** A great choice of libraries is one of the main reasons Python is the most popular programming language used for Artificial Intelligence. A library is a single or a group of modules published by different sources like PyPi which include a pre-written piece of code that allows users to reach some functionality or perform different actions.
- **Flexibility** Python for machine learning is a best choice, as this language is very flexible It way an option to choose either to use OOPs or scripting. There's also no need to recompile the source code, developers can implement any changes and quickly see the results**.**
- **Readability** Python is very easy to read Python developer can understand the code of their peers and change, copy or share it. There's no confusion, errors or conflicting paradigms, and this leads to more a efficient exchange of algorithms, ideas, and tools between Artificial Intelligence professionals. There are also tools like IPython which is an interactive shell that provides extra features like testing, debugging, tab-completion, and others, and facilitates the work process.**[6]**

5. Conclusion

Python play a main role in artificial intelligence program language by providing it with good frameworks like scikit-learn: machine learning in Python, which fulfills almost every need in this field and Data Driven Documents in Java Script(D3.js), which is one of the most powerful and easy-to-use tools for visualization. Different than frameworks, its fast prototyping makes it an important language not to be ignored. Artificial Intelligence needs a lot of research, and hence it is necessary not to require a 500 KB boilerplate code in Java to test a new hypothesis, which will never finish the project. In python, most every idea can be easily validated through 20-30 lines of code (same for JS with libs). Therefore, it is a pretty useful language for the sake of Artificial Intelligence. [7]

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Automatic Car Washing Using Microcontroller

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ABSTRACT: *Automation is a part of human life. Automation saves efforts, time and cost. Light motor vehicles (LMV) are widely used for daily transportation purpose. It is necessary to clean the vehicle easily and effectively. The system has three main processes, washing, cleaning and drying. Firstly the car washed with normal water and then detergent water is used. After that scrubbing and drying process carried out. The array of IR pair detects the car and starts particular section assembly. The car moves automatically form one section to another with the help of convener belt (rolling assembly).*

Keywords— *Automation, IR pair, Microcontroller*

1. INTRODUCTION

Automation is a part of human day to day life. Automation saves efforts, time and cost. Cars and Vans are post popular vehicles which are widely used for daily transportation purpose. It is necessary to clean the vehicle easily and effectively. There are various ways are available for car washing like manual car wash and chemical car wash [1]. Both car washing have some disadvantages. In manual car wash vehicle is washed own hand or we need to hire a employee to wash our car. In chemical car wash, chemicals are used to wash and polishing the car surface etc. In manual car washing more man power is require, also the space for car washing needs more. Also it needs large amount of water [2]. The manual car washing is also harmful to our body. On the other hand the chemical car washing affects the body and color of cars. So it is essential to find another way to perform the task. The solution of this is switching the manual process into the automation.

This project demonstrates the idea of automatic car washing using microcontroller. The microcontroller controls and operates all the activities using a program. The program can be easily updated as per need. The controller ON-OFFs the electromechanical relays to control particular electro-mechanical assembly like water spray, scrubbing, cleaning, and drying. During washing it is necessary to move forward the car. This can be done by the convener belt. Controller controls all these activities through programming.

2. TOOLS FOR DEVELOPMENT

2.1 SOFTWARE TOOLS

1. Keil IDE (Integrated Development Environment) runs on computer for microcontroller
2. Flash Magic for load the program to microcontroller
3. PCB maker to design the Printed Circuit Board

2.2 Hardware Tools

- Training and Testing kit of µC 8051
- Display, Alarm and Relays

3. SYSTEM DESIGN

3.1 Structure of the System

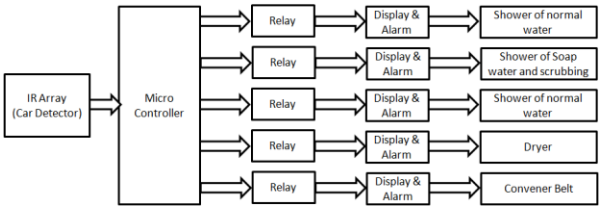

Figure 1: Block Diagram of Automatic Car Washing

Figure 2: Car Detection

Figure 3: Car Washing

Figure 4: Car Washing With Soap Water And Scrubbing

The system is based on hardware as well as on software also. The figure 1 shows the basic structure of the security system. The microcontroller contains the program for controlling the operation sequence.

When car enters on convener belt then array of IR detects the car as shown in figure 2 [3]. In IR invisible light is used. The IR source emits the light while IR detector detects that light. The electrical signal of detector is depends upon detector's resistance. The resistance of detector drops when it receives light. When car enters the light connection becomes break and the resistance of the detector increases. Similarly when there is no are present on the track then IR pair forms connections and the resistance of the IR detector again decreases. The electric signal from detector is used as input for microcontroller. In first section when car is detected, micro controller ONs the water sprinkler with the help of submersible pump to wet the car as shown in figure 3 [4]. A submersible pump is able to be placed inside the water and it is used to through water forcefully.

Similarly when car entered in to the second section next IR array detects the car and microcontroller stars the sprinkles of soap water. After that the microcontroller stars the DC motors and rotates the scrubbing assembly as shown in figure 4 [5]. The DC motor works over a small range of voltage. The motor has high torque to carry load. In any DC motor, torque and rotation per minute (RPM) are inversely proportional. So motor having high torque will provide a low RPM.

In third section, microcontroller ON the sprinkle of plane water to clear all the dart of car body. When the car reaches to the fourth section, microcontroller receives the car detection signal form IR array and ON the relay; which switch ON the fans. So car drying process is carried out (figure 5) [6].

During the entire process the microcontroller control the speed and timing of the convener belt with

the help of separate DC motor. The convener belt moves the car from one section to another section.

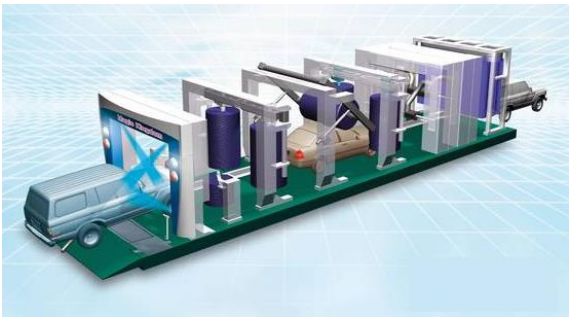

Figure 5: Automatic Car Washing

3.2 Pseudo code

Here the modules are given below gives idea of microcontroller operations.

```
// detect car in first section and on the plan water and waiting light
If (arrIR1 = = 1)
{
        convenerBelt = 0;
        relayWater = 1;
        rLight1 = 1;
        TimeDelay ();
        convenerBelt = 1;
}
// detect car in second section and on the soap water, scrubbing and waiting light
If (arrIR2 = = 1)
{       convenerBelt = 0;
        relaySoapWater = 1;
        rSLight1 = 1;
        TimeDelay ();
        relayScrubber = 1;
        TimeDelay ();
        convenerBelt = 1;
}// detect car in third section and on the plan water for washing and waiting light
If (arrIR3 = = 1)
{ convenerBelt = 0;
        ralayWater = 1;
        rLight1 = 1;
        TimeDelay ();
        convenerBelt = 1;
}// detect car in fourth section and on the fans for drying and waiting light
If (arrIR4 = = 1)
{       convenerBelt = 0;
        ralayFan = 1;
        rLight1 = 1;
        TimeDelay ();
        convenerBelt = 1;
}
```

CONCLUSION

Automation is the necessity in human day to day life. Embedded systems are reliable, efficient, economical and consume less power. It is user-friendly and also capable to wash multiple cars at a time. Also less man power is require.

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An Overview Study On Cyber Crimes In Internet

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ABSTRACT: ***Cyber crime is prominent as a grave danger. The Agencies Like as Worldwide governments, police departments and intelligence units have started to proceed on this. Initiatives to restrain cross border cyber threats are proceed to take shape. Indian police has started special cyber cells over the country and have initiated educating the employees. This paper is an endeavor to provide a glance on cyber offence in India. This paper is built on various reports from news media and news portal***

Keywords: *Cyber Crime, Hacking, Phishing, Stalking*

A. Introduction:

Cyber crime is a word used to widely describe criminal action in which computers or computer networks are a device, a aim, or a place of criminal activity and include everything from electronic furious to disagreement of service attacks. It is also used to include conventional crimes in which computers or networks are used to allow the prohibited activity. Computer crime mainly consists of unofficial access to computer systems data modification, data devastation, robbery of intellectual suitably. Cyber crime in the framework of national protection may involve activism, conventional intelligence, or information warfare and associated activities.

B. What Is Cybercrime?

Cyber crime is termed as a crime where a computer is the entity of the offense or is used as a device to place an crime. A cyber criminal may use a gadget to access a user's delicate information, secret business information, administration information, or immobilize a machine. It is also a cyber crime to sell or bring out the over information online.

C. Types Of Cyber Crime:

1. Cyber Stalking:

Cyber stalking is use of the Internet or other electronic way to track someone. This term is used interchangeably with online irritation and online misuse. Stalking usually involves troublesome or frightening manners that an entity engages in frequently, such as following a person, appearing at a person's home or place of business, making troublesome mobile phone calls, departure written messages or objects, or vandalizing a person's assets .Cyber stalking is a technologically-based "attack" on one person who has been embattled particularly for that attack for reasons of rage, payback or manage.

Cyber stalking can acquire a lot of forms, including:

- harassment, awkwardness and disgrace of the victim
- emptying bank accounts or other financial control such as ruining the victim's credit score
- harassing family, friends and employers to separate the victim

The term can also apply to a "traditional" stalker who uses skill to sketch and locate their victim and their activities more easily (e.g. using Facebook notifications to know what party they are presence). A correct cyber stalker's target is to harm their planned victim using the ambiguity and undetectable distance of knowledge. In many situations, the victims never find out the uniqueness of the cyber stalkers who harm them, regardless of their lives being entirely upended by the performer.

2. Hacking:

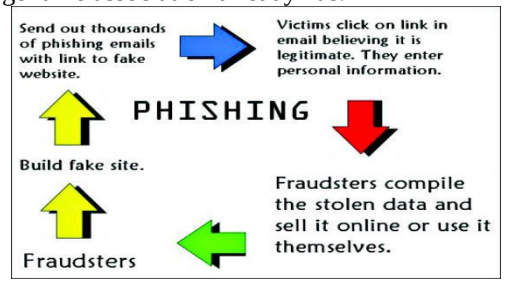
Hacking had witnessed a 37 % enlarge this year. A case of suspected hacking of certain web portals and obtaining the residential addresses from the e-mail financial records of urban inhabitants had freshly approach to glow . Crackers are citizens who try to gain unofficial right to use of computers. This is in general finished throughout the utilize of a 'backdoor' agenda installed on your device. A lot of crackers also try to get access to assets through the use of password cracking software, which tries billions of passwords to discover the exact one for

accessing a computer. Apparently, a good shield from this is to modify passwords frequently. In computer networking, hacking is any technical attempt to control the standard manners of network associations and linked systems. A hacker is any individual engaged in hacking . The term "hacking" previously referred to productive, intellectual technical work that was not essentially connected to computer systems. Today, however, hacking and hackers are most commonly related with spiteful encoding attacks on the Internet and other networks.

The term and concept of hacking was first popularized by M.I.T. engineers in the 1950's and 1960's. Later, outside of M.I.T., others began applying the term to less admirable pursuits. Before the Internet became trendy, for example, quite a lot of hackers in the U.S. experimented with methods to alter telephones for manufacture free long-distance calls over the phone network unlawfully. As computer networking and the Internet exploded in regard, data networks became by far the most ordinary aim of hackers and hacking.

3. Phishing:

Phishing is now one of the various frauds on the Internet, trying to trick public into leaving with their wealth. Phishing refers to the reception of unwanted emails by clients of economic institutions, requesting them to go through their username, password or additional individual information to admittance their account for some cause. Customers are directed to a fake model of the original institution's website when they click on the links on the email to enter their information, and so they remain uninformed that the fraud has occurred. The impostor then has access to the customer's online bank account and to the funds enclosed in that account. Phishing is the act of transfer an e-mail to a user falsely claiming to be an recognized lawful endeavor in an try to cheat the user into granting secret information that will be used for uniqueness stealing. The e-mail directs the user to visit a Web site where they are asked to modernize individual information, such as passwords and credit card, social security, and bank account records, that the genuine association already has.



For example, 2003 saw the explosion of a phishing scam in which users received e-mails apparently from eBay claiming that the user's account was about to be hanging unless he clicked on the provided link and updated the credit card information that the real eBay already had. Because it is comparatively simple to make a Web site look like a legal organizations site by mimicking the HTML code, the scam counted on people being tricked into thoughts they were really being contacted by eBay and were afterward going to eBay's website to update their account information. By spamming huge groups of public, the "phisher" counted on the e-mail being read by a percentage of people who actually had scheduled credit card figures with eBay legally.

Phishing is an e-mail fraud method in which the perpetrator sends out genuine-looking email in an endeavor to collect delicate and economic information from recipients. Typically, the communication appears to come from well known and reliable Web sites.Web sites that are often spoofed by phishers include PayPal, eBay, MSN, Yahoo, BestBuy, and America Online. A phishing journey, like the fishing expedition it's named for, is a tentative venture: the phisher puts the entice hoping to fool at least a few of the quarry that meet the temptation. Phishers use a number of diverse social trade and e-mail spoofing ploys to attempt to trap their victims.

4. Cross Site Scripting:

Cross-site scripting (XSS) is a kind of computer safety susceptibility classically establish in web applications which permit code inoculation by spiteful web users into the web pages viewed by extra users. Examples of such convention consist of HTML code and client-side scripts. An broken cross-site scripting susceptibility can be used by attackers to go around admittance controls. Cross-Site Scripting attacks are a category of inoculation trouble, in which hateful scripts are injected into the otherwise begin and trusted web sites. Cross-site scripting (XSS) attacks take place when an attacker uses a web application to throw spiteful code, usually in the structure of a browser side script, to a unlike end user. Flaws that permit these attacks to achieve something are fairly extensive and happen wherever a web application uses input from a user in the production it generates with no validating or programming it. An aggressor can use XSS to send a hateful script to an unsuspicious user. The end user's browser has no method to know that the script should not be trusted, and will perform the script. Because it thinks the script came from a trusted basis, the spiteful script can right to use any cookies, session tokens, or other

responsive information retained by your browser and used with that site. These scripts can even redraft the content of the HTML sheet.

How To Protect Yourself Against Cyber Crime:

Anyone with the internet must implement some basic safety measures. Here are some tips you can use to assist yourself against the variety of cyber crimes out there.

1. Use Strong Passwords:

Don't replicate your passwords on diverse web sites, and modify your passwords frequently. Make them composite. That means using a grouping of at least 10 letters, figures, and symbols. A password management application can aid you to remain your passwords safe down.

2. Keep Your Software Updated:

This is particularly significant with your operating systems and internet safety software. Cyber criminals often use recognized exploits, or flaws, in your software to get right of entry to your system. Patching those exploits and flaws can build it less possible that you'll happen to a cyber crime target.

3. Strengthen Your Home Network:

It's a good idea to start with a strong encryption secret word as well as a implicit confidential network. A VPN will encrypt all traffic departure your devices awaiting it arrives at its target. If cyber criminals do manage to hack your message row, they won't interrupt nothing but encrypted data. It's a fine thought to utilize a VPN whenever you are using free Wi-Fi network, whether it's in a library, cafe, hotel, or airport.

4. Know What To Do If You Become a Victim:

If you think that you've become a sufferer of a cyber crime, you require to aware the local police and, in some cases the FBI and the Federal Trade Commission. This is vital still if the offense seems negligible. Your statement may help authorities in their investigations or might assist to catch the criminals from taking advantage of other people in the future. If you consider cyber criminals have stolen your uniqueness. These are among the steps you should consider.

- Contact the companies and banks where you know scam occurred.
- Place scam alerts and get your praise reports.
- Report identity robbery to the FTC.

Conclusion:

Net surfing by youth lures them into hazardous domain. The require for a aware attempt to checkmate the objectionable argue of youngsters accessing and using the Internet is of worry. The print media has a responsibility to instruct innocent parents and youth about the dangers inbuilt in treading hazardous areas in the cyber-world. Cyber Space safety organization has already become an significant module of nationwide Security Management, and Intelligence Management all over the world. Future intrusions frightening our national security may not essentially come from crosswise the land border, or in air room or across marine waters, but happen in cyberspace. It is a well-recognized truth that terrorists have been using the Internet to talk, extract, threaten, lift funds and organize operations. The degree of our attentiveness in the face of all these possible fear does leave much to be preferred.

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APP STORE EFFECT ON SOFTWARE ENGINEERING

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ABSTRACT: This paper is the study of app store as a phenomenon from the designers' viewpoint to explore the extent to which app stores affect software engineering jobs. Completedesignerdiscussions and surveys, we uncover judgments that focus and calculate the effects of three high-level app store themes: bridging the gap between developers and users, increasing market transparency and affecting mobile release management. Our discoveries have suggestions for testing, necessities engineering and mining software repositories research fields. These findings can help guide future research in supporting mobile app creators through a deeper understanding of the app store-developer interaction.

KEYWORDS: Introduction, Methodology, Lifecycle Process, Study Desigin,

I.INTRODUCTION

An app store is a type of digital distribution platform for computer software called application often in mobile context, where you can get a huge number of various applications through iPod Touch, iPhone and iPad. The applications include multitude of categories and also such popular apps as Skype, Facebook, Twitter, PayPal, MySpace, The New York Times and so on. That is the best place to get in touch with the latest forthcoming products of Apple and to know about the functionalities and features of products before you buy it. App Store has a unique architectural design[6].

There has been a lot modern progress in Software Engineering for App Stores using techniques that havedrawn on many areas of software engineering researchincluding, for example, software testing, software storage areamining and software requirements elicitation .In this study, we question and survey app developers,regarding their interactions with app stores. Our aim isto better understand developers' practices when makingapps. This understanding will help us determine the extentto which information from app stores affects developers' decision making and observe how the app store ecosysteminfluences engineering tasks during the app's developmentprocess. Moreover, our findings may guide future softwareengineering research in app development ,maintenance andevolution.

Fig : Appstore iphone Apple

App Store can be accessed via your phone or through iTunes on the computer. The features the store includes are screenshots, user reviews, a facile browsing through different categories and an appropriate search engine. It notifies of any updates to your installed apps on your iPod, iPhone or iPad, with the option "Update All" which allows taking the drudgery out of downloads.One of the attractive properties of app stores is the wayin which these stores cut across different software engineering concerns, raising inter-related questions and researchproblems for different software engineering activities [12].

The success of app stores has coincided with the mass consumer acceptance of smartphone devices. Smartphones existed before to the launch of these stores, but it was not until 2008 that users could truly make use of their extra computing power and resulting versatility through downloadable apps. In-house and even business applications had been available before the launch of app stores.

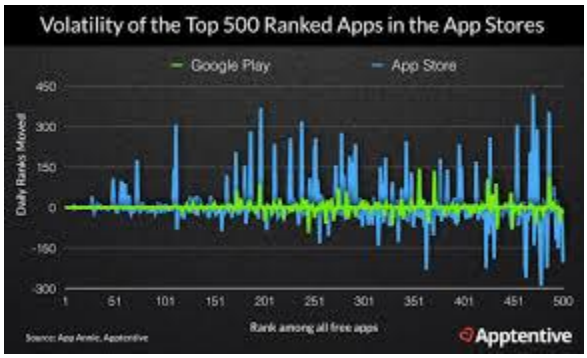


Fig:Volatility Of The Top 500 Ranked Apps In The App Stores

Our paper reports a survey of app designers' soft-ware engineering follows through an interview and questionnaire approach, permitting us to highlight open is-sues and challenges for the growing App Store Software Engineering community with a focus on relationships betweenapp stores and software business research in several research areas including requirements, testing and software repository mining.

Our methodology combines an empirical study technique with a thematic analysis method [1] [2],which is commonly used in behavioural sciences to analyse qualitative data [3] [4].

II.METHODOLOGY

To study designers' practices when developing for mobile app stores, we followed a mixed method drawing fromsurvey and case study observed research methodologies[8].There are two reasons supporting this choice of methodology. Firstly, case study research is a way of analyzing contemporary phenomena that are difficult to separate from their natural context [9], which is the case for app stores. However, as this is a globalphenomena affecting the majority of the population , it is not strictly a case study, so we also followed a survey technique to collect data from a sample of the affected population using two data collection methods (namely, interviews and questionnaires).

This particular research will aim to be both an exploratory qualitative empirical study as well as a descriptive one [11] [10].

III.LIFECYCLE PROCESSES

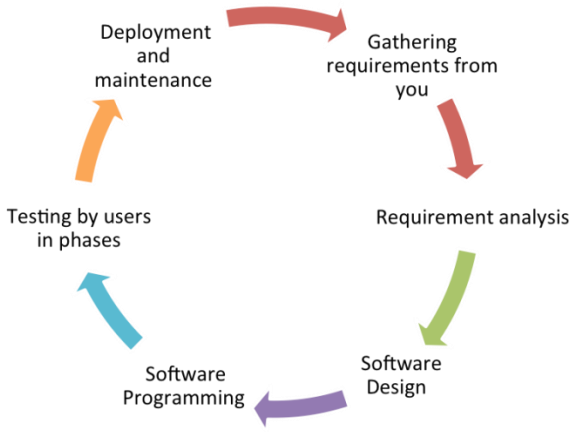


Fig:Lifecycle Process

App stores, as they reach an almost-monopolization of mobile app distribution with regards to a particular operating system, are prone to introduce some changes to how developers carry out software engineering tasks. Forexample, we anticipate, due to the app store regulation, for it to change the way developers plan releases. Additionally, as app stores provide a rich environment in which users leave feedback, including reporting bugs and requesting features, for it to affect developers' requirements elicitation activities.

Requirements Elicitation:Tocreators, not only can the app store serve as a distribution channel, it is also a large warehouse of apps. Inthis warehouse, access to similar and competing apps have never been easier. Not only can developers see how areother apps presented, but users' reaction to them. By selectingthrough user comments, they can identify common bugs, appreciated features, requests and

usage scenarios of app iniquity an application domain of interest.

Testing: App stores offer developers with a rich channel to conduct prerelease testing. Additionally, the rating and comment/review sections can give developers much to process. In this section we analyze developer responses regardingintent when pre-releasing the app in the store. When a sample of 171 developers were asked if they indeed release alpha and/or beta versions to the app store, 59%answered yes. Among those who answered yes, we further inspected what they hope to reveal by pre-releasing the app.

Maintenance: When the app is published in the app store, developers come to maximum contact with users. The ratings, reviewsand recommendations start coming in. We examine the extent to which developers integrate user input from theapp store into their maintenance strategy.During the interview process, we have detected thatdevelopers look user reviews posted in app stores as a bug reporting and feedback collection tool in addition to a marketing tool. Several developers informed us that having a healthy proportion of negative feedback is an important nudge in the right direction "[Positive Feedback]doesn't really help me. It should contain some information to help me improve the app, either something is wrong, something is missing, something they want," one developer expressed. Dueto the quick iterations typical of mobile apps release plans, one developer informs us that "those bad reviews is what makes a really successful product." To some developers, the app store is just another bug reporting and user engagement channel,although a productive, public one.

IV.STUDY DESIGIN

As both experiential research and thematic analysis studies trust on proper identification of research questions, the first stage is setting the questions to be emphasized and answered. Phase two is devoted to the exploration and preliminary gathering of information. This is done by interviewing app developers and discussing their views and current practices. During this phase the interview structure is designed with a set of potential topics and questions to be discovered in light of the research questions; then the transcripts of the interviews are analysed and coded using logical thematic analysis resulting in a theme map. The third phase consists of collecting data by distributing a questionnaire to communities of interest.

Interviews: Interviews were conducted to initially explore developers' interaction with app stores before and after release. The interview protocol is described in the upcoming sectionfollowed by a description of the participating sample anddata analysis method.

- **Protocol:**The interviews were semi-structured and followed a funnelmodel where questions are generic at the beginning and become more specific as the interview progresses. The funnelapproach was selected to permit the conversation to flownaturally instead of controlled question-answer cycles. Thisallows the interviewees to be put at ease thus talking freely about what they deem important and pertinent with regards to the general topic. Then, taken from the current topic of conversation, the interviewer refocuses the conversation to a more precise subject of interest. This method suited the exploratory and observational goals we required of the interviewing process.The interview questions were brainstormed and meantto be near-exhaustive in nature. They, we believe, cover most aspects of contact between developers and app stores. All interviews were conducted by one of the authors except for one which was attended by a second interviewer.The interview plan contained 40 questions that the interviewer, ideally, sought to cover. Since the interviews were semi-structured,this plan served only as a reference for the interviewer andwas not enforced. The plan highlighted some of these questions as suggested conversation starters within broad topics.Using this way of conducting the interview, interviews typically flowed smoothly and the developer answered mostquestions without interrupting the flow of the conversation.

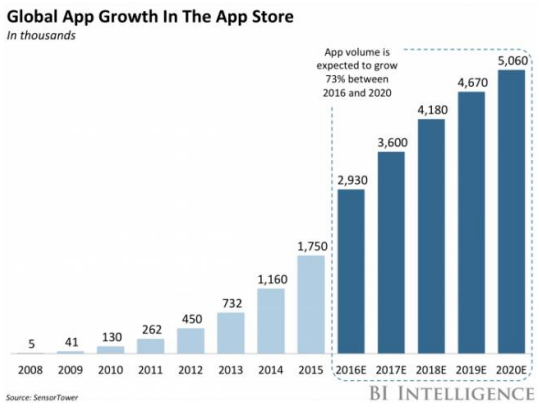
- **Participants:**The selection of interview participants relied on purposive sampling where participants had to be individuals involved in the production of an app in the app store. In selecting participants, we sought a broad set of sources for opinion with regards to team roles including developers, managerand app owners. Since this is an exploratory step, we are notaiming to make any generalizable discoveries and, therefore, relied on convenience recruitment1 of participants.We have interviewed a total of 10 app development team members. The interviewees were recruited through UCL Advances2and via social contacts. From there, a snowballing recruitment technique was carried out in which thedeveloper was asked to recommend other colleagues and connections for the interview.Table 2 reports the interviewed sample along with theirrespective experience demographics. Among the 10 interviewees, 7 had formal education in an engineering/computerscience related field. Fields that are outside of the faculty ofengineering

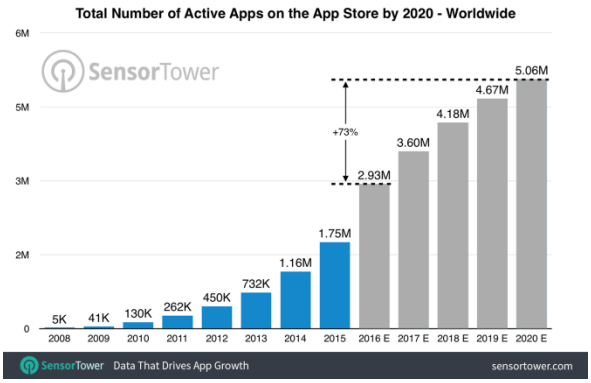
were dubbed non-technical. The team sizes ofparticipants were between 1 and 17 developers. The interviewed sample had between 4 and 27 years of experiencein software development. The number of apps they havedeveloped spans from one app to 20 apps. The degree of exposure of the sample's apps also ranges between apps that have been downloaded 100 times to apps downloaded800,000 times.

- **Data Analysis**:After transcribing recorded interviews, data analysis was carried out to identify emerging concepts from the corpus.This was conducted using Thematic Analysis [4]. Thematic analysis, as the name suggests, employs the conceptof themes when analysing textual data. Thematic analysisrequires reading the scripts intensively before coding the responses in light of the research questions.

Questionnaire: Based on the emergent topics of interest extracted fromanalysing the interviews and in light of theresearch questions, a questionnaire was used to ascertain findings, explore new ideas and measure the prevalenceof some practices.

Following Figure Shows Global App Growth &Total No. Of Active Apps In App Store





V.CONCLUSIONS

This study investigated aspects of app store developers' software engineering activities illuminating overarchingthemes of importance to app store software development.

App stores demonstrate market transparency in which app description, features, price, rating and user feedback are public. Our survey found that developers do, indeed, refer to similar apps when designing their own. Our results reveal that developers are interested in monitoring similar apps for maintenance and evolution. We also found that other apps' user feedback, rating and screenshots and are the three most important aspects of information gleaned from the open market by developers. Our results highlight the way in which app stores have become a communicationchannel between users and developers. Our findings confirm that developers seldom neglect user feedback postedon app stores; user feedback was the third strongly agreedon source of app improvement after the initial strategy on the app and monitoring similar apps on the app store. Oursurvey respondents also rated user reviews as the secondmost creative channel of bug reporting after automatic inapp crash reports but regardless was scored highest in prioritisation.User feedback, in addition to being informativeto developers, also determines the overall rating of theapp.These findings have actionable conclusions for software engineering practitionerand researchers, including requirements engineering, testing and mining software repositories research communities,and also business communities.

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CLOUD COMPUTING IN EDUCATION MANAGEMENT

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ABSTRACT: ***Cloud computing is becoming increasingly fashionable in thin computing environment. Processing and Data storage use cloud environment is becoming a effort complete. Software as a Service (SaaS) has on many business applications as well as in our day to day life, we can simply say that this disrupting technology. Cloud computing can be understood since Internet-based computing, in which shared resources, software, and information are made available to devices on demand. It allows resources towards leveraged on per-use basis. It contracts cost and complexity of service providers by means of assets and operating costs. It allows users to access applications weakly. On behalf of user, this construct leads cloud service provider to feel software updates and cost of servers etc. For , cloud providers and consumers; availability, integrity, authenticity, confidentiality, and privacy are important concern.***

Keywords: *Introduction, Review of Cloud Service Models, Cloud Deployment Models,*
Cloud Deployment Models, Advantages of Cloud Computing In Education.

I.INTRODUCTION

The cloud computing has many reward with some limitations, both arise from the fact that all data and applications are located on the Internet. Since the data stored and applications on cloud can be access genuine time and online. It can be used in a variety of activities of daily life, including in education. Cloud computing is a model for enable appropriate, on-demand network contact to the shared pool of resources (e.g.servers, storage, applications and services), which can be quickly provisioned and at large with minimal administration efforts. As per the cloud model modified and the habit of it are the basis for declarable saleable value. For proper and casual education, many applications and services on the cloud the contact can be provided to students and teachers. The cloud computing allows for superior elasticity and mobility in the use of resources for teaching and learning with greater degree of association, statement and division of resources. It also creates a modified learning environment or virtual communities of teaching and learning.

II.REVIEW OF CLOUD SERVICE MODELS

The cloud computing has major deployment models such as Private, Public and Hybrid, but has a unlike features such as Client-Server Model, Grid Computing, Fog Computing, peer-to-peer computing. All the cloud placement models offer different services such as Infrastucture as a service (IaaS), Platform as a service (PaaS) and Software as a service (SaaS) .

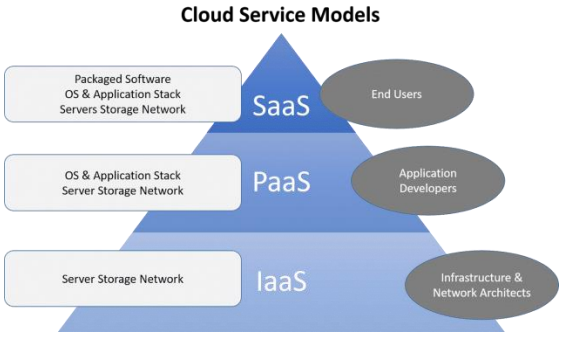


Figure 1: Cloud Service Models

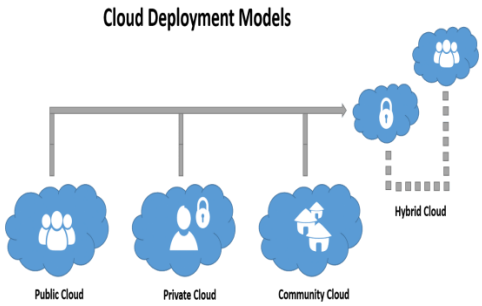
Infrasturcture as a Service (IaaS): In this cloud service model the service worker hosts all the required required hardware and the Internet connectivity link. The user only share control for the virtual machine hosted on this hardware and the software's (include operating system) which goes on it. As shown in figure 1, this is the last / bottom layer and the software applications run on it. This service

provides on demand Organization which is storage, computing, networking, management and support components (virtual servers). This organization is accessed via Internet, enabling groups' to move their data to cloud. Causing in to run or undoing there in house data centers. Each of these services can be deployed by organizations or individuals either as a private, public, mixture and community cloud.

Platform as a Service (PaaS): In this cloud service model the user provisions the application they wish to place, and the cloud service provider supplies all the modules required to run this application which is also called as application hosting. As shown in the figure 1, this is the mid layer between SaaS and IaaS. It provides operating systems and application development platform which can be retrieved and misused via the Internet. Developers use this platform to develop, test, deploy and host web applications as a service via the internet. E.g. providers of such platforms as a service are Google Application Engine, Microsoft Windows Azure and International Business Machine (IBM).

Software as a Service (SaaS): In this cloud service model the service provider provisions the software application and all the modules required for its execution. SaaS is planned to be a turnkey solution for the customers. Many web-ERP software solutions are hosted on the SaaS cloud and provide accounting and business Information to the user or customer. As shown in the figure 1, this is the top-most layer of cloud computing. This layer includes applications such as text processors, video editors and databases to be hosted by cloud service provider and is made gladly accessible to the users on request via Internet. Few examples of software as a service contain customer relation management (CRM), email messaging, Google Document (Doc) etc.

III.CLOUD DEPLOYMENT MODELS



Cloud computing deployment models built on position. In order to know which deploym model would best constant your association reque it is necessary to know the four deployment types.

Public Cloud: Public Cloud is a type of hosting wh cloud services are sent over a network for public us

- Customers does not need any control over the location of the infrastructure.
- The cost is mutual by all users, and is also free or in the form of a permit policy like pay per user.
- Public clouds are excessive for groups that require handling the host application and the numerous applications users use.

Private Cloud: Private Cloud is a cloud infrastructure that is only used by one group.

- It gives organizations greater control over security and data which is safeguarded by a firewall and managed internally.
- It can be hosted inside or outside.
- Private clouds are great for groups that have high security demands, high management demands and uptime requests.

Community Cloud: Community Cloud **is** an infrastructure that is equally shared between groups that belong to a specific community.

- The community members usually share parallel privacy, performance and security concerns.
- An sample of this is a community cloud at banks, government in a country, or trading concerns.
- A community cloud can be managed and hosted inside or by a third party provider.
- A community cloud is good for groups that work on joint projects that need centralized cloud computing skill for managing, building and executing their projects.

Hybrid Cloud : Hybrid Cloud uses both private and public clouds, but can continue separate entities.

- Properties are managed and can be provided both inside and by outside providers.
- A hybrid cloud is great for scalability, flexibility and security.
- An example of this is an group can use public cloud to relate with customers, while protection their data secured through a private cloud.

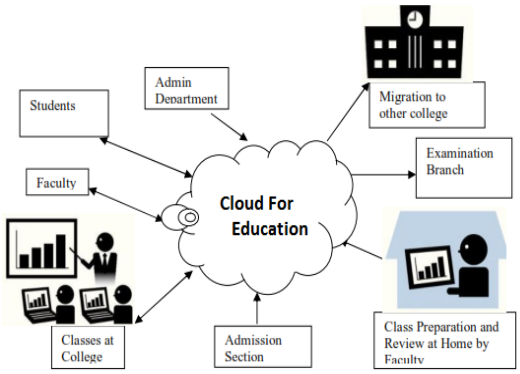
IV.CLOUD FOR EDUCATION

Diminished Costs: Cloud-based managements can help institutes reduction costs and accelerate the use of new inventions to meet developing educational needs. Students can utilize office applications without acquiring, install and stay up with the latest on their PCs. It similarly gives the instructors of Pay per use for rare applications.

Easy Access: Lesson displays labs, grades, notes, and PowerPoint slides – attractive much anything high-tech that you use in training is effectively transferred.

Security: Your information, content, data, pictures – whatever you store in the cloud usually requires verification (ID and secret word, for instance) – so it is not successfully available for anybody**.**

Shareability: Cloud computing unlocks up a universe of new believable results for students, particularly the individuals who are not attended well by customary training frameworks. With cloud computing, one can spread more and more varied, students.



Services attached to Education Cloud

No costly programming required: One of the highest main points of cloud-based registering is the software-as-an-Service (SaaS) model. Many product projects are presently accessible either free or on an comfort membership premise, which extensively transports down the expense of key applications for students.

Practice environmental safety: Education cloud will certainly reduce the carbon impression.

Easy Update: Roll out developments to a lesson and need to change it back? Don't worry about it. Cloud computing will extra various corrections and variants of a record with the aim that you can sequentially follow back the development of a thing.

In these and different ways, cloud computing is lessening costs, as well as making a situation where all students can have permission to incredible instruction and assets. Whether you are a chairman, an guide, a student, or the guardian of a student, now is an incredible time to inspect how cloud-based applications can advantage you, your youths, and your school.

V.ADVANTAGES OF CLOUD COMPUTING IN EDUCATION

With an array of productions around, the world knows the power of cloud based applications. Not only they reduce the need for substructure, but also significantly reduce IT costs while attractive availability and chances for establishing transparent and effective collaborations. The Cloud has existing important possible in changing how education as an industry works from with the perception of offering online programs so as to modify the customary working ecosystem.

Here are a few unexpected ways by which cloud applications is manipulating today's education system:

1. Students Save On Expensive Textbooks: It is a known fact that university level textbooks are fairly expensive. Textbooks have surprisingly beat the cost of exactly every other element involved in university level education including tuition fees. This results in students preventing from ordering them. Cloud-based textbooks are an actual solution to this problem. Digital content tends to be lot less costly thus; allowing lower-income students to get access to the same quality of learning material as other students.

2. **Learning Material Needn't Be Outdate:**As an extension to the earlier point, expensive textbooks require students to depend on older, second hand editions that consist of invalid material. Studies showed that an typical social studies textbook in junior high schools are as much as 11 years old. In such cases, rather as basic as world maps are not correct. Cloud-based material makes it easy to update content real-time hence, allowing students to gain constant access to the latest learning resources.

3. **No Need For Expensive Hardware**

Ever since cloud-based applications run on web browsers and are friendly among mobile devices, schools and students need not have explicit computers or laptops to access material. Even an economical smart phone can permit you to access related educational applications. Furthermore, there is no need to provide in outer storage devices since there are few platforms available that offers complimentary cloud-based storage services.

4. **No Need For Expensive Software**

Considered to be one of the biggest advantages of cloud-based computing is the expansion of the Software-as-a-Service (SaaS) model. It is common for software programs to now exist either free or at an economical subscription so, making it easy for students to use high quality academic applications without breaking the bank.

5. **Success Out To A Various Range Of Students**

Cloud based applications in education opens newer opportunities deliberate for students. Particularly for those class of students who weren't served well by conventional approaches. Since education has moved online, it has become progressively possible for grown-up students to finish their high-school education. Another forms of education are these days becoming easily available so, making it easy for those to receive specific training in areas that may progress their employability.

6. No Need to Carry Around Devices

Students and professors needn't concern about carrying around devices such as thumb drives and CDs. With no concern of losing important data due to loss of device, breaking of CDs or not having the

information not loaded properly, students can enjoy access to educational information anytime, anywhere.

7. Easy Access

This brings us toward the next point. With the whole thing from lesson plans, grades, notes, slides, labs, etc. can be made available on cloud applications, every one of the tools that are used in teaching can be easily uploaded and accessed anytime by the students and professors.

8. Data Security

Even in the world of education, your data, images, information and content needs to be stored in a safe manner. Most cloud-based mobile applications offer strong verification facilities for making sure that the educational material is made presented only to the right people. additionally, if various modifications occur to the IT infrastructure at the university, the substance will still be presented to professors and to the students as well.

Finally, cloud-based mobile applications in education make it easy for students to divide their assignments with teachers in an easy and trackable manner. Cloud facilitates easy collaborations, allowing student groups to work on projects and assignments on cloud in an efficient manner.

VI.CONCLUSION

The cloud computing is a quickly developing Internet-based computing model. With the mixture of e-learning using cloud computing and management education, unlocks up new ideas for further development. This paper we have discussed a cloud computing based eLearning, benefits & issues. There is no distrust that the introduction of cloud computing into management education is viable & carries us the approximately infinite computing capability, scalability, benefits to the students. The paper also highpoints the usage of cloud is not tolerable in the degree level colleges, which needs to be better.53% of the institutions provide eBooks, which is an advantage for students and changeless environment. The 92% of the institutions uses old-style class room teaching method and also used video conference for lecture supply. 73% of the institute officials are completely alert of Internet and cloud computing technologies. 70% of the reacting institutes have college website, but do not have any mechanism for study material or content transfer. 100% of the responding institutes use email for association with managers, students and other stake holders. 40% of the replying institutes trust that cloud computing will play main role in the organization for cooperation. From security aspect 60% of the responding institutes believe that cloud is rather insecure. 45% of the responding institutes trust that staff inspiration will affect their cloud acceptance for management education. Popular of the responding institutes believe that security, privacy, reliability, hacking, theft, attacks would be the main factor which will affect total cloud acceptance.

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- Sandeep Kelkar (Assistant Professor – IT)
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THE EVOLUTION OF ROBOTICS RESEARCH

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ABSTRACT: ***In this article the progress of robotics research is shown in the last half century as a response to the evolution of human social needs, from the industrial robotics that released the human operator from risky tasks to the recent burst of field and service robotics to assist the human. Robotics contracts with the design, construction, operation, and use of robots, as well as computer systems for their control and information processing. These technologies are used to develop machines that can substitute for humans and replicate human actions. The new ideas in robotics research have been designate service robotics because of their goal of getting robots closer to human and this article surveys research on facility robotics such as medical robotics, rehabilitation robotics, underwater robotics, field robotics, construction robotics and humanoid robotics. The goal of this article is to provide an overview of the evolution of research topics in robotics from classical motion control for industrial robots to modern intelligent control techniques and social learning paradigms, among other aspect***s.

KEYWORDS:*Industrial robots, Robot manipulator, medical robots, mobile robots, Robot localization Underwater robot, walking robot.*

I.INTRODUCTION:

In the previous 45 years, robotics research has been designed for finding solutions to the technical necessities of applied robotics. The evolution of application fields and their sophistication have influenced research topics in the robotics community. This evolution has been dominated by human necessities. In 1960s, the industrial revolution lay industrial robots in the factory to release the human operator from risky and harmful tasks. This article is meant at surveying the evolution of robotics and tracing out the most representative lines of research that are strongly related to real-world robotics applications. Consequently, many research topics have been omitted for one main reason: The authors' goal of tracking the evolution of research would not have been met by presenting a catalog of each research topic in such a broad area. Therefore these authors apologize to those authors whose research topic has not been reflected in this survey. The intention is not to imply that omitted topics are less relevant, but merely that they are less broadly applied in thereal robotics world. This item addresses the evolution of robotics research in three different areas: robot manipulators, mobile robots, and biologically inspired robots. Although these three areas share some research topics, they vary significantly in most research topics and in their application fields. For this reason,they have been treated separately in this survey. The branch on robot manipulators includes research on industrial robots, medical robots and rehabilitation robots, and briefly surveys other service applications such as refueling, picking and palletizing. When surveying the research in mobile robots we consider terrestrial and underwater vehicles. Aerial vehicles are less widespread and for this reason have not been considered. Robots include mainly walking robots and humanoid robots; however, some other geographically stimulated underwater systems are briefly mentioned. In malice of the differences between robot manipulators, mobile robots and biologically inspired robots, the three research areas congregate in their current and future intended use: field and service robotics. With the innovation of the First World, new services are being demanded that are shifting how we think of robots from the industrial viewpoint to the social and personal viewpoint. Society demands new robots designed to aid and dish up the human being, and this harks back to the first origins of the concept of the robot, as transmitted by science literature since the early 1920s: the robot as a human servant . Also, the conception of new needs

and markets outside the traditional market of manufacturing robotics leads to a new notion of robot. A new region is therefore arising from robotics, a sector with a great future giving service to the human being. Traditional industrial robots and mobile robots are being modified to address this new market. Research has evolved to find solutions to the technical necessities of each stage in the development of service robots. Figure shows envisioning the future of robot(Figure 1).

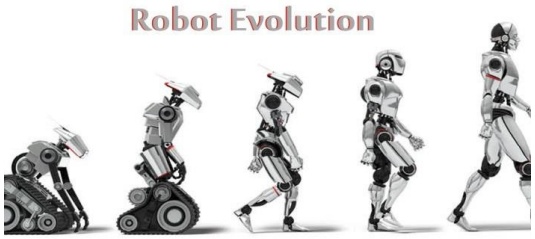

Figure 1:Envisioning the future of robot

II.INDUSTRIAL ROBOTS:

Approximately in 1960 when industrial robots were first introduced in the production process, and until the 1990s industrial robots conquered robotics research. When it is established, the automotive industry dictated the specifications industrial robots had to meet, mainly due to the industry's market clout and clear technical necessities. These necessities determined which areas of investigation were predominant during that period.

One such area was kinematic calibration, which is a necessary process due to the inaccuracy of kinematic models based on manufacturing parameters. The calibration process is carried out in four stages. The first stage is mathematical modeling, where the Denavit-Hartenberg (DH) method and the product-of-exponential (POE) formulation lead the large family of methods. A detailed discussion of the fundamentals of kinematic modeling can be found in the literature [1]. The space between the theoretical model and the real model is found in the second stage by direct measurement through sensors. Thus, the accurate position of the robot's end effector is determined, and by means of optimization techniques, the parameters that vary from their nominal values are identified in the third stage. Last realization in the robot is the process of incorporating the improved kinematic model. This process will depend on the complexity of the machine, and iterative methods will have to be employed in the most complex cases. Cram in robot calibration remains an open issue, and new methods that reduce the computational complexity of the calibration process are still being proposed [2], [3].One more important research topic is motion planning, wherein sub goals are calculated to control the completion of the robot's task. couched methods specify the desired dynamic behavior of the robot. One couched scheme that is attractive from the computational point of view is the potential field algorithm [4]. One disadvantage of this approach is that local minima of the potential field function can trap the robot far from its goal. Explicit methods provide the trajectory of the robot between the initial and final goal.

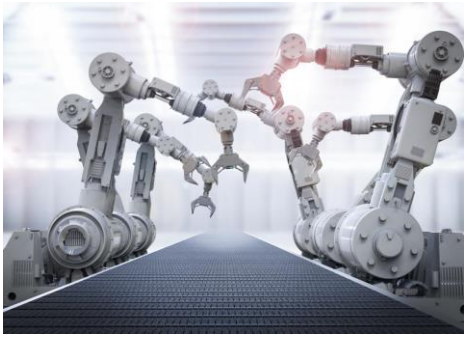

Figure 2:Arm of an Industrial Robot

Discrete explicit methods focus on finding discrete collision-free configurations between the start and goal configurations. These methods consist mainly of two classes of algorithms, the family of road-map methods that include the visibility graph, the Voronoi diagram, the free-way method and the Roadmap algorithm [5], and the cell-decomposition methods [6]. Continuous categorical methods, on the other hand,consist in basically open-loop control laws. One important family of methods is based on optimal-control strategies [7],whose main disadvantages are their computational cost and dependence on the accuracy of the robot's dynamic model.Besides planning robot motion, control laws that assure the performance of the plan are required in order to accomplish the robot's task. Thus, one fundamental research topic focuses on mechanism techniques. A robot manipulator is a nonlinear, multi-variable system and a wide spectrum of control techniques can be experimented here, ranging from the simpler proportional derivative (PD) and proportional integral derivative (PID) control to the computed-torque method [8], and the more sophisticated adaptive control [9] whose details are out of the scope of this survey. Typical industrial robots are designed to manipulate objects and interact with their setting, mainly during tasks such as polishing, milling, assembling, etc. In the control of the interaction between manipulator and environment, the contact force at the manipulator's end effector is regulated. There are diverse schemes of active force control, such as stiffness mechanism, compliant mechanism, impedance control, explicit force mechanism and hybrid force/position control. The first three schemes belong to the category of indirect force control, which

achieves force mechanism via motion mechanism, while the last two methods perform direct force control by means of explicit closure of the force-feedback loop. Readers who wish to study this subject in detail will find an interesting account in [10].
An attractive alternative for implementing force-control laws is the use of passive mechanical devices so that the trajectory of the robot is modified by interaction forces due to the robot's own accommodation. An important example of passive force control is the remote center of compliance (RCC) system patented by Watson in 1978 [11] for peg-in-hole assembly. Passive force control is simpler than active force control but has differences, such as lacking flexibility and being unable to avoid the appearance of high contact forces.

III.ROBOT MANIPULATOR:

A robot manipulator, also known as a robot arm, is a serial chain of rigid limbs designed to perform a task with its endeffector.Early designs concentrated on industrial manipulators, to perform tasks such as welding, painting, and palletizing. The evolution of the technical necessities of society and the technological advances achieved have helped thestrong growth of new applications in recent years, such as surgery assistance, rehabilitation, automatic refueling, etc. This section surveys those areas that have received a special, concentrated research effort, namely, industrial robots, medical robots, and rehabilitation robots.

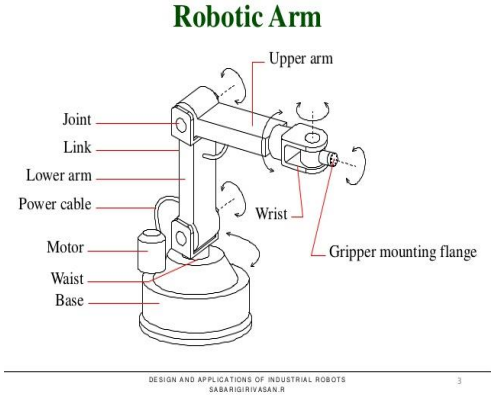

Figure 3:Robot manipulator

IV.MEDICAL ROBOTS:

In recent years, the field of medicine has been also invaded by robots, not to replace qualified personnel such as doctors and nurses, but to assist them in routine work and precision tasks. Medical robotics is a likely field that really took off in the 1990s. Since then, a wide multiplicity of medical applications have emerged: research laboratory robots, telesurgery, surgical training, remote surgery, telemedicine and teleconsultation,rehabilitation, help for the deaf and the blind, and hospital robots. Medical robots assist in tasks on heart-attack victims and make possible the millimeter-fine adjustment of prostheses. There are, however, many experiments in the general execution of robotics in the medical field, mainly due to issues such as protection, precision, cost and reluctance to accept this technology.Medical robots may be top secret in many ways: by exploiter scheme (e.g., kinematics,actuation); by level of autonomy(e.g., preprogrammed versus teleoperation versus constrained cooperative control); by directed anatomy or technique (e.g., cardiac,intravascular,percutaneous, laparoscopic, micro-surgical);by intended operating environment [e.g., in-scanner,conventional operating room (OR)], etc. Research remains open in the field of accurate robotics, where extensive effort has been invested and results are impressive. Some of the key technical barriers include safety [12], where some of the basic principles at issue are redundancy, avoiding unnecessary speed or power in actuators, rigorous design analysis and multiple emergency stop and checkpoint/restart facilities. Medical human-machine interfaces are another key issue that draws upon essentially the same technologies as other application domains.Medical doctor rely on vision as their principal source of feedback; however, due to the limited resolution of currentgeneration video cameras, there is interest in optical overlay methods, in which graphic information is superimposed on the surgeon's field of view to improve the information provided[13]. As medical doctor frequently have their hands busy, there has been also interest in using voice as an interface. Force and haptic feedback is another great interface for telesurgery applications [14]. Much of the past and present work on telesurgery involves the use of master-slave manipulator systems [15], [16]. These systems have the ability to feed forces back to the medical doctor through the master manipulator, although slaves' limitations in sensing tool-to-tissue forces can somewhat reduce this ability.The field of medical robotics is expanding quickly and results are impressive as a large number of commercial devices are being used in hospitals. However, societal barriers have to be overcome and significant engineering research effort is required before medical robots have widespread impact on health care.

V.MOBILE ROBOTS:

The expression mobile robot describes a robotic system able to carry out tasks in different places and consisting of a platform moved by locomotive elements. The alternative of the locomotive system depends firstly on the environment in which the robot will operate. This can be aerial, aquatic or terrestrial In the aquatic and aerial environments, the locomotive systems are usually propellers or screws, although at

the seabed legs are also used. The choice of the locomotive system on earth is more complicated due to the variety of terrestrial environments. Wheels, tracks, and legs are typical terrestrial locomotive elements. Mobile robots provides robots with enhanced operating capacity and opens up new areas of investigation. Some such areas are common to all mobile robots, like the navigation problem, whereas others deal more specifically with a certain locomotion system, like the walking gait. Basically the industrial robots were introduced in the production process, mobile robots were installed in the factory. This was around 1968, and the robots were mainly automated guided vehicles (AGVs), vehicles transporting tools and following a predefined trajectory. Nevertheless, the research in this area deals now with autonomous indoor and outdoor navigation. Independent mobile-robot navigation consists of four stages: perception of the environment, self localization, motion planning and motion generation. In planned environments, the perception process allows maps or models of the world to be generated, that are used for robot localization and motion planning. In formless or dynamic environments, however, the robot has to learn how to navigate. Navigation is, therefore, one of the main important aspect of artificial intelligence to robotics, where learning, reasoning and problem solving come together. The main reason of research in mobile robotics is focusing on robot localization and map generation.

Figure 4:Mobile Robot:How Intelligent systems are Planned,Structured,Designed

VI. ROBOT LOCALIZATION

The localization process allows a mobile robot to know where it is at any moment qualified to its situation. For this purpose sensors are used that enable measurements to be taken related to the robot's state and its environment. These sensors accumulate errors and provide noisy measurements. For that reason, a great deal of research centers on improving position estimation by means of integrating measurements taken by several sensor types using Kalman filter techniques. Localization can be local or global. The simplest solution is local localization, where the robot incrementally corrects its position relative to an initial location, whereas in global localization the robot's initial position is not needed. In addition, the place process can be based on the sensorial identification of revolutions
in the environment whose place is well known, or it can be based on maps or models of the environment and
identify characteristic elements of the mapped environment. In this latter case, probabilistic approaches are used to solve the problem of uncertainty in the sensorial information. Localization algorithms in the collected works all come from the Bayes filter, a recursive equation that allows the robot's pose to be estimated from the perceptual model and the motion model. The problem is that implementing the Bayes filter is computationally inefficient and the possible simplifications lead to diverse localization algorithms. A classification is shown in Figure 4. There are two major families of algorithms, differing in how they represent the robot's belief. Where the robot's belief is modeled by means of multivariate Gaussian densities, we find the methods based on the Kalman Filter, whereas if we use multimodal distributions, we find Markov localization. Within the family of Markov localization, methods differ on the type of discretization that is used for the representation of the state space. To deal with multimodal-probability densities at a fine resolution, the significant part of the state space can be discretized and used for an calculation of the robot's belief, e.g., by means of a piece-wise constant function. Finally, the robot's belief can be represented by a set of weighted random samples (or particles) of robot positions and constrained based on observed variables. Fast sampling and its ability to represent arbitrary densities enables global localization to be performed efficiently. This gives rise to the Monte Carlo and condensation methods, generically known as particle filters.

(a)

(b)

Figure 5:Robot Localization(a) Aqua (Photograph courtesy of McGill University).(b) Mars Exploration Rover (Photograph courtesy of NASA/JPL-Caltech).

VII. UNDERWATER ROBOTS

Addition to that 70% of the earth is covered by ocean. However, little effort has been made to exploit or protect this vast resource, compared to space or terrestrial programs. During the last few years, the use of underwater robotic vehicles has rapidly increased, since such vehicles can be operated in the deeper, riskier areas that divers cannot reach. The potential applications of such vehicles include fishing, underwater pollution monitoring, rescue, and waste cleaning and handling in the ocean as well as at nuclear sites. Most commercial unmanned underwater robots are tethered and remotely operated; they are as a group, referred to as remotely operated vehicles (ROVs). Nevertheless, extensive use of manned submersibles and ROVs is currently limited to a few applications because of very high operational costs, operator fatigue and safety issues. The demand for underwater robot technologies is growing and will eventually lead to specialized, reliable, fully autonomous underwater vehicles (AUVs). In recent years, various research efforts have increased vehicle autonomy and minimized the need for the presence of human operators. A self-sufficient, intelligent, decision-making AUV is the goal of current research in underwater robotics. AUVs offer a challenging field for investigation into motion planning and control problems for robots operating in unstructured environments with limited on-line communication. Artificial intelligence techniques have been used to introduce some intelligence and to enable the vehicle to react to unexpected situations. Other areas of challenging research include the avoidance of significant external disturbances, sensing and localization methods that have to deal with noisy and dark environments and the impossibility of electromagnetic transmission.

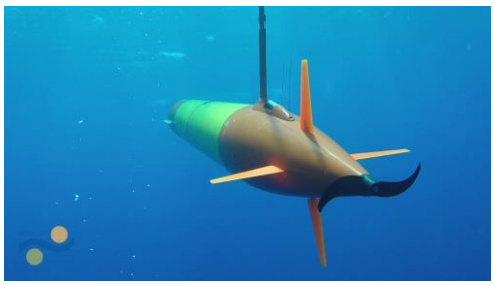

Figure 6:Underwater Robot

VIII.WALKING ROBOTS

There has been great power in studying mobile robots that use legs as their locomotion system. Some developments are shown in Figure 6. The legs of walking robots are based on two- or three-degrees-of-freedom (DOF) manipulators, and therefore walking robots share some of the technical problems typical of both industrial robots and mobile robots.

(a) (b) (c)
Figure 6.(a) Titan-VIII (Photograph courtesy of Tokyo Institute of Technology). (b) Lauron III (Photograph courtesy of FZIForschungszentrumInformatik). (c) SILO4 (Industrial Automation Institute—CSIC).

Movement on legs confers walking robots certain advantages as opposed to other mobile robots.

◆Legged robots can negotiate irregular terrain while maintaining their body always leveled without jeopardizing
their stability.

◆ Legged robots boast movement on stairs, over obstacles
and over ditches as one of their main advantages.

◆ Legged robots can walk over loose and grimy landscape.

◆Legged robots have inherent Omni directionality.

◆ Legged robots inflict much less environmental damage
than robots that move on wheels or tracks.

However, at the same time, legs pose a number of problems of their own. Definitely, legged-robot research focuses on everything related to leg motion and coordination during robot navigation.

Robot stability is a related research topic. Roughly speaking, a walking robot is stable if it is able to keep its balance. Research on walking-robot permanence began in 1968, when McGhee and Frank first defined the static stability of an ideal walking robot [17]. The idea of static stability was inspired by insects and assumed the absence of inertia in the motion of the robot limbs. However, during the motion of the usually heavy limbs and body of a robot, some inertial effects and other dynamic components (friction, elasticity, etc.) were found to arise, restricting robot movements to low, constant velocities. Thus, the implementation of static stability limited walking robots' speed of motion, and subsequently, researchers started to think about dynamic stability, where robot dynamics come into play.

IX.CONCLUSION

In the introduction of industrial robots in the automotive industry, robotics research has evolved over time towards the development of robotic systems to help the human in dangerous, risky or unpleasant tasks. As the complexity of tasks has increased, flexibility has been demanded in industrial robots, and robotics research has veered towards adaptive and intelligent systems. Since 1995, robotics research has entered the field- and service-robotics world, where we can find manipulators, mobile robots and animal-like robots with great perspectives of development

and increasing research interest. Robots such as surgical robots have been the first successes, and recently different areas in medical and rehabilitation-robotics applications have arisen. Other examples can be found in the fields of home cleaning, refueling and museum exhibitions, to name just a few areas. Service-robotics research is also aimed at providing a comfortable, easy life for the human being in an aging world. Forecast had been made by UNECE that a tremendous rise in personal robots in the next few years. Robotics research has to make a great effort to solve in very few years the challenges of this new field of research, which will be largely determined by interaction between humans and robots. It is a fact that, during the last decade, the activity in conferences and expositions all over the world has reflected low activity in industrial manipulators and huge activity in additional areas related with manipulation in unstructured environments and mobility, including wheeled, flying, underwater, legged and humanoid robots. Perhaps the key is that new challenges in manipulation in factories require less research now because factory needs lie in the field of traditional engineering. With these premises we can conclude: Yes, definitely robotics research is moving from industrial to field and service applications, and most robotics researchers are enthusiastic about this broad, exciting field. Progress that is very representative of the way the field is evolving is the controversy set off by Prof. Engelberger, the creator of the first robotics company, at the 2005 International Robot Exhibition in Tokyo, Japan, when he commented on the needless research by both Japanese companies and technical institutions for developing toy-like animal and humanoid robots for very doubtful use. Thus Engelberger gained many detractors, who have rapidly argued back that these kinds of robots are a necessary step in the evolution towards real robots capable of helping disabled persons, performing dangerous work and moving in hazardous places. Other defenders of the development of human-like personal robots advocate the importance of aiming at such challenging tasks because of the technology that can be developed, which would prove very important from the marketable point of view in other industrial activities. Nothing better for that than a device resembling—what else?—a human being. So, let our imagination fly into the world of service robotics, but, please, do not forget to keep an eye on traditional industrial manipulators.

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Study of Big Data Analytics, Challenges and Current Issues

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ABSTRACT: ***Big Data analytics is the process of collecting, organizing and analyzing huge sets of data (called Big Data) to discover patterns and other useful information. Big Data analytics can help organizations to better understand the information contained inside the data and will also help recognize the data that is most important to the business and future business decisions. Analysts working with Big Data usually want the knowledge that comes from analyzing the data.***
The term of Big data is a volume or technology, this is the big question before researches. When business persons used that they refers Big data is a technology and if any organization used to known as volume or large amount of data
An instance of big data may be petabytes (1,024 terabytes) or exabytes (1,024 petabytes) of data consisting of billions to trillions of records of millions of people—all from different sources (e.g. Web, sales, customer contact centre, social media, mobile data and presently). The data is usually freely structured data that is often incomplete and inaccessible.

Keywords : *Big Data, Analytics, petabytes,exabytes*

Introduction
Applying Big Data analytics in any business is never a cakewalk. It is not as simple as it seems to be. It needs a robust Big Data architecture to get the best results out of Big Data and analytics. It is the foundation of Big Data analytics. It can be assumed as the ultimate path a business needs to follow to get their aim fulfilled. The Big Data architects begin designing the path by understanding the goals and objectives the final destination one needs to reach stating the advantages and disadvantages of different paths. It is a painful task, but it's achievable with the right planning and the appropriate tools.

Make Your First Move into The Big Data World
The traditional process for designing Big Data architecture goes something like this -
The architect meets with the stakeholders to understand the company's objectives and then plan the processing framework with appropriate hardware and software systems. Planning this system ahead of time is crucial for success.

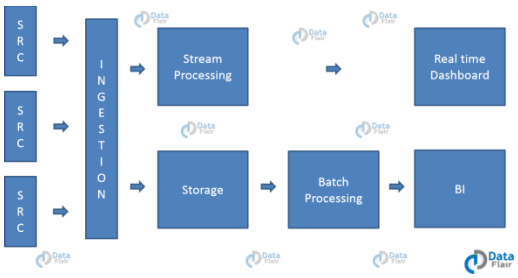
What is Big Data?
Big Data is a data with a vast size. Big Data is a term used to describe a set of data that is massive in size and yet growing exponentially with time. Briefly such data is so large and complex that not any of the traditional data management tools are able to store it or process it efficiently.
The development to bigger data sets is due to the additional information derivable from study of a single large set of related data, as compared to separate smaller sets with the similar quantity of data, allowing relationship to be found to spot business trends, determine quality of research, prevent diseases, link legal documents, struggle crime, and determine real-time roadway traffic conditions.

Characteristics of Big Data
Volume:
Data volume is increasing exponentially.Big data is any set of data that is so large that the organization that owns it faces challenges related to storing or processing it. In reality, drifts like ecommerce, mobility, social media and the Internet of Things (IoT) are generating so much information, that almost every organization probably meets this standard
Velocity:
Data is begin generated fast and need to be processed fast If your organizations is generating new data at a rapid pace and needs to respond in real time, you have the velocity associated with big data. Most

organizations that are involved in ecommerce, social media or IoT satisfy this principle for big data.

Variety:
If your data resides in many different formats, it has the variety
associated with big data. For example, big data stores typically include
email messages, word processing documents, images, video and
presentations, as well as data that resides in structured relational
database management systems (RDBMS).

The Big Data Architecture



Sources Layer
The Big Data sources are the ones that run the Big Data architecture. The
designing of the architecture depends heavily on the data sources. The data is arriving from numerous sources that too in different formats. These include relational databases, company servers and sensors such as IoT devices, third-party data providers, etc. This data can be both batch data as well as real-time data. These sources load up a huge amount of data in no time. The Big Data architecture is designed such that it is capable of handling this data

Data Ingestion
This is the first layer from which the journey of Big Data arriving from numerous sources begins. This layer takes care of categorizing the data for the smooth flow of data into the further layers of the architecture. The primary goal of this layer is to provide trouble-free transportation of data into the further layers of data architecture. Generally, Kafka Streams or REST APIs are used for Ingestion.

Storage Layer
This layer is at the receiving end for the Big Data. It receives data from the various data sources and stores it in the most appropriate manner. This layer can even change the format of the data according to the requirements of the system. For example, batch processing data is generally stored in a distributed file storage systems such as HDFS that are capable of storing high volume data that too in different formats. On the other hand, structured data can be stored using RDBMS only. It all depends on the format of the data and the purpose we need it for.

Analysis Layer
The only goal of companies employing Big Data is to gain insight from it and thus make data-driven decisions. To empower users to analyze Big Data, the most important layer in the Big Data architecture is the analysis layer. This analysis layer interacts with the storage layer to gain valuable insights. The architecture requires multiple tools to analyze Big Data. The structured data is easy to handle whereas some advanced tools are needed to analyze the unstructured data.

1. Batch Processing
Since the data is so huge in size, the architecture needs a batch processing system to filter, aggregate, and process data for advanced analytics. These are long-running batch jobs. This involves reading the data from the storage layer, processing it, and finally writing the outputs to the new files. Hadoop is the most commonly used solution for it.

2. Real-Time Processing
Processing the data arriving in real-time is the hottest trend in the Big Data world. The Big Data architecture, therefore, must include a system to capture and store realtime data. This can be done by simply ingesting the real-time data into a data store for processing. The architecture needs to have a robust system for dealing with realtime data.

BI Layer
This layer receives the final analysis output and replicates it to the appropriate output system. The different types of outputs are for human viewers, applications, and business processes. The whole process of gaining Big Data solutions includes ingesting data from multiple sources, repeated data processing operations, and drawing the results into a report or a dashboard. These reports are then used for making data-driven decisions by the companies.

Current Issues of Big Data
We can imagine the value of Big Data in the world by following graph. Different users are sharing or using social networks in huge form. Analytics is possible using such data and hence it can conclude so many results by human beings.

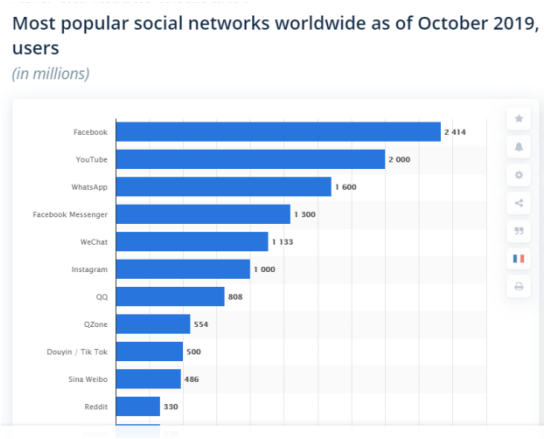
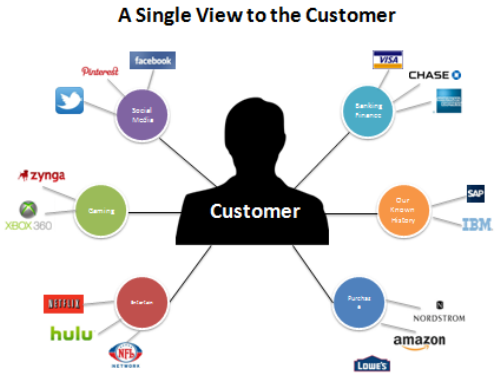


Figure: Social network users



A user or any individual user interact social network and complete all the goals of living. Customers play multiple roles in social network world and stores his/her record for long time. It is very easy to extract any type of reports related to bank, facebook, social media, education etc for customer as well as concern organisation.

Challenges

Harnessing Big Data is not an easy task. Obtaining Big Data solutions is an extremely complex task as it requires numerous components to govern data ingestion from multiple data sources. It is a challenging task at hand to build, test, and troubleshoot big data processes. Proper synchronization between the various components is required in order to optimize performance. Big Data technologies are still evolving. Big Data technologies are evolving new changes that help in building optimized systems. While the Hadoop technologies such as Hive
and Pig have stabilized, emerging technologies such as Spark are continuously introducing extensive changes and enhancements with each new release. To choose the right technology according to your business requirements is the key to Big Data architecture.

Implementing Big Data architecture brings a lot of security challenges. The insights depend on centrally stored static data. But accessing this data is a challenging task as the data could be ingested and consumed by multiple applications and platforms. In the era where data breaching is commonplace, implementing a robust security system becomes
a necessity to safeguard the data from various thefts. A service-level agreement must be signed with the service provider at the beginning itself to ensure the safety of your data.

Security issues in Big Data Analytics

Security is also a big anxiety for organizations with big data stores. After all,some big data stores can be attractive targets for hackers or advanced persistent threats (APTs). However, most organizations seem to believe that their existing data security methods are sufficient for their big data needs as well. In the IDG survey, less than half of those surveyed (39 percent) said that they were using additional security measure for their big data ordnance or analyses. Among those who do use extra measures, the most popular include identity and data separation (42 percent), access control (59 percent) and data encryption (52 percent)

Suggestions for Future Work

The amount of data collected from a variety of applications all over the world across a wide variety of fields today is expected to double every two years. It has no convenience unless these are analyzed to get useful information. This necessitates the development of techniques which can be used to facilitate big data analysis. The development of powerful computers is a advantage to implement these techniques leading to automated systems. Programming for big data analysis is an significant challenging issue.

Conclusion

In recent years data are generated at a dramatic speed. Analyzing these data is challenging for a common man. To this end in this paper, we study the various challenges used to analyze these big data. From this study, it is understood that every big data platform has its individual focus. Some of them are designed for batch processing while some are good at real-time analytic. Each big data platform also has specific functionality. Different techniques used for the analysis include statistical analysis, machine learning, data mining, intelligent analysis, cloud computing, quantum computing, and data stream processing. We believe that in future researchers will pay more attention to these techniques to solve problems of big data effectively and efficiently.

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CLOUD COMPUTING AND DATABASE SECURITY

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ABSTACT: ***With the progress of cloud computing, Data safety becomes more and more essential in cloud computing . This paper examines the elementary problem of cloud computing data security.Cloud Computing provides the way to segment distributed resources and facilities that belong to different organization or sites. Since Cloud Computing share circulated resources via network in the open environment thus it makes security problems.In this method some essential security services comprising authentication, encryption and decryption and density are delivered in Cloud Computing system.Fog computing is not a emergency of cloud it is just extends the cloud computing by providing retreat in the cloud environment.Cloud Computing abilities to expressively change the way of use computers and store our personal and business material can arises new data security encounters. Encryption mechanisms not protect the data in the hunk from illegal access.We proposed a different method for locking data in the clod using invasive trick technology. We monitor data access in the clod and detect abnormal data access shapes.***

KYEWORDS:

Introduction,Cloud Services,Database Security Consideration,Cloud Computing Security and Privacy,Security Plan for Database,Steps to Make Cloud Computing More Secure,Security Issues.

I .INTRODUCTION

Cloud computing safety refers to the set of procedures, processes and standards calculated to afford material security guarantee in a cloud computing environment. Cloud computing safety addresses both physical and logical security issues diagonally all the different service models of software, platform and arrangement. It also addresses how these services are scattered (public, private or hybrid delivery model). Cloud computing is the main element of this standard, that provides a large storage area where resources are present from everywhere to everyone as a service rather than as a produce. Throughout in the history of computer science a variability of efforts have been made to relief users from the needs of computer hardware (such as storage) and software, since time-sharing utilities projected in 1960s, network computers in 1990s and commercial network computing to cloud computing in more recent years. Cloud computing comes center of meditation only when think about what IT always needs: a way to increase the competencies of a system on fly without spending any new organization, training a new employees and licensing of any new software. Today cloud services provide involvement or pay-per-use based service; the services deal over the Internet in real time, in which covers basic IT experiences into hard area In cloud computing, cloud stands for internet and computing means usingcomputer technology, hardware, and software, i.e. using or sharing the computer technology, hardware and software upstairs the internet

II.CLOUD SERVICES

The word cloud in the information technology refers to assemblies of services, information, applications, and substructure comprised of pools of network computer, information and storages resources. (Kamala and Kaur, 2011) The core concept of cloud computing is sinking the processing load on the user's station by frequently improving the handling ability of the cloud to make things easier the user's station to a simple output and input devices, and to offer the demand services.

III.DATABASESECURITY CONSIDERATIONS

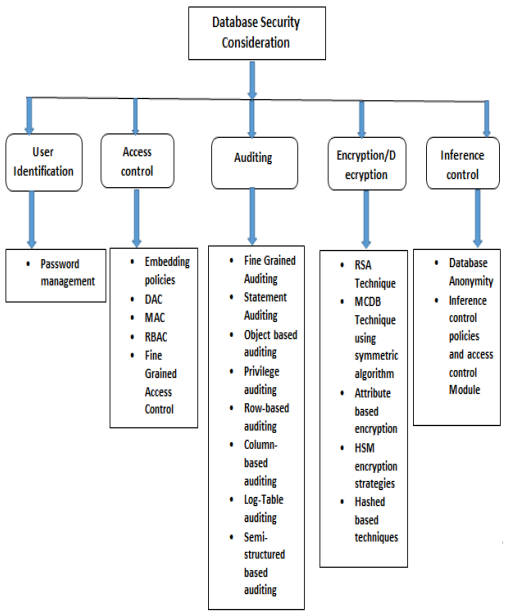

Figure 1 : Database Security Consideration

IV. CLOUD COMPUTING SECURITY AND PRIVACY

This section addresses the core theme of this chapter, i.e., the safety and privacy-related challenges in cloud computing. There are frequent safety issues for cloud computing as it

encompasses many technologies counting networks, databases, operating systems, virtualization, resource scheduling, Transaction management, load balancing, concurrency control and memory management. Therefore, security issues for many of these systems and technologies are related

to cloud computing. For example, the network that interconnects the systems in a cloud has to be safe. In addition virtualization paradigm in cloud computing leads to several security concerns. For example, mapping the virtual machines to the physical machines has to be accepted out securely. Data security involves encrypting the data as well as ensuring that proper policies are enforced for data sharing. In addition resource allowance and memory management algorithms have to be secure. Finally, data mining techniques may be relevant for malware detection in the clouds – an approach which is usually adopted in imposition detection systems.

As shown in Figure below there are six definite areas of the cloud computing environment where apparatus and software require substantial security attention (Trusted Computing Group's White Paper, 2010)

These six areas are:

(1) Security of data at rest,

(2) Security of data in transit,

(3) Authentication of users/applications/ processes,

(4) Robust separation between data belonging to different customers,

(5) Cloud legal and regulatory issues,

(6) Incident response

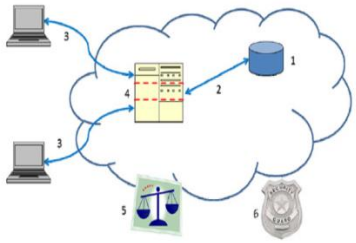

Figure 2: Areas for security concerns in cloud computing

For acquiring data at rest, cryptographic encryption mechanisms are positively the best selections. The hard drive constructors are now conveyance self-encrypting efforts that implement beloved storage standards of the reliable computing group (Trusted Computing Group's White Paper, 2010). These self-encrypting drives figure encryption hardware into the drive, as long as automated encryption with minimal cost or routine blow. Although software encryption can also be used for helpful data, it makes the process slower and less protected since it may be possible for an pretender to steal the encryption key from the device without being noticed.

One of the more outward cloud alarms is separation between a cloud benefactor's users (who may be competing businesses or even hackers) to keep away from chance or intentional access to searching information. Typically a cloud provider would use simulated machines (VMs) and a hypervisor to split clients. Technologies are presently offered that can provide major refuge progresses for VMs and virtual network departure. In addition, the TPM (trusted platform module)can provide hardware-based proof of hypervisor and VM honor and thereby confirm solid network departure and security

V.SECURITY PLAN FOR DATABASE :

- Identify the user community.
- Gather the database information.
- Determine the types of user account (i.e. associate database objects an user roles).
- Undertake a threat analysis.
- Establish DBA authorities and procedures.
- Establish policies for managing (creating, deleting, auditing) user accounts.
- Determine the user tracking policy.
- Establish the user identification method.
- Define security incidents and reporting procedure.
- Assess the sensitivity of specific data objects.
- Establish standards and enforcement procedures (as well as back-up an recovery plans, of course

VI.STEPS TO MAKE CLOUD COMPUTING MORE SECURE :

This section concern with the major steps that should be followed to make certain safety and prevent cruel attack on the cloud computing. Paul *et al* (2012) noted that, the following are the steps that make cloud computing more secured:

1. Make sure to develop good policies around passwords; how they are changed, protected and created.
2. Don't allow the staffs to get access of your passwords.
3. Installing exception monitoring system.
4. Check whether any third party companies are able to access your data.
5. Make sure that not any third party companies access your data.
6. If a user registers for any cloud computing services, the confirmation checks should be applied.
7. The cloud service provider and the customer must sign an agreement form stating clearly the responsibilities of parties, terms and conditions of contract and breakup.

8. Measures of data backup should be there in the cloud. In case of data loss, the backup data can be used to regain the loss data.
9. The cloud provider must have strict authentication and validation policy for employees.
10. The minimum set of standard for cloud computing must be stated.
11. The cloud providers should be trustworthy reputed and accredited.

VII.SECURITY ISSUE

Cloud computing presents many exclusive security issues and challenges. In the cloud, data is stored with a third-party contributor and accessed over the internet. This means visibility and control over that data is restricted. It also raises the question of how it can be correctly secured. It is necessary everyone understands their respective role and the security issues natural in cloud computing. Cloud service providers treat cloud security risks as a shared accountability. In this model, the cloud service provider covers refuge of the cloud itself, and the customer covers security of what they put in it. In every cloud service—from software-as-a-service like Microsoft Office 365 to infrastructure-as-a-service like Amazon Web Services (AWS)—the cloud computing customer is always responsible for protecting their data from security pressure and controlling access to it.

Most cloud computing security risks are correlated to data security. Whether a lack of visibility to data, inability to control data, or stealing of data in the cloud, most issues come back to the data customers put in the cloud. Read below for an analysis of the top cloud safety issues in private cloud, placed in order by how often they are experienced by endeavor organizations around the world.

- Top 10 cloud security issues experienced with software-as-a-service
- Lack of visibility into what data is within cloud applications
- Theft of data from a cloud application by malicious actor
- Incomplete control over who can access sensitive data
- Inability to monitor data in transit to and from cloud applications
- Cloud applications being provisioned outside of IT visibility (e.g., shadow IT)
- Lack of staff with the skills to manage security for cloud applications
- Inability to prevent malicious insider theft or misuse of data
- Advanced threats and attacks against the cloud application provider
- Inability to assess the security of the cloud application provider's operations.
- Inability to maintain regulatory compliance

VII.DATABASE SECURITY ISSUES :

- **Daily Maintenance:**

Database evaluation logs include daily analysis to make definite that there has been no data misapplication. This wants control database rights and then every time apprising user access books. A database security executive also provides infrequent types of appearance control for unalike users and assesses new programs that are performance with the database. If these errands are performed on a diurnal basis, you can pass up a lot of problems with handlers that may pose a warning to the refuge of the database.

- **Varied Security methods for Applications:**
  More recurrently than not requests developers will vary the methods of safety for various tenders that are being developed within the database. This can create struggle with fashioning policies for editing the tenders. The database must also possess the correct access controls for changeable the changeable methods of refuge otherwise prone data is at risk.

- **Post-Upgrade Evaluation:**

When a database is advanced it is necessary for the officer to perform a post-upgrade valuation to ensure that safety is unfailing through all programs. Failure to perform this process opens up the database to attack

- **Split the Position:**

Sometimes administrations fail to divided the duties between the IT commissioner and the database security controller. As an alternative the company attempts to cut charges by having the IT officer do everything. This action can significantly reunion the security of the data due to the duties involved with both positions. The IT commissioner should manage the database while the security leader performs all of the daily reserve processes.

- **Application Spoofing:**

Hackers are proficient of generating submissions that look like the existing claims related to the database. These illegal presentations are often tough to identify and consensus to hackers access to the folder via the submission in façade

- **Manage User Passwords:**
- Sometimes IT database harbor leaders will forget to eliminate IDs and entree rights of previous workers which leads to password weaknesses in the file.Password rules and care requirements to be inflexibly necessary to pass up foundational up the record to banned workers.
- **Windows OS Flaws:**

Windows effective systems are not current when it comes to file security. Often shoplifting of PINs is wild as well as denial of amenity disputes. The database refuge chief can take shield through routine daily keep forms.

These are just a few of the database security hitches that exist within officialdoms. The best way to escape a lot of these problems is to work trained laborers and dispersed the security shops from the daily database shield errands.

CONCLUSION

The findings in the present study shows that regardless of the thorough effort by the software and related companies to provide an efficient and consistent security measures on the database, current security measures do not assurance zero risk on the database but only reduce the risk in our current information technology world It therefore became necessary to promptly and effectively enhance the current security measures to a more strong and efficient. This can be achieved through inventive research, auditing to the users and hard work by the cloud computing and related companies. Database security features in leading DBMS have evolved far beyond the rather basic mechanisms in SQL that were used for many years. Even with current DBMS facial appearance, security requires a large portion of the in general effort to develop a software application.

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DIGITAL IMAGE PROCESSING TECHNIQUES

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ABSTRACT: *Digital Image Processing is the process of digital images using various computer algorithms. The digital image processing has been employed in number of areas such as shape recognition, remote sensing and image-sharpening, color and video processing and medicals. This paper present a brief overview and works review of the digital image processing techniques such as imagepre-processing, compression, detection of edges and segmentation.*

1. INTRODUCTION:

The image processing is an examined and handling of a digitalized image, specializing order to improve the quality of the image processing. DIP method can be applied in variety of different fields such as Diagnostic image analysis, Surgical planning, Object detection and Matching, Background subtraction in video, Localization of tambours, Measuring tissue volumes, Locate objects in the satellite images (animals , areas , forests, etc.) and Traffic control systems, Locating objects in the face recognition, iris recognition, farming imaging, and medicinal imaging. Digital image processing addresses challenges and issue like that loss of image quality, to enhance despoiled image. In this paper the review of the writing related to the is Digital image processing discuss. The major digital image processing techniques are pre-processing, image compression, edge detection and segmentation are discussed.

2. PRE-PROCESSING

Pre-processing of images generally involves remove low-frequency background noise and normalize the amount of the individual particles images and removing otherwise enhancing data images prior to the computational processing.

A method to improve the boundaries and reduce the noise level in the input images before dealing with the segmentation process. In the pre-processing module they included image resize, histogram equalization, ROI selection (Image cropping) and median filtering. In this process, a global histogram equalization was used which was a wonderful technique for contrast and texture enhancement of medical images.

Medical images pre-processing is an important pace in a medical image segmentation and 3D rebuilding. Salt and pepper noise were more prevalent in the medical images to the conservative method were not effective in a filtering salt and pepper noise. Morphological erosion is the best filter for remove salt and pepper noise. The trial results were extra effective for the medical image de-noising.

Pre-processing technique to group pixels into the "super pixels". They would like to process with the "super pixels" which were local and coherent and which save most of the structure essential for the segmentation at the scale of interest. They applied the normalize cut algorithm to the make the super pixel map.

3. IMAGE COMPRESSION

Image compression is an application of the data compression that encodes to the original image with the hardly any bits. The objective of the image compression is to decrease the redundancy of the image and to store otherwise transmit data in an efficient form. The main target is to the reduce the storage amount as much as possible and the decode image display in the monitor can be parallel to the original image as much as can be.

A system to the preserve the excellence of the image after the image compression

method using the Wavelet Algorithm. In their effort, JPEG and PNG image was used. It was noted that for the JPEG image, the size is reduced approximately half of original image by using the Haar wavelet algorithm, for the reason that, JPEG image used the lossy density type, it still maintain the quality and information of the image.

A solution that enhances the image quality. The improved image was then the segmented using a modified watershed algorithm that uses the mean-shift cluster. The development technique proposed a mixture version that joint wavelets, improved anisotropic diffusion and

CLAHE to the improve the input satellite images. Three algorithms were use during the segmentation. They were conservative mean-shift algorithm, cluster based k-means algorithm and modified watershed algorithm. Various experiments proved that the made

to order watershed algorithm produced improved segmentation results when compare with the other two algorithms. The planned watershed algorithm, taken care of a over segmentation method efficiently, other than the under segmentation process was not considered. In medical, image compression using integer multi wavelets transform for the telemedicine applications.

An efficient compression and encoding performance based on the Integer multi wavelet change of the medical application. The projected algorithm result in the better quality images. The occupation focused on the implementation of the lossless image data. They proposed multi wavelet base compression for this difficulty, which had been revealed to have much improved coding efficiency and the less computational complexity than the existing approaches. The success of the high PSNR was due to the development of the compression ratio.

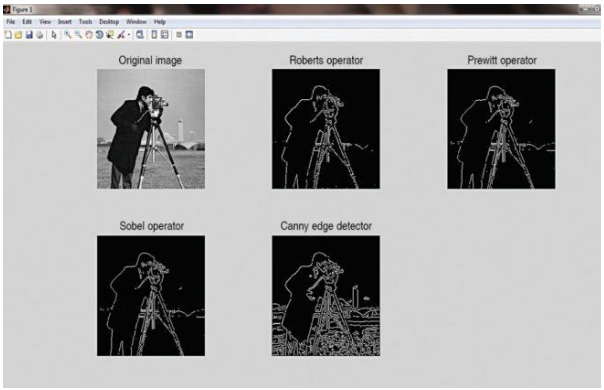
4. EDGE DETECTION

Edge detection is the name for a set of a mathematical process which want at identify points in a digital image at which the image brightness change harshly otherwise, more officially, has discontinuities.

In [7] Saif, et al. presented two techniques of the segmentation algorithms such as Canny edge Detection. The effectiveness of the wished-for algorithms was evaluated for the medical and non medical images. For the non medical images two algorithms returned in excellent segmented images. Canny segmentation is more proper than Otsu to the tested endoscopic image.

Since, there is no clear difference of the objects from the background and for the MRI grey scale image. Image segmentation base on the watershed and boundary detection techniques.

Salman, et al.[8] have proposed a grouping of K-means, watershed segmentation process, and Difference In Strength (DIS) map to execute image segmentation and edge detection tasks. They have used the two techniques: in the first watershed technique with latest merging events based on mean intensity value is used to the segment the image regions and to detect their margins. The second technique was the edge power technique to obtain exact edge maps of our images with no using the watershed method.



Images for Detection of edges

They solved the difficulty of unwanted over segmentation results formed by the watershed algorithm, when used the directly with the raw data images. Also, the edge maps they obtained have no broken lines on the absolute image and the last edge detection result was one closed boundary per actual region in the image.

Karantzalos, et al. [9] brought together two highly developed nonlinear scale space representation, anisotropic dispersion filtering and morphological leveling, forming a processing scheme by their grouping. The wished-for scheme was applied to edge detection and watershed segmentation tasks.

Experimental results on automatic olive tree taking out and watershed segmentation showed its Effectiveness as a pre-processing tool for edge detection and segmentation from the remote sense images. Their attention has focused on panchromatic high spatial resolution satellite sensor data processing other than the developed scheme can also be apply to color and multidimensional image data by the processing each channel individually.

5.Image Segmentation:

Segmentation procedure partition an image into its constituent part or object. In generally, autonomous segmentation is one of the most difficult task in digital image processing. A Rugged segmentation procedure bring the process a long way toward successful solution of imaging problem that required object to be identified indivisible.

In **image segmentation** is the method of partition a digital image into the multiple segments. The purpose of segmentation is to simplify and change the representation of an image into a bit that is additional meaningful and simply to analyze. Image segmentation is naturally used to locate objects and boundaries in the images. More accurately, image segmentation is the process of transmission a label to every pixel in an image such that the pixels with the same label share definite characteristics. The result of image segmentation is a set of segments that in a group wrap the entire image, or a set of contours extract from the image. Each of the pixels in a region are parallel with respect to the some feature or computed property, such as color, intensity, or texture. neighboring regions are extensively different with respect to the equivalent characteristic. When applied to a stack of the images, usual in the medical imaging, the resulting contours after image segmentation can be used to the generate 3D reconstructions with the help of exclamation algorithms like Marching cubes.

6.Image Restoration:

Image restoration is an area that also deals with improving the appearance of an image.However, unlike enhancements which is subjective, image

restoration techniques tend to be based on mathematical or probabilistic modes of image degradation.

Image Restoration is the procedure of taking a corrupt image and estimate the clean, original image. dishonesty may come in the many forms such as motion blur, noise and the camera focus. Image restoration is the perform by the reversing the method that blurred the image and such is performed by imaging a point resource and use the point source image, which is called the Point Spread Function (PSF) to the restore the image information gone to the blurring method.

Image restoration is the dissimilar from image enhancement in that the latter is the designed to emphasize features of the image that create the image more pleasing to the viewer, but not necessarily to generate realistic data from a scientific point of view. Image enhancement technique provide by the imaging correspondence use no *a priori* model of the process that produced the image.

7.Application of digital image processing:

Some of the major fields in which digital image processing is widely use are mentioned below:

a) Image Sharpening and Restoration:

Image sharpening and restoration refers here to the method images that have been capture from the new camera to the create them a improved image or to the manipulate those images in way to achieve desired result. It refers to do what Photoshop usually does.

This includes zooming, blurring, sharpening, gray scale to the color conversion, detecting edges and vise versa, images retrieval and images recognitions.

b) Medical field:

The common application of DIP into the field of medical is

Gamma ray imaging

PET scan

X Ray imaging

Medical CT

UV imaging

In the field of remote sensing, the area of earth is scanned by the satellite or from a very high ground and then it is analyses to obtain information about it.

One particular application as digital image processing in the field of remote sensing is to detect infrastructure damages causes by an earthquake. As it takes longer time to grasp damages even if serious damages are focused on.

c) Transmission and Encoding:

It is very first image that has been transmit over the wire was from London to New-York via a submarine cable. The picture that was sent to took three hours to reach from one place to another;

Now just imaging, that today we are able to see live video feed, or live cctv footage from one continent to another with just a delay of second.

- It means that a lot of work has been done in this field too. This field does not only focus on transmission, other than also on encoding. Many different formats have been developed for high or low bandwidth to encode photo and then stream it over the internet.

c) Machine/Robot Vision:

Apart from the many challenges that a robot face today, one of the biggest challenge still is to increase the vision of the robot. Make robot able to see thing, identify them, identify the hurdles etc. Much work has been introduced to work on it.

- Line follower robot: Most of the today work by following the line and thus are called line follower robots. This help a robot to move on its path and perform some tasks. This has also been achieved through image processing.

d) Color processing:

Color processing includes processing of colored images and different color space that are used. For example RGB color model, YCbCr, HSV. Color processing also involve studying transmission, cargo space, and encoding of these color image.

e) Pattern recognition:

Pattern recognition involves study from image processing and from various other field that includes machine learning(a branch of artificial intelligence). In pattern recognition , image processing is used for identifying the objects in an pattern. Its used in computer aided diagnosis, recognition of handwriting of image etc.

f) Video processing:

A video is not anything other than just the very fast movement of the pictures. The quantity of the video depend on the number of frames/pictures per minute and quantity of the each frame being used. Video processing dealing out involves noise reduction, details improvement, motion finding, frame rate exchange .

8.conclusion:

DIP deals with the handling of a digital image over and done with a digital computer. In this paper various type of a Digital Image Processing in the collected works are discussed and analyzed. The Digital Image Processing technique using image compression and edge detection and segmentation make available superior

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Wearable self defense system for women'system using GPS & GSM

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ABSRACT:-

Even in the modern era,the world is becoming insecure for women in all fields. The crimes against women are increasing continuosly.According to WHO,NCRB-social govt. org. 35% women all over world are facing a lot of unethical physical harassment in public places such as in working palces, in travelling such as railways, bus-stands ,footpaths,etc.The employed women are feeling insecure due to increasing crimes.

Our aim is to implement process that women trust. When someone is going to bother, she can press the button that is attached to the device and the location information is sent as an SMS alert to few pre-determined emergency numbers .In this, we use GPS which help to detect location of the device and GSM is used to send alert messages to guardian ,relatives and police station. .

The microchip used is PIC16877A. It is combine with a push button, a GPS module, a GSM modem and a speech circuit (ISD1820PY).

This paper suggest a quick responding action that helps women during troubles.

Keywords: PIC16F877A; GPS; GSM; ISD 1820PY.

Introduction:-

Nowdays, women are feeling unsafe to get out of their house because of corporate and IT sector are currently in boom.

Many women are working in corporate even in day-night shifts. There is a feeling of unconfident among the working women. The developed device is more like a safety system in case of emergency. This device can be suited in a jacket (similar to a blazer for women).It is an easy to carry device with more properties and functions. The emergency push button is guarded to one of the buttons of the jacket.

The main purpose of this device is to inform the parents and police about the current location of the women. A GPS system is used to trace the current position of the sucker and a GSM modem is used to
send the message to the pre-determined numbers. There are several functions that
reduce the risk of sexual abuse by sending SMS but in our model we also provide an audio circuit which is more useful for handicapped peoples.

Block Diagram:-

The block diagram of the proposed system is shown in Figure 1.

The microprocessor acts as an embedded computing system and itcontrols the functions of all the subsystems. The microchipiscontrols the functions of all the subsystems. The microcontroller

increasing crimes in our country like annoyance, misuse, attack etc., The
iscommunicates with all the other modules of the device. The program for PIC microprocessor is done in embedded C language and is dumpedusing a kit.

Existing Systems:-

1)GSM and GPS based vehicle tracking system:-

This vehicle tracking system is currently used. This system be composed of GPS module attached to a button in the vehicle. In case of emergency, the switch attached to the GPS can be pushed. The GPS system that is used here is Teltonika FM1100 .When any problem occurs the employee travelling in the vehicle pushed the switch attached to the GPS. GSM switch is used to send the message to a special team of the organization.

Drawbacks:-

i)Although this system seems to be useful, at times there are some drawbacks because the drivers may not be truthful.

ii)GPS jammers

iii) Tracking systems can be an offense of privacy.

2)GPS, GSM and a Spy camera system:-

Another existing one method is an application based prototype . It is consists of GPS, GSM and a spy camera. The user should register the emergency numbers. This is an android app which provides all services.

Drawbacks:-

i)Although this system seems to be useful, it has a disadvantage that if the mobile phone of the sucker is thrown away by the culprit person, this model cannot be useful.

Proposed Model:-

The device includes :-
1)GSM(SIM 900A)
2)GPS(G702-001UB)
3) Micro controller (PIC 16F877A)
4)Speed circuit (ISD1820PY)
5)Voltage regulator circuit
6) Speaker

The block diagram of the proposed model is shown inFigure 1.

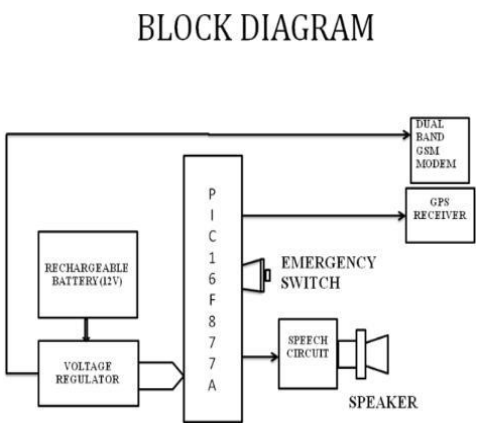


Figure 1: The block diagram of the proposed model.

The microprocessor (PIC16F877A) acts as an embeddedcomputing system and controls the functions of all the subsystems. It is consists of Emergency Switch, GPS Receiver, GSM MODEM, and Speech Circuit.

In case of emergency the trigger button is pushed .The system tracks the location information from the GPS and prepares a text SMS containing the present location information and send SMS through GSM module to the police control room and SOS message to the pre-registered mobile number.

Using the information supplied by this GPS& GSM system, the location can be traced through Google maps . Thus the women's will be safe and they feels protected.

PIC16F877A:-

The IC made up of 40 pins. It is an 8bit microchip. It has 5 I/O ports, 15 interrupts. The 5 I/O ports namely as port A, port B, port C, port D and port E. With these 5 ports port A and port E are analog by default. It contains various registers out of which TMR2, RCSTA and INTCON register are used mostly. All the modules used are interfaced with the microchip. The microcontroller is handled in crystal mode with a frequency of 4MHz.

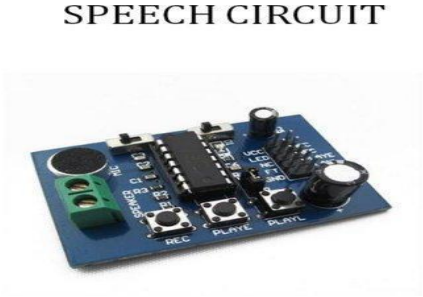
GSM :-

Global System for Mobile Communication (GSM) SIM card is a device to send the location received through GPS. The GSM SIM card number is enrolled with the system. In this proposed appliance the GSM acts as a receiver while the GPS acts as a transmitter. The received values from the transmitter are sent as an SMS to the few pre-registered emergency numbers. The receiver pin of GSM is interfaced with 16th pin of the microchip. The supply voltage is approximately 3.4V which is supplied from the voltage regulator circuit.

GPS:-

It contains six wires out of which three wires are used for connection. The blue wire is the transmitter wire which is connected to the 15th pin of the microchip. Voltage supply is nearly about 3.3V to 5V.When trigger button is pushed, GPS starts receiving signals from 8 satellites out of the 24 satellites in the orbit . Once if the connection is established the latitude and longitude values of the current location are acquired. The GPS behave as a transmitter. The 5V supply is given to the GPS from the microchip(Figure 2).

Speech circuit (ISD1820PY) :-



The component used for this circuit is ISD1820PY. The required sentence or a phrase or a message can be recorded . There are three buttons named as REC, PLAYE, PLAYL.

1)REC button:-

i)The REC button is used as an input button because it is used to record the required sentence or a phrase.

ii)The required input sentence is recorded with the help of MIC when the REC button is enabled.

2)PLAYE button:-

If the PLAYE button is pressed then the recorded sentence is continuously played.

3)PLAYL button:-

When the PLAYL is pressed the sentence is heard only up to the time of pressing the button because it does not identify the end of the sentence.

The voltage supply is given from the microcontroller. Another, two connections are given to the speaker through which sound is heard (Figure 3).

Features of ISD1820PY:-

- Playback can be Edge-activated or Level-activated .
- Automatic power down mode facility is available.
- We can drive with a 8 ohm speaker.
- Voltage supply changes between 3V to 5
- The audio of upto 20 seconds can be recorded.
- Dimensions are 37 × 55 mm.

Simulation:-

The program for our new model is coded in C language and is assembled using MPLAB software. The program is further checked in PROTEUS software. The GSM module is not available in PROTEUS. So,due to this, we can use virtual terminal component to check the output of the GSM. The simulation output is as given below:-

Output: -

Using AT commands the GSM module is able to send the message to the predetermined numbers. Normally, we prefer the information transfer to one or two numbers. But if necessary to send the message to many numbers, it is also can be possible. The numbers must be stored in the program of the microcontroller and must be deposit using the kit. The only difficulty is that it takes time to send message if the predetermined numbers are more than three. Thus ,as shown in above output image ,we are able to see the transmission of message from the GSM to the predetermined numbers using the virtual terminal.

Advantages of the Proposed Device

- This can be used for the women's safety as well as for the safety of children.
- This can be also used for the safety of elderly aged peoples and also for the safety of physically challenged people.
- can be used for Real-time tracking.
- can be used as a legal proof of crime with exact location
  information for prosecution.
- /*It is an all-in-one system. Hence no need to carry mul-tiple devices.
  GPS tracking feature tracks the user lively when you are the move after triggering the emergency button.*/

Applications of the Proposed Device

• Compact in size.
• Wi-fi connectivity.
• Effortless and rapid to install.
• Easy Repairs
• Low price with high performance.
• Peformance round the clock.
• Fast respond.
• Environmentally safe system.

Conclusion

Being safe and protected is the demand of the day. Our effort behind
this project is to design a gadget which is so compact in
itself that provide advantage of personal security system. This design
will deal with most of the critical problem faced by women and will help
them to be safe. Existing systems provide the mechanism to trace the
vehicle but no other emergency mechanism is provided. The proposed
mechanism provides viewing the location of the culprit in terms of
protections which can further be tracked using Google
maps. This system helps to reduce the crime rate against women.
Women's security is a main issue in current situation. These crimes
can be brought to an end with the help of real time implementation of
our proposed system.

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Review on Crop leaf Diseases and their Detection Techniques

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Abstract: ***A healthy crops or plant yield in much more better in quantity and quality as compared to that of an infected leaf of crop. As agriculture is backbone of the Indian economy and also it is the only source of income for many farmers in India. Many farmers in India use traditional approaches for identification and classification of diseases with their prior knowledge or seeking help from older people for analysis .The traditional approach of identification of diseases is having more chances of failures and delay of diseases detection since many f the diseases have different behaviours some start showing symptoms in early stages and some diseases show their effects after some period of time due to which the yield and the production may also can get affected. Machine learning and its different algorithms has been boon for overcoming such issues of detection and identification of crop diseases. They used techniques like image processing, segmentation and image classification as their back end to obtain their goals. This paper represents review of recent techniques and algorithms that were applied to crops for disease and infection detection to achieve success. This paper also represents the methodology used for crop disease detection by different researcher to achieve more efficiency and success.***

Keywords: Machine Learning, Crop, leaf, image processing.

I. INTRODUCTION

Agriculture is the major necessity for human sustenance on Earth. It plays a major role in increasing the economy of the countries like India which highly depends on the quality and production of crops. The crops are prone to various types of diseases and symptoms of the diseases are visible on leaf, fruit and stem in most of the cases [1]. Detection of diseases at an early stage is very essential to reduce the pesticide usage and most of the farmers take expert advises who detect the diseases based on the visual symptoms which are expensive and time consuming. Continuous monitoring of the big farms becomes very difficult with this technique. Image processing techniques are used as an effective way to recognize and classify the plant leaf diseases quickly [2] [3].

1.1. CROP LEAF DISEASE DETECTION USING IMAGE PROCESSING

Crop leaf disease detection includes some image processing basic step to detect and classify the crop leaf diseases. The steps include image Acquisition, pre- processing, image segmentation, feature extraction and leaf disease detection. These steps are as follows:

A. Image Acquisition

Image Acquisition is the first step of image processing. Every vision system has Image Acquisition as the first step. Crop/Plant leaf is obtained and captured using high resolution cameras. The images can also be obtained from various sources like databases available, internet or directly from the fields. The Image quality depends upon the image resolution and the RGB (Red, Green, Blue) values.

B. Image Pre-Processing

The steps in image pre-processing involve image enhancement, RGB conversions, filtration etc. The image enhancement will be done by the contrast been increased. The followed by image smoothening is done by techniques of filtering. Different filtering techniques involve like median filter, average filter, Gaussian filter etc.

C. Image Segmentation

Segmentation of image means partitioning of image into several parts of same features or having some similarity. The segmentation can be done using different methods available like otsu' method, converting RGB image into HIS model, k-means clustering etc. The K-means clustering method is used for classification of object based on a set of features

into K number of classes. The object classification is done by minimizing the sum of the squares of the distance between the object and the corresponding cluster.

D. Feature Extraction

Extraction of features from image plays an important role for identification of an object. After the image segmentation the effected or diseased portion of the image is extracted. In several application of image processing feature extraction is used based on Colour, texture, shape, edges, morphology are the features which can be used in plant disease detection. Colour features are extracted by various methods, such as Colour moments, Colour histogram and Colour structure descriptor for extraction of texture features Grey Level Co-occurrence Matrix (GLCM) method is used.

E. Classification and Detection

Finally, classifiers are used for the training and testing of the datasets. These classifiers may be support vector machine (SVM), k-nearest neighbour, neural network, fuzzy logic based etc. These methods are used to classify and detect the leaf diseases [4].

1.2. Machine learning

Machine learning is used to teach machines how to handle the data more efficiently. Sometimes after viewing the data, we cannot interpret the pattern or extract information from the data. In that case, we apply machine learning. With the abundance of datasets available, the demand for machine learning is in rise. Many industries from medicine to military apply machine learning to extract relevant information. The purpose of machine learning is to learn from the data. Many studies have been done on how to make machines learn by themselves . Many mathematicians and programmers apply several approaches to find the solution of this problem. Some of them are demonstrated as below [5].

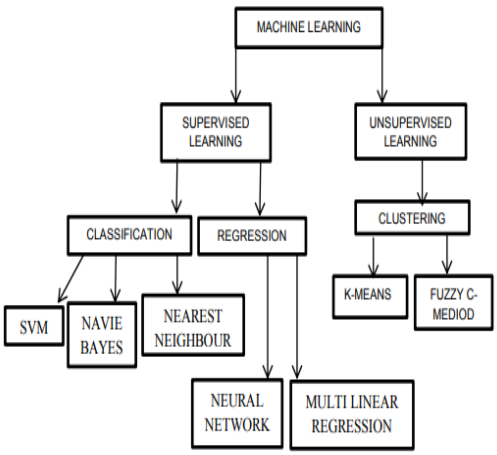

Figure1: Machine Learning

A. Supervised Learning The supervised machine learning algorithms are those algorithms which needs external assistance. The input dataset is divided into train and test dataset. The train dataset has output variable which needs to be predicted or classified. All algorithms learn some kind of patterns from the training dataset and apply them to the test dataset for prediction or classification [5]. The workflow of supervised machine learning algorithms is given in Fig. 2. Three most famous supervised machine learning algorithms have been discussed here.

1) Decision Tree: Decision trees are those type of trees which groups attributes by sorting them based on their values. Decision tree is used mainly for classification purpose. Each tree consists of nodes and branches. Each node represents attributes in a group that is to be classified and each branch represents a value that the node can take [5]. The pseudo code for Decision tree is described in Fig. 4; where S, A and y are training set, input attribute and target attribute respectively.

2) Naive Bayes: Naive Bayes mainly targets the text classification industry. It is mainly used for clustering and classification purpose [6]. The underlying architecture of Naive Bayes depends on the conditional probability. It creates trees based on their probability of happening. These trees are also known as Bayesian Network.

3) Support Vector Machine: Another most widely used state-of-the-art machine learning technique is Support Vector Machine (SVM). It is mainly used for classification. SVM works on the principle of margin calculation. It basically, draws margins between the classes. The margins are drawn in such a fashion that the distance between the margin and the classes is maximum and hence, minimizing the classification error

B. Unsupervised Learning: The unsupervised learning algorithms learn few features from the data. When new data is introduced, it uses the previously learned features to recognize the class of the data. It is mainly used for clustering and feature reduction.

1) K-Means Clustering: Clustering or grouping is a type of unsupervised learning technique that when initiates, creates groups automatically. The item which possesses similar characteristics are put in the same cluster. This algorithm is called k-means because it creates k distinct clusters. The mean of the values in a particular cluster is the centre of that cluster.

2) Principal Component Analysis: In Principal Component Analysis or PCA, the dimension of the

data is reduced to make the computations faster and easier. To understand how PCA works, let's take an example of 2D data. When the data is being plot in a graph, it will take up two axes. PCA is applied on the data, the data then will be 1D.

C. Semi - Supervised Learning: Semi – supervised learning algorithms is a technique which combines the power of both supervised and unsupervised learning. It can be fruit-full in those areas of machine learning and data mining where the unlabelled data is already present and getting the labelled data is a tedious process [5].

2. Crop Leaf Disease Classification:

2.1 Bacterial Disease Symptoms : The disease is mainly referred to as "bacterial leaf spot" Symptoms begin as small, yellow green lesions on young leaves which usually seen as deformed and twisted, or as dark, water-soaked, greasy-appearing lesions on older foliage.

2.2 Viral Disease Symptoms: All virus disease presents some degree of reduction in production and the length of life of virus infected plants is usually short. The most accessible symptoms of virus-infected plants are usually those appearing on the leaves, but some viruses may cause strike on the leaves, fruits and, roots. The Viral disease is very difficult to diagnose. Leaves are seen as wrinkled, curled and growth may be stunted due to the virus [6].

2.3 Fungal: It is a type of plant pathogen and is responsible for the serious plant diseases. Most diseases in vegetable are caused by fungi. They damage plants by killing cells. The main Source of fungal disease is the infected seed, soil, crop, and weeds. It is spread by the wind and water and through the movement of contaminated soil, animals, workers, machinery, tools. In, initial stage it appears on lower or older leaves as water-soaked, grey-green spots. Later, these spots darken and then white fungal growth spread on the undersides. In downy mildew yellow to white streak on the upper surfaces of older leaves occurs. These areas are surrounded with white to Grey fungal growth on the undersides. In leaf-late blight, water-soaked lesions are present. Initially, it seen as a small brown or black spot on the under leaves later it expanded over the whole region. Early blight is a fungal disease caused by the fungus Alternaria solani. In the early time, it shown on the lower side, older leaves like small brown spots with concentric rings that form a bull's eye pattern. When disease rate increases, it spreads outward on the leaf surface causing it to turn yellow[6].

2.4 Disease Due to Insects: White flies, Leaf Insects

3. Literature Review

Prashar et al. [7] proposed a method having capable for recognition of visual features of the images and those images can be retrieved from the data set having common diseases. 3D matrixes were used to load the image that defines the images in RGB plane. Images were first resized and converted to grey scale and Gaussian filter were used to remove the noise from the images. For feature extraction colour oriented feature was used and SVM classifier was used for classification. The obtained accuracy was greater than 85%.

Rothe et al. [2] proposed a method for recognition of several cotton leaf diseases that affected on production of cotton. At an initial stage the digital camera was used to collect the images and u-sharp filter were used for pre-processing which sharpens the images. Edges of images were enhanced and Otsu thresholding was used for segmentation of the images. Mean, Standard Deviation were used for colour feature extraction from RGB planes. shape features like area, sharpness, perimeter, Eigen value and aspect ratio were computed.to classify the diseases SVM classifier was applied and an average obtained accuracy were 90% .

Priya et al. [3] proposed a methodology for leaf recognition and classification. In the preliminary phase, the input images were converted to grey scale form and smoothening was done accordingly. For removal of noise laplacian filter were applied and digital morphological features were retrieved from it. The minimization of the input image was done using Principle component analysis which was further given to SVM classifier. Performance calculation was done based on execution time taken and the accuracy.

Sarangdhar et al. [8] have proposed the system, useful for detecting and controlling the disease especially for the cotton crop leaf. Support vector Machine (SVM) classifier is proposed which is used to classify and identify cotton crop leaf diseases. After analysis is done of the disease information is been provided to farmer regarding the disease with prevention remedies. They have developed an Android application through, which farmers get help in terms by displaying the soil parameters like moisture, humidity and its temperature. This system of disease detection is interfaced with the Raspberry Pi. The overall accuracy of their proposed system was around 83.26%.

Joshi et al. [9] have presented a new method which is useful for detection and classification of rice disease. Rice diseases are of four types which include rice blast, rice sheath rot, rice bacterial blight, and brown rice spot. These rice diseases are identified and classified. Several features were also extracted such as shape of rice. MDC (Minimum Distance Classifier) and KNN (k-Nearest Neighbour classifier) approaches were used for the combination and classification of the extracted features. The overall accuracy of their work is around 87.02% incase of KNN and around 89.23% in case of MDC

Reseacher Name	Techniques/Methods/ Algorithms	Results/Solutions/Conclusions
Prashar et al.	Gaussian filter, Histogram of oriented Gradients (HoG), SVM	Accuracy achieved was greater than 85%.
Rothe et al.	Un sharp filter, thresholding, Using Hybrid Features: mean, variance, standard algorithms. deviation, area, sharpness, Eigen value, perimeter, aspect ratio and SVM.	Average Accuracy 90% achieved
Priya et al.	Geometric features: Diameter, physiological length, leaf area, physiological width, physiological length and width, Vein features. PCA, SVM	k-NN Flavia Dataset 78% Real Dataset 81.3% SVM Classification Flavia Dataset 94.5% Real Dataset 96.8%
Sarangdhar et al.	SVM (Support Vector Machine)Android App Raspberry Pi	The overall accuracy of their proposed system was around 83.26%.
Joshi et al.	MDC (Minimum Distance Classifier) and KNN (k-Nearest Neighbour classifier)	The overall accuracy of research work was around 89.23% in case of MDC and 87.02% in case of KNN.
Moghadam et al.	SVM, Machine learning, and hyper spectral imaging	Achieved 90% accuracy in differentiating between healthy and inoculated plants.
Singh et al.	Gaussian filter, Histogram of oriented Gradients (HoG), SVM.	95.7% Accuracy was achieved
Padol et al.	K-means Clustering, Features: variance, skewness, Kurtosis, mean, maximum probability, correlation. Linear SVM.	The overall average accuracy achieved by the system was 88.89%.

Moghadam et al.[10] proposed a technique using hyper spectral imaging and machine learning to detect the Tomato Spotted Wilt Virus (TSWV) in the capsicum plants. First, the features are extracted based on probabilistic models, vegetarian indices, and full spectrum. Based on these features, state vector machine (SVM) classifier was trained for differentiating between the inoculated and healthy plants. The result shows about 90% accuracy using the proposed technique. This work can be extended further based on the dynamic topic models to find the dynamic nature of plants over the time. New classification techniques can be applied to enhance the accuracy of the work. The 90% of accuracy may or may not detect the test image accurately.

Singh et al. [11] described a methodology using an digital camera that captured the images based for the detection of plant leaf diseases. Pre-processing was done by clipping the interested region of the image and enhancing it to improve the contrast. After pre-processing the green pixels in the image were masked and removed for further processing. Segmentation was done using genetic algorithm. For feature extraction colour co-occurrence was used which considers both colour and texture features of the image. SVM classifier was used for classification and 95.7% accuracy was achieved.

Padol et al. [12] had proposed a technique for grape leaf disease detection using SVM classifier. They have collected 137 grape leaf images as input and used Gaussian filter to remove the noise from the image. K-means clustering algorithm was used to segment the image and colour, texture features were extracted from it. Using SVM classifier the input images were classified into downy mildew and powdery mildew depending on the feature values. SVM provides 93.33%, 83.33% accuracy for downy and powdery mildew respectively. The overall average accuracy achieved by the system was 88.89%.

4. Results and Discussions

Techniques used for disease detection in plants and their obtained results

5. Conclusion:

This Review paper focused on different image processing techniques that are used for disease detection in crop. Naked eye disease detection is not so effective when compared to image processing and its several techniques. The several techniques used for disease detection of crop leaf are NN, BPNN, Histogram, SVM, SGDM, K-Means Clustering, fuzzy logic etc. Using these techniques disease can be analysed in at very initial level. The review paper proposed that the disease detection techniques have good results with good ability to detect disease in crops.

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A STUDY OF DIGITAL VIDEO COMPRESSION TECHNIQUE

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ABSTRACT: ***Video compression is done by removing dull images, remove sounds from a video.Video compression will remove all such data to decrease the video file size. When a video is compressed, its original format is changed into a different format.***

Digital video compression technologies have become an fundamental part of the creation, communication and consumption of visual information.

In this video compression techniques are used. The paper explains the basic concepts of various video code design and which includes the recent standard BMP,TIFF. The MPEG video coding standard has been established to achieve significant developments over MP3 standards in terms of compression. Though the basic coding framework of the standard is related to that of the existing standards, JPEG introduces many new features.

The several application scenarios of video communication show very different best working points and these working points have moved over time as the constraints on complexity have been eased by Moore's law and as higher data-rate channels have become available.

KEYWORDS:
JPEG,MPEG,PNG,GIF,BMP,TIFF,Features

INTRODUCTION:

Digital video communication is a fast developing field, generally the progress made in video coding techniques. This progress has directed to a high number of video applications, such as High-definition Television (HDTV), videoconferencing and real-time video transmission over multimedia.

Data transfer of uncompressed video over digital networks requires very high bandwidth, to avoid this problem, a series of techniques called video compression have been derived to reduce the number of data required to represent a digital Video data while maintaining video quality. Their ability to perform this task is quantified by the compression ratio.

Data compression is possible because images are same data intensive and contain a large amount of redundancy which can be removed by achieving particular kind of transform, with a modifiable linear phase to de-correlate the image data pixels.

VIDEO COMPRESSION TECHNIQUES

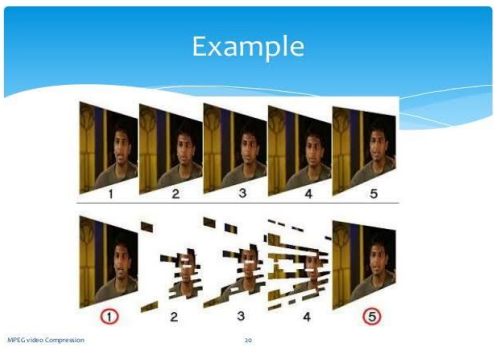
1.JPEG:

For single-frame image compression, the industry common with the greatest acceptance is JPEG (Joint Photographic Ex-perts Group). JPEG consists of a minimum implementation(called a baseline system) which all implementations are re-quired to support, and various extensions for specific applications. JPEG has obtained wide acceptance, largely determined by the growth of image controls software which generally includes the JPEG compression algorithm in software form as part of a graphics sample or video editing package. The image frame consists of three 2-D patterns of pixels, one for brightness and two for color. Because the human eye is less affected to high frequency color knowledge, JPEG calls for the coding of color information at decrease analysis compared to the brightness information. In the pixel format, there is a generally large amount of low-spatial frequency information and partially small amounts of high-frequency information.

2.MPEG:

MPEG is the “Movable Picture Experts Group”, working below the joint direction of the International Standards Organization (ISO) and the International Electro-Technical Commission (IEC). This group works on standards for the coding of moving pictures and similar audio. MPEG involves fully encoding only key frames over the JPEG algorithm and computing the motion changes between these key frames.

In MPEG compression results from intraframe compression in which excesses between pixels in the same video frame are used to reduce the amount of data and interframe compression in which comparison between pixels in adjacent frames are used to compress the data. In MPEG, most of the compression is directly interframe compression.



3**.PNG:**

PNG, which can be defined name as "ping" is a compressed raster graphic form. It is commonly used on the Web and it is a popular choice for application graphics.The PNG format was introduced in 1994, PNG includes several benefits of both formats.PNG images use lossless compression.The PNG format also supports 24-bit color the PNG form supports an alpha channel, or the "RGBA" color space. The alpha channel is added to the three standard color channels (red, green, and blue, or RGB) and produce 256 levels of clarity. the PNG form allows Web developers and icon designers to change an image to a transparent background rather than a specific color. A PNG with an alpha channel can be placed on any color background and supports its original images, even around the edges.

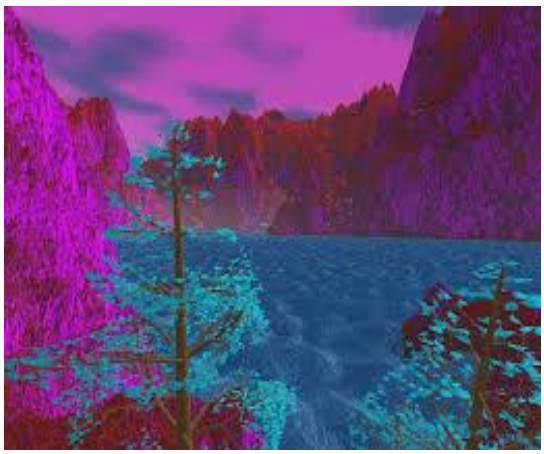
4.GIF:

Stands for "Graphics Interchange Format." GIF is an image file format generally used for images on the web and sprites in software programs. GIFs uses lossless compression that does not reduce the quality of the image. GIFs store image data using indexed color, meaning a standard GIF image can contain a maximum of 256 colors.

"GIF 87a," was published by CompuServe in 1987. In 1989, CompuServe released an updated version of the format called "GIF 89a." In GIF,when we use a custom color palette and involving dithering to smooth out the image, photos saved in the GIF format often look grainy and visionary. GIFs are better suited for buttons and banners on websites, since these types of images do not require a lot of colors.

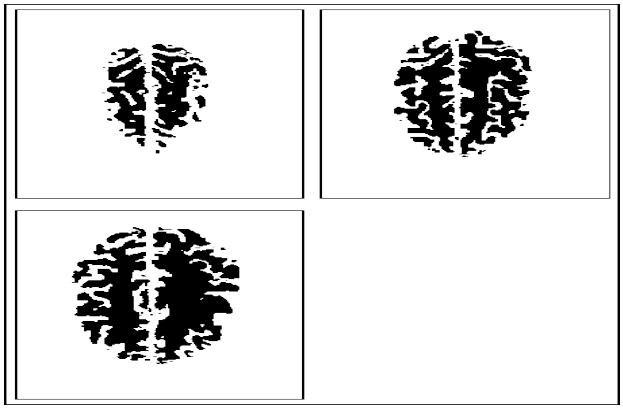
5.BMP:

Short for "Bitmap." It preserve be marked as "bump," "B-M-P," or just a "bitmap picture."
The BMP format is a generally used raster graphic design for save image files. It was introduce on the Windows proposal, but is now accepted by many program on both Macs and PCs.
The BMP format supplies color data for each pixel in the image not including any density. For case in point, a 10x10 pixel BMP image will include color data for 100 pixels. This method of store image in arrange allows for hard, high-class graphics, but also produce large file sizes. The JPEG and GIF formats are also bitmaps, but use image compression algorithms that can extensively reduce their file size. For this reason, JPEG and GIF images are used on the Web, while BMP imagery are often used for printable imagery.
File Extension: .BMP
The BMP folder arrangement is gifted of accumulate two-dimensional digital imagery equally monochrome as well as color, in different color depths, also optionally by data compression, alpha channels, also color profiles. The Windows Metafile(WMF) condition cover the BMP folder layout.



6.TIFF:

TIF or TIFF is an picture layout use for contain high excellence graphics. It stand designed for "Tagged Image File Format" otherwise "Tagged Image Format". The arrangement was twisted through Aldus Corporation other than Adobe acquire the arrangement shortly and completed succeeding update in this arrangement. TIF file is gifted of investment together lossy jpeg compression as well as lossless picture information. It preserve also hold vector base graphics data. TIF file arrange is extensively support in image control application. For that it's a extremely accepted image design among Graphic artist, Photographers, and publish establishment. PaintShop for is single of the mainly accepted application available for managing TIF imagery.



FEATURES:

1.JPEG is not well suited for line drawings and other documented or iconic graphics, where the sharp differences between adjacent pixels can cause evident artifacts.

2.The JPEG standard includes a lossless coding mode, but that mode is not maintained in most products.as the typical use of JPEG is a lossy compression method, which decreases the image fidelity.

3. To prevent image information loss during consecutive and dull editing, the first edit can be saved in a lossless format, then modified in that format, then finally published as JPEG for distribution.

4.MPEG is basically designed to allow moving pictures and sound to be fixed into bitrate or a compressed disc.it is used on video CD SVCD and can be used for low quality video on DVD video.

5.MPEG aimed at combination including streaming video applications on mobile devices.

6. PNG file contains a bitmap of indexed colors and **uses** lossless compression, similar to a GIF **file** but without copyright limitations. It is **used to** store graphics for network images.

7.the GIF of storing several images in one file, convoyed by control data, is used mostly on the web to produce simple animation.

8. most BMP files have a properly large file size due to lack of any compression, many BMP files can be largely compressed with lossless data compression algorithms such as ZIP because they contain redundant data. Some formats, such as RAR, even include routines specifically directed at efficient compression of such data.

9.TIFF is a flexible, adaptable file format for control images and data within a single file, by containing the header tags describing in the images geometry.

CONCLUSION:

The first work began on video compression standards that would ultimately result in MPEG. The Motion Picture Experts Group, in cooperation with the International Organization for Standardization (ISO), created multiple standards for video compression. When peak signal to noise ratio (PSNR) performance is used to compare original footage with video compressed with JPEG , the degradation is close to visually lossless and deviation from the original is low. The PSNR of footage encoded with MPEG, however, can vary greatly from picture to picture due to different methods of prediction. GIF uses lossless compression, meaning that you can save the image over and over and never lose any data. The file sizes are much smaller than BMP, because good compression is actually used, but it can only store an Indexed palette.

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Self Drive Car: New Era in Autonomous Robotics

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ABSTRACT: The large consumption of Internet of Things (IOT) is actually enabling Smart City projects and initiatives all over the world. Objects used in daily life are being set with electronic devices and protocol suites in order to make them interconnected and related to the Internet. According to a current Gartner study, 50 billion related objects will be deployed in smart cities by 2020. These connected objects will make our cities smart. However, they will also open up risks and privacy issues. As different smart city initiatives and projects have been launched in recent years, we have witnessed not only the expected benefits but the risk introduced. We describe the recent and future trends of smart city and IOT. We also discuss the communication between smart cities and IOT and explain some of the technologies behind the evolution and development of IOT and smart city. Finally, we discuss some of the IOT weakness and how they can be addressed when used for smart cities. Just like Tel Aviv –The First smart city in world.

KEYWORDS: Internet of Things (IOT), Smart cities, Smart city IOT, Information and communication (ICT) etc.

I.INTRODUCTION

In today's time, leveraging IOT solutions for keen cities and associated technology helps encourage economic growth, progress infrastructure & environment, boost transportation systems and optimize expenses of managing public assets. Read on to study about the numerous modules of Smart City and their influence in the IOT era.

To survive with the growing population, hyper-urbanization, and globalisation as well as to certify economic and environmental stability, cities are now aiming on becoming smart cities. Smart City is a concept of utilizing technologies and associated data sensors to improve and become powerful in terms of infrastructure and city operations. This includes watching and handling of public assets, transportation organisations, citizens, power plants, water deliveries, information systems, civil bodies, and additional community facilities. As per the new study from Navigant Research, the global market for smart city services is expected to reach $225.5 billion within the next period.

Connected technologies and IOT keys for smart cities play important roles in converting cities into smart cities. Implementing a smart city with IOT and connected technology helps to improve the value, performance, and interactivity of urban facilities, optimize resources and decrease charges.

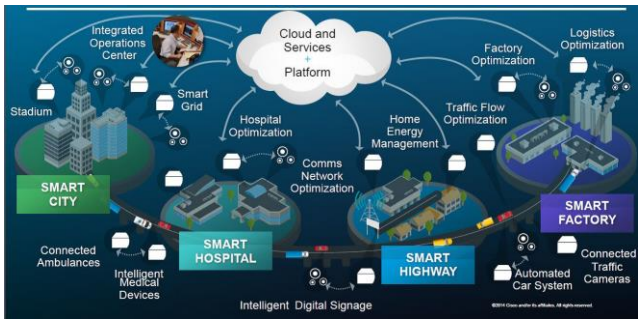
What is Internet of Things?

The Internet of Things is the theory of connecting any device to the Internet and to other connected devices. It is a system of interrelated computing plans, mechanical and digital skills, objects, animals or people that are provided with high-class dependent and the ability to communication data over a network necessaries human-to-human or human-to-computer interface.

While you're perhaps familiar with the idea of IOT, what is it, actually? Probabilities are good that you can think of several things that attach to make this network, but what is the fundamental concept here? Actually, there is no approximately accepted definition of what the Internet of Things is.

Forbes has one of the more apt descriptions of IOT, though, which is the concept of fundamentally attaching any device with an on and off switch to the Internet (and/or to each other). This includes the whole thing from cell phones, coffeemakers, washing machines, headphones, lamps, wearable devices and nearly anything other you can think of. This also applies to modules of machines, for example, a jet engine of an airplane or the drill of an oil rig.

From this, we can see that the Internet of Things isn't so much a physical thing or even a standard process. Slightly, it's an knowledge and a somewhat imprecise one at that.



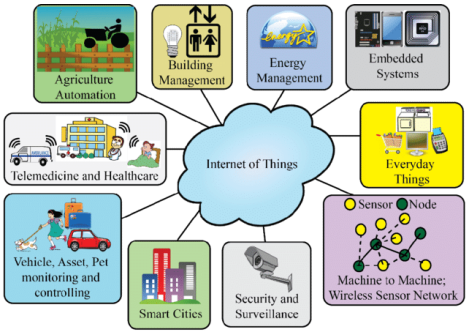
History of IOT: The Internet of Things is 16 years old. But the actual idea of related devices had been around longer, at least since the 70s. Back then, the idea was repeatedly called "fixed internet" or "omnipresent computing". But the definite term "Internet of Things" was coined by Kevin Ashton in 1999 during his work at Procter & Gamble. Ashton who was operational in supply chain optimization, wanted to attract senior management's attention to a new exciting technology called RFID. Because the internet was the hottest new tendency in 1999 and because it some how arranged sense, he called his presentation "Internet of Things".

II.What is Smart Cities

The best definition of a smart city arises from the Institute of Electrical and Electronic Engineers (IEEE) Standards Association. Institute of Electrical and Electronic Engineers says, "As world urbanization continues to improve and the world population expected to dual by 2050, there exists a better demand for intelligent, maintainable environments that decrease environmental effect and o er citizens a high-quality lifecycle. A smart city carries collected technology, government and civilization to allow a smart economy, smart suppleness, a smart environment, smart people, and smart alive and smart governance." Obviously, that's less than concrete. The another definition of the smart city.

Because of this ambiguity and difference, we need to turn to definite use cases to decide what defines a smart city. There are quite a limited ways in which this sort of technology is being utilized nowadays around the world, including the following:

- Sensors constructed into bridges to sense things similar to degradation and the effect of seismic powers at work.
- Sensors constructed into roadways to sense things similar subsidence and wear and tear, as well as traffic flow.
- Sensors built into buildings to sense things like the power of wind, foundation subsidence, seismic activity, and other.
- Sensors within the inside of buildings to sense the presence of people within rooms, and thus control the use of lighting, warming and air, and other systems to limit energy expenditure when it is needless.
- Sensors at entrances to provide facial recognition for superior security within apartment buildings, commercial buildings, government workplaces, and other.



III.ADVANTAGES OF USING IOT IN SMART CITIES

- Lower costs of goods. If we spread Smart City outside government and into commerce, we could assume that if, for instance, 7/11 convenience stores were to implement smart restocking, whereby they need to keep fewer inventories in the store, because they know more precisely when stocks will run out. This allows them to have smaller store footprints, greater product selection, less products going to waste, etc., all of which should lead to lower cost.

- Potentially, better governance. If we extend Smart City description to somewhat like voting (i.e. block chain-enabled voting that prevents voter fraud and allows for direct democracy), then we could have governance that is more accountable to the people. This type of tools could also be used to rate public services.

- Lower crime. Smart Cities might be able to have, for instance, a network of CCTV cameras with facial recognition technology that can recognise likely criminals before they strike, or take down criminals with better precision after crimes have been committed.

- Everything has the potential to be automated.

IV.DISADVANTAGES OF USING IOT IN SMART CITIES

- Very limited privacy. If there are cameras on each corner, it becomes very tough to go anywhere without being see, and if those cameras are equipped with facial recognition technology, being seen means becoming known. The concept of personal secrecy is radically changing, and we have not prepared adequately for it.

- With everything being tracked, there becomes a pretty big concentration of power. Envision, for instance, a city with the aforementioned network of CCTV cameras. Politicians with control of the system could track their political opponents, governments could suppress dissent, there is a huge amount of trust being put into a governmental organization that may not be as accountable as they seem.

- Limited potential for innovation/creativity. This is not necessarily a guarantee, but I believe that cities that stifle people's abilities to behave 'outside the box' also stifle their ability to think outside the box.

- Potentially, overreliance on electronics/'the network'. If a whole city is dependent on some AI that is running the show, again, the concentration of power is significant. This is perhaps something of concern.

In general, as cities need to compete harder to attract the best talent, being a truly "Smart City" could be a compelling differentiator.

V.APPLICATIONS OF IOT IN SMART CITIES

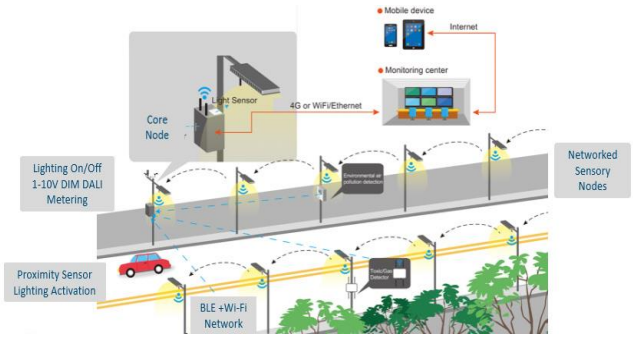
The many application of Smart Cities are as follows:

1.Smart Infrastructure: The global bazaar for smart urban infrastructure in smart cities, consist of advanced associated streets, smart parking, smart lighting, and additional transportation originations. Here's how they work:

- **Smart Lighting:** With smart lighting, city authorities can save real-time tracking of lighting to confirm optimized illumination and send demand-based lighting in different regions. Smart lighting also aids in daylight harvesting and save energy by dimming out areas with no occupancies For e.g. car parks lots can be dimmed during work hours and when a car is incoming, it will be identified and appropriate sectors can be illuminated, while others can be kept at diffused setting.

For Example: Connected Streets: Connected and smart streets are capable of gaining data and transporting information and facilities to and from millions of devices, which contains information about traffic, road blockages, roadworks, etc. This aids in the efficient management of resources and people to improve public transportation and the urban landscape.

- **Smart Parking Management:**Smart parking management system can be used to detect the vacant place for a vehicle at different public places. Smart Parking's In-Ground Vehicle Finding Sensors are core skills, playing a main part in the Smart Parking solution that is revolutionizing how drivers in the shopping mall and city centers can find an available parking space. This type of system is used in indoor parking spaces and is more proposed a wireless sensor network deployed in indoor car parks ... parking space, sending information, including real-time display, to the ... The status of each space is transmitted by a sensor node that sends this information via .... Smart Parking reduces congestion, decreases vehicle emissions, lowers enforcement costs and cuts driver tension. For effective deployment of smart parking skills, each device required to have a reliable connectivity with the cloud servers.

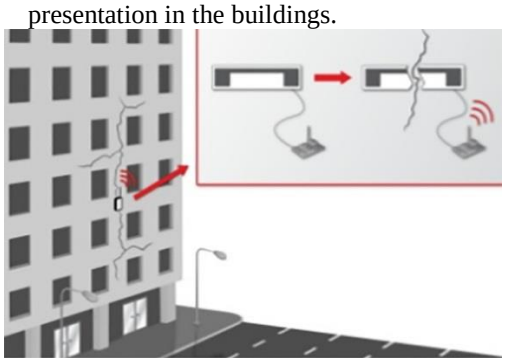


- **Connected Charging Stations:** Smart infrastructure also contains implementing charging stations in parking systems, city fleets, malls and buildings, airports, and bus stations through the city. Electronic vehicle (EV) charging raised area can be integrated with IOT to streamline the operations of EV charging and addresses the impact of the power grid.

2.Smart Buildings & Properties: Smart buildings develop different systems to confirm safety and security of buildings, maintenance of assets and total health of the neighbouring.

- **Safety & Security Systems:** These contain implementing remote monitoring, biometrics, IP surveillance cameras, and wireless alarms to decrease unauthorized access to buildings and chances of thefts. It also contains developing Perimeter Access Control to halt access to restricted areas of the property and identify people in non-authorized areas.
- **Smart Garden & Sprinkler System:** Smart sprinkler system synced with associated technologies and cloud can be used to water plants with the assurance that plants get the exact quantity of water. Smart garden devices can also implement tasks such as measuring soil moisture and phases of fertilizer, helping the city authorities to save on water bill, and save the grass from overgrowing in a convenient technique.

- **Smart Heating & Ventilation:** Smart heating and ventilation systems monitor numerous parameters such as temperature, pressure, vibration, humidity of the constructions and properties such as movie theatres, and historical monuments. Wireless sensor system deployment is the key to ensuring appropriate heating and ventilation. These sensors also bring together data to optimize the HVAC systems, improving their efficiency and presentation in the buildings.



3.Smart Industrial Environment: Industrial environments current unique opportunities for developing uses associated with the Internet of things and associated skills which can be developed in the following areas:

- **Forest Fire Detection:** Helps in the monitoring of combustion gases and preemptive fire situations to define alert zones.
- **Air/Noise Pollution:** Helps in controlling of CO2 emissions of factories, pollution emitted by cars and toxic gases created on farms.

- **Snow Level Monitoring:** Helps in finding the real-time situation of ski tracks, allowing safety corporations for avalanche prevention.
- **Landslide and Avalanche Avoidance:** Helps in the observing of soil moisture, earth density, as well as vibrations to classify dangerous patterns in land situations.
- **Earthquake Early Detection:** Helps in identifying the chances of tremors by developing distributed controls at specific places of tremors.
- **Liquid Presence:** Helps in identifying the presence of liquid in documents centers, building grounds, and warehouses to avoid breakdowns and corrosion.
- **Radiation Levels:** Helps in the circulated measurement of radiation levels in nuclear power locations surroundings to create leakage alerts.
- **Explosive and Hazardous Gases:** Helps in identifying gas levels and leakages in chemical factories, industrial environments, and inside mines.

4. Smart City Services:IOT key for smart city contain services for public safety and emergencies. Below are the key areas where IOT and associated technologies can help:

- **Smart Kiosk:** Smart kiosks shows an important role in providing different city facilities to the public such as Wi-Fi services, 24×7 IP surveillance cameras and analytics, Digital signage for advertisement and public announcements. In some cases, free video calling and free mobile charging position, as well as environmental sensor integration can also be implemented. Smart kiosks also offer information about restaurants, retail stores, and events in the immediate area. It can also offer mapping for visitors and can sync with smartphones to give extra data as needed.
- **Monitoring of Risky Areas:** Sensors (cameras, street lights) and actuators for real-time monitoring can be implemented in risky areas or areas prone to accidents. Upon identifying any crime, or mishap, these sensors can alert the citizens to avoid such areas temporarily.
- **Public Security:** IOT sensors can be installed at public organizations and houses to care for citizens and provide real-time data to fire and police departments when it identify a theft.
- **Fire/Explosion Management:** Smart fire sensors can identify and automatically take actions based on the level of severity, such as identifying false alarms, informing firefighters and ambulance, blocking off nearby streets/buildings on the requirement, aiding people to evacuate, and coordinating rescue drones and robots.
- **Automatic Health-Care Dispatch:** Smart healthcare devices can be implemented at public places to offer 24/7 health care for patients like dispensing medicines and drugs to patients. These devices can also be used to call an ambulance to pick up the patients in cases of emergencies.

5.Smart Energy Management*:*Here's how IOT solutions for smart cities can be executed for smart energy management:

- **Smart Grid:** Smart grids are digitally examined, self-healing energy systems that transport electricity or gas from generation sources. Smart grid solutions can be across industrial, residential as well as in communication and distribution projects. Several IOT solutions like gateways can be used to achieve energy preservation at both the communication level and consumer level. For e.g., gateways can offer a broader view of energy distribution patterns to utility companies with high connectivity and real-time analytics. Also, it improves a Demand-Response mechanism for the utility providers to optimize energy distribution based on the consumption patterns.

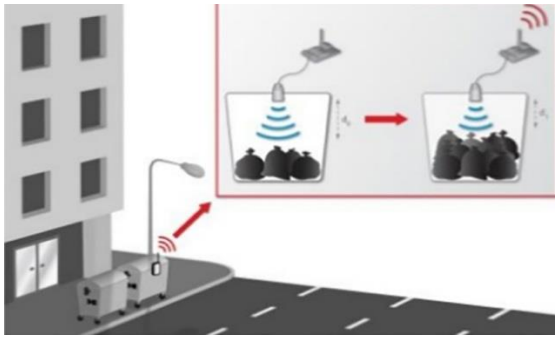
- Solving the Challenges in Smart Energy Meter Deployment:

Smart Meters: Smart meters can be used in residential and industrialized metering sectors for electricity and gas meters where there is a requirement to detect the real-time information on energy usage. Consumers and utilities with clever meters can monitor their energy consumption. Moreover, energy analytics, reports, and public dashboards can be also accessed over the internet using mobile uses integrated with these smart meters.

6. Smart Water Management:IOT and associated devices enable smart water management in the following ways:

- **Potable Water Monitoring:** Monitors the value of tap water in the cities.
- **Chemical Leakage:** Detects leakages and wastes of factories in rivers.
- **Swimming Pool Remote Measurement:** Controls the swimming pool situations remotely.
- **Pollution Levels in the Sea**: Controls the occurrence of leakages and trashes in the sea.
- **Water Outflows:** Identify of a liquid presence outside tanks and pressure variations along pipes.
- **River Floods**: Monitors H2O level variations in rivers, dams, and reservoirs.

7. Smart Waste Management:Smart solutions for tracking trashes help municipalities and waste facility managers the capacity to optimize wastes, decrease operational costs, and improved address the environmental issues associated with an inefficient waste collection.



Implementation of a smart city comes with enormous opportunities to transmute the lives of people and increase the overall city infrastructure and operations. Smart sensor networks, Internet of Things (IOT) and associated technologies are the important solutions for smart city implementation.

VI.CONCLUSION

Smart technologies can provide solutions for cities by aiding them save money, decrease carbon emissions and manage traffic streams. But the complexity of the agenda is hindering its progress. It includes a large number of stakeholders each having their own vision of what a smart city should be; most of the debate gets bogged down on trying to understand what 'smart' means rather than focusing on how it can aid cities meet their goals. Moreover, since the market for smart technologies is relatively new, it requires new business models and ways of working which are yet to be established and implemented.

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Identification of plant using different image processing techniques

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ABSTRACT: ***Plants are essential for living being. They help us to survive on earth. Huge numbers of plants are available in nature. Some plants are herbs which is most important for humans. Hence it is very important task to identify feature and useful properties of plants. There are many features of plants like leaves, flowers, fruits, seeds which can be used to identify plant. In this approach leaf is used as a characterizing feature of plant. Leaves can be easily obtained hence plant identification algorithm is implemented by using various image processing techniques.***

Keywords: *Plant identification, leaf shape, leaf size, image processing, edge detection.*

Introduction

In this paper we introduce an algorithm in which firstly preprocess image of leaf using filter to remove noise from image, detect edge of image using Sobel operator and resize image then perform matching of images with dataset images using image subtraction and histogram matching technique. If matching is failed rotation of image is performed to match the image in different angle and direction. . The system is most useful for educational purpose. Using this student can easily recognize plants of fruits and flowers from their leaf shape.

Literature Review:

Several methods have been introduced for plant identification. Most widely used method based on based on features of plant such as leaf flower, stem, fruit, and seed. The classification of plants has been used various Artificial Intelligence methods such as the Probabilistic Neural Network (PNN), Back Propagation Neural Network, Artificial Neural Network (ANN). The feature of leaf, most commonly extracted was leaf length, width, area and perimeter. It was observed that the result of PNN is faster with accuracy of 90.321% [1].

It could be seen that identification of color could be affected during the image acquisition process, climate changes or nutrients. It could also be seen that classification base on flowers and seedlings were difficult because of its complex 3D structure. The area of the leaf was calculated by counting the number of white pixels on the smoothed image of the leaf [2].

Leaf veins and shapes are used to recognize plant [3] as leaf color is affected by seasons. Also the accuracy is affected by when the user needs to select the end of a leaf for the systems base on leaf contour extraction. The system proposed by K. Lee and K. Hong the leaf contour is extracted then the difference between grayscale image and opening operation performed on grayscale image is converted to binary image to obtain vein image. Extraction of main vein is performed by projection histogram in the horizontal and direction of leaf is extracted by measuring the histogram in vertical.

The canny edge detection histogram was used to calculate the edge histogram. The differences in area, colour and edge histogram were calculated for test images and each database images. The average of these three values was calculated and the pair with the least difference was the identified plant.[4]

Leaf shape has been a common feature that was used to identify plants also some basic features like leaf length, width area and perimeter were used to extract values of aspect ratio, form factor, rectangularity, eccentricity and convex hull information [5]. However leaf color and texture were considered to increase accuracy of algorithm [6].

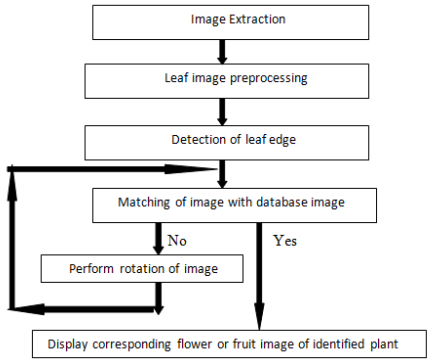
The plant recognition system was developed based on shape features and minimum Euclidean distance [7]. The algorithm consists of image pre-processing, feature extraction and matching using minimum Euclidean distance.

Proposed system:

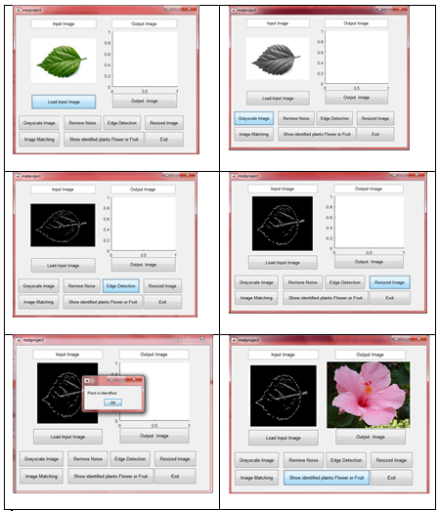
In proposed system we use dataset which consist of leaf images of some fruits and flower plants also includes the images of corresponding fruits and flowers. As matching becomes successful the appropriate fruit or flower image is displayed.

Software:

The image processing software Matlab 2017a for 64 bit system is used for the entire development. Matlab provides GUI for integrating many image



processing functions such as image segmentation, color image component separation, object extraction, preprocessing operations, noise reduction and thresholding etc. GUI can make programs easier to use. Matlab image processing toolbox provides a comprehensive set of standard algorithms for image processing, analysis, visualization and algorithm development.



Results and Conclusion:

In the plant identification system initially preprocessing of image is performed in which the color image is converted to grayscale image, using low pass filter noise from image is reduced then to determine sharp feature of image edge is detected using Sobel operator. After that the matching of images is performed by using both histogram matching and image subtraction.

Accuracy of image is tested by following equation,

$$\text{Accuracy} = \frac{\text{Total no. of correctly identified images}}{\text{Total no. of leaf images}} \times 100$$

We test 50 leaf images out of which 5 images were failed to identify. Using the above equation we obtained 90% accuracy of the system. Result of System is affected due to age of leaf and images captured from different distances.

In future we extend this system to recognize plant species on more dataset.

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CLOUD COMPUTING IN EDUCATION MANAGEMENT

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ABSTRACT: ***Cloud computing is becoming increasingly fashionable in thin computing environment. Processing and Data storage use cloud environment is becoming a effort complete. Software as a Service (SaaS) has on many business applications as well as in our day to day life, we can simply say that this disrupting technology. Cloud computing can be understood since Internet-based computing, in which shared resources, software, and information are made available to devices on demand. It allows resources towards leveraged on per-use basis. It contracts cost and complexity of service providers by means of assets and operating costs. It allows users to access applications weakly. On behalf of user, this construct leads cloud service provider to feel software updates and cost of servers etc . For , cloud providers and consumers; availability, integrity, authenticity, confidentiality, and privacy are important concern.***

I.INTRODUCTION

The cloud computing has many reward with some limitations, both arise from the fact that all data and applications are located on the Internet. Since the data stored and applications on cloud can be access genuine time and online. It can be used in a variety of activities of daily life, including in education. Cloud computing is a model for enable appropriate, on-demand network contact to the shared pool of resources (e.g.servers, storage, applications and services), which can be quickly provisioned and at large with minimal administration efforts. As per the cloud model modified and the habit of it are the basis for declarable saleable value. For proper and casual education, many applications and services on the cloud the contact can be provided to students and teachers. The cloud computing allows for superior elasticity and mobility in the use of resources for teaching and learning with greater degree of association, statement and division of resources. It also creates a modified learning environment or virtual communities of teaching and learning.

II.REVIEW OF CLOUD SERVICE MODELS

The cloud computing has major deployment models such as Private, Public and Hybrid, but has a unlike features such as Client-Server Model, Grid Computing, Fog Computing, peer-to-peer computing. All the cloud placement models offer different services such as Infrastucture as a service (IaaS), Platform as a service (PaaS) and Software as a service (SaaS) (Alshuwaier & Areshe, 2012).

Cloud Service Models :

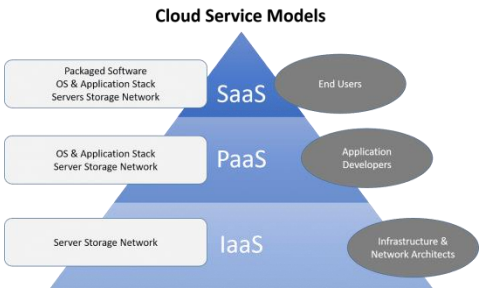


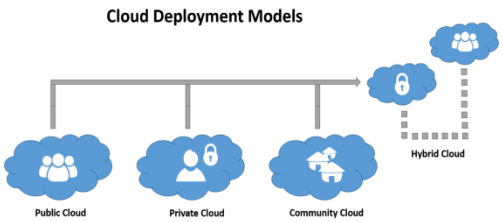
Figure 1: Cloud Service Models

Infrasturcture as a Service (IaaS): In this cloud service model the service worker hosts all the required required hardware and the Internet connectivity link. The user only share control for the virtual machine hosted on this hardware and the software's (include operating system) which goes on it. As shown in figure 1, this is the last / bottom layer and the software applications run on it. This service provides on demand Organization which is storage, computing, networking, management and support components (virtual servers). This organization is accessed via Internet, enabling groups' to move their data to cloud. Causing in to run or undoing there in house data centers. Each of these services can be deployed by organizations or individuals either as a private, public, mixture and community cloud.

Platform as a Service (PaaS): In this cloud service model the user provisions the application they wish to place, and the cloud service provider supplies all the modules required to run this application which is also called as application hosting. As shown in the figure 1, this is the mid layer between SaaS and IaaS. It provides operating systems and application development platform which can be retrieved and misused via the Internet. Developers use this platform to develop, test, deploy and host web applications as a service via the internet. E.g. providers of such platforms as a service are Google Application Engine, Microsoft Windows Azure and International Business Machine (IBM).

Software as a Service (SaaS): In this cloud service model the service provider provisions the software application and all the modules required for its execution. SaaS is planned to be a turnkey solution for the customers. Many web-ERP software solutions are hosted on the SaaS cloud and provide accounting and business Information to the user or customer. As shown in the figure 1, this is the top-most layer of cloud computing. This layer includes applications such as text processors, video editors and databases to be hosted by cloud service provider and is made gladly accessible to the users on request via Internet. Few examples of software as a service contain customer relation management (CRM), email messaging, Google Document (Doc) etc.

III.CLOUD DEPLOYMENT MODELS



Cloud computing deployment models are built on position. In order to know which deployment model would best constant your association requests, it is necessary to know the four deployment types.

Public Cloud: Public Cloud is a type of hosting which cloud services are sent over a network for public use.

- Customers dose not need any control over the location of the infrastructure.
- The cost is mutual by all users, and are also free or in the form of a permit policy like pay per user.
- Public clouds are excessive for groups that require handling the host application and the numerous applications users use.

Private Cloud: Private Cloud is a cloud infrastructure that is only used by one group.

- It gives organizations greater control over security and data which is safeguarded by a firewall and managed internally.
- It can be hosted inside or outside.
- Private clouds are great for groups that have high security demands, high management demands and uptime requests.

Community Cloud: Community Cloud is an infrastructure that is equally shared between groups that belong to a specific community.

- The community members usually share parallel privacy, performance and security concerns.
- An sample of this is a community cloud at banks, government in a country, or trading concerns.
- A community cloud can be managed and hosted inside or by a third party provider.
- A community cloud is good for groups that work on joint projects that need centralized cloud computing skill for managing, building and executing their projects.

Hybrid Cloud : Hybrid Cloud uses both private and public clouds, but can continue separate entities.

- Properties are managed and can be provided both inside or by outside providers.
- A hybrid cloud is great for scalability, flexibility and security.
- An example of this is an group can use public cloud to relate with customers, while protection their data secured through a private cloud.

IV.CLOUD FOR EDUCATION

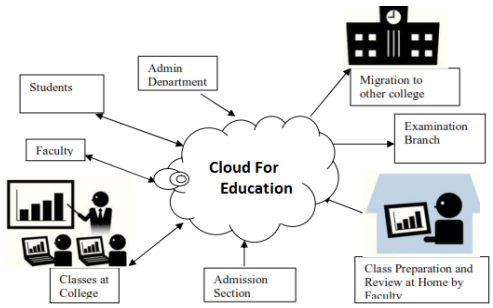
Diminished Costs: Cloud-based managements can help institutes reduction costs and accelerate the use of new inventions to meet developing educational needs. Students can utilize office applications without acquiring, install and stay up with the latest on their PCs. It similarly gives the instructors of Pay per use for a rare applications.

Easy Access: Lesson displays labs, grades, notes, and PowerPoint slides – attractive much anything high-tech that you use in training is effectively transferred.

Security: Your information, content, data, pictures – whatever you store in the cloud usually requires

verification (ID and secret word, for instance) – so it is not successfully available for anybody.

Shareability: Cloud computing unlocks up a universe of new believable results for students, particularly the individuals who are not attended well by customary training frameworks. With cloud computing, one can spread more and more varied, students.



Services attached to Education Cloud

No costly programming required: One of the highest main points of cloud-based registering is the software-as-an-Service (SaaS) model. Many product projects are presently accessible either free or on an comfort membership premise, which extensively transports down the expense of key applications for students.

Practice environmental safety: Education cloud will certainly reduce the carbon impression.

Easy Update: Roll out developments to a lesson and need to change it back? Don't worry about it. Cloud computing will extra various corrections and variants of a record with the aim that you can sequentially follow back the development of a thing.

In these and different ways, cloud computing is lessening costs, as well as making a situation where all students can have permission to incredible instruction and assets. Whether you are a chairman, an guide, a student, or the guardian of a student, now is an incredible time to inspect how cloud-based applications can advantage you, your youths, and your school.

V.ADVANTAGES OF CLOUD COMPUTING IN EDUCATION

With an array of productions around, the world is knowing the power of cloud based applications. Not only they reduce the need for substructure, but also significantly reduce IT costs while attractive availability and chances for establishing transparent and effective collaborations. The Cloud has existing important possible in changing how education as an industry works from with the perception of offering online programs so as to modify the customary working ecosystem.

Here are a few unexpected ways by which cloud applications is manipulating today's education system:

1. **Students Save On Expensive Textbooks:** It is a known fact that university level textbooks are fairly expensive. Textbooks have surprisingly beat the cost of exactly every other element involved in university level education including tuition fees. This results in students preventing from ordering them. Cloud-based textbooks are an actual solution to this problem. Digital content tends to be lot less costly thus, allowing lower-income students to get access to the same quality of learning material as other students.

2. **Learning Material Needn't Be Outdate:** As an extension to the earlier point, expensive textbooks require students to depend on older, second hand editions that consist of invalid material. Studies showed that an typical social studies textbook in junior high schools are as much as 11 years old. In such cases, rather as basic as world maps are not correct. Cloud-based material makes it easy to update content real-time hence, allowing students to gain constant access to the latest learning resources

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TWITTER SENTIMENT ANALYSIS

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ABSTRACT: Sentiment analysis is a technique broadly used in text mining. Twitter sentiment analysis using advanced text mining techniques to analyze the sentiment of the text or tweet in the form of positive, negative and neutral. It is also known as opinion mining. It is mainly for analyzing conversations, opinions, and sharing of views in the form of tweets for deciding business approach, political analysis, and also for assessing public actions. As such, this paper discovers the various sentiment analysis techniques and tools used for twitter sentiment analysis.

KEYWORDS: sentiment analysis, twitter, text mining, sentiment analysis in python

I.INTRODUCTION

Sentiment analysis is a method used in text mining. It may be described as a text mining procedure for analyzing the basic sentiment of a text message as a tweet. Twitter sentiment or opinion stated over it may be positive, negative or neutral. Though, no algorithm can give you 100% accuracy or estimate on sentiment analysis.

As a element of natural language processing, algorithms like svm, naive bayes is used for predicting the polarization of the sentence. Sentiment analysis of twitter data may also depend upon level of sentence and document level.

Methods like, finding positive and negative words on sentence is however improper, because the flavor of text block depends a lot on context of data. This may be ended by looking at the part of speech (pos) tagging.

Twitter have millions of monthly active users has now become a good thing for organizations and individuals who have a tough political, social and economic importance in maintaining and enhancing their clout and reputation. Sentiment analysis provides these organizations with the capacity to survey various social media sites in real time. Text sentiment analysis is an automatic process to determining whether text segment contain objectives or opinion based content, and it can furthermore establish the text's sentiment polarity.

The main aim of twitter sentiment classification is to automatically decide whether a tweet's sentiment polarization is negative or positive.

II. TECHNIQUES

- **Twitter Sentiment Analysis Using Python**

Twitter sentiment analysis in python can be done through accepted python libraries like tweepy and textblob.

- **Tweepy**: Tweepy, the python client for the official twitter API support accessing twitter through basic validation and the newer method like oauth. Twitter has closed accepting basic authentication so oauth is now the only ways to use twitter API.

Tweepy giveaccesses to the well documented twitter api. Tweepy makes it possible to get object and use any process that the official twitter api offer. The main form classes in the twitter api are tweets, users, entities & places.

- **Textblob**: Textblob, one of the most popular python libraries used for processing textual data, stands on the nltk. It works as framework for almost all necessary tasks, we need in basic Natural Language Processing (NLP). Textblob has some advanced features like –

1. Sentiment extraction
2. Spelling correction

text blob is very useful for twitter sentiment analysis python in the following ways:

- **Tokenization**:

Textblob can tokenize the text blocks into the different sentences and words. This makes reading between lines much more easier.

➢ **Twitter Sentiment Analysis In R**

Sentiment analysis is deeply used in r, an open source tool for the comprehensive statistical analysis. R performs important task of the sentiment analysis and provides visual representation of this analysis.

R, programming language intended for deep statistical analysis, is open source and available across the different platforms, for e.g., windows, mac, linux. You also can use r to extract and visualize twitter data. You can create an application to extract data from the twitter.

Prerequisites for creating an application for extracting the data for twitter sentiment analysis in r

- R must be first installed and you should be using rstudio.
- In order to extract tweets, you will need a twitter application and therefore a twitter account. If you don't have a twitter account, please sign up on twitter.
- Use your twitter login id and password to sign in on twitter developers.

Once you have your twitter application setup, you are ready to drop into accessing tweets in r

The first thing that you need to set up into your code is your authentication. When you set up your application, it provides you with three unique identification elements:

1. Appnam
2. Key
3. Secret

These keys are located in your twitter app settings in keys and access token tab. You need to copy those into your code. Next, you will need to pass a suite of keys to the api.

At last, you can create token that authenticates access to tweets. Note that the authentication process below given will open a window in your browser.

Following are the lexical based twitter analyzer i.e.tweets to find sentiment about people.

- Tweet_extraction.r
- Word database.r
- Cleaning_data.r
- Emoticon.r
- Score_sentiment.r
- Func_on_tweet.r
- Graphs.r
- Percentage.r
- Level_of_sentiment.r
- Frequent hastags of user.r
- Top tweeters and timeline of particular hashtag.r
- Wordcloud.r

➢ **Deep Convolution Neural Networks For Sentiment Analysis**

- **Feature Representation**

Word n-grams features: The word n-grams feature model is one of the most simple and efficient representation models for natural language analysis and twitter sentiment analysis. Some studies have shown state-of-the-art performance for sentiment classification on twitter data using a unigram model. We can use unigram and bigram features as the baseline feature models.

Twitter specific features: The number of hash tags, emoticons, negation, pos and the presence of capitalized words can be used as features.

Word sentiment polarity score features: The word sentiment polarity score is lexicon-based sentiment feature, and some approaches commonly used as a sentiment feature for tweet sentiment analysis.

We use the afinnlexicon and extended it using senti word netto find the tweet sentiment polarity score. The sentiment polarity score of tweet is sum of the sentiment polarity score of the each word in tweet. The sentiment score of each word is computed by measuring the Point-wise Mutual Information (PMI)betweenword and the negative or positive sentiment classification of the tweet using the formula: senscore (w) d pmi (w; pos) pmi (w; neg) where *w* is a word in the lexicon, pmi(w, pos) is the pmiscore between *w* and the positive category, and pmi (w, neg) is the pmi score between w and the negative category. Therefore, a positive senscore (w) indicate that there is stronger relationship between the wordsw with positive sentiment and vice versa.

- **Word Representation Features**

Learning word vector representations is from a large number of annotated text corpora has recently have been used in various natural language processing tasks. The word vector representations from unsupervised learning in the massive corpora can be capture grammatical and semantic characteristics of thewords. Recent studies have shows that the use of pre-trained word embeddings can be substantially improve the performance of model .The glove model is global log bilinear regression model that combine the advantages of two major model families in literature: local context.

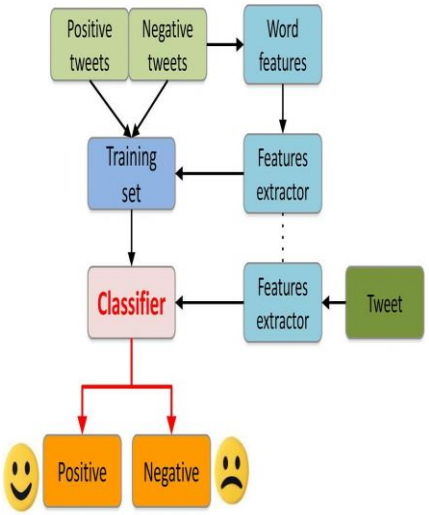

FIG. System architecture

III.TOOLS

Enginuity:Enginuity, even while a paid solution, a basic version is available as a free web application. It works differently from many of the free sentiment analytic tools out there. Instead of directly querying tweets related to the certain keyword, enginuity allows you to search for the recent news stories about a keyword.

The tool then query both: twitter and facebook to calculate how many times the story has been shared. It also analyzes whether the sentiment of social shares is a positive or negative, and gives acombined sentiment rating for a news story.

Enginuity is an amazing tool used for discover stories or to share through your social channels, as well as getting a combine picture ofsentiment about recent events trending on the social media.

Revealed context (api/excel add-in): Revealed context, another popular tool used for sentiment analytics on twitter data, offers a free api for running sentiment analytics on up to 250 documents per day. There is an excel add in as well as a web interface for running a analytics independently of the api.

While revealed context does not offer an interface for directly scraping twitter, it can analyze a spreadsheet of tweets without using the api. With the api you can build pipeline that feeds the recent tweets from the twitter api into the revealed context api for processing.

Steamcrab: Steamcrab is well-known web application for sentiment analytics on twitter data. It focus on keyword searches and analyzes tweets according to the two-pole scale i.e. positive and negative. Visualization options are limited to the scatterplots and pie charts.

Meaningcloud (api/excel add-in): Meaning cloud is a another free api for twitter text analytics, including sentiment analytics. One of the principal advantage of meaningcloud is that the api support number of text analytics operations and in addition to sentiment classification. These operations consist of topic extraction, text classification, part-of-speech tagging etc.

Socialmention (web app): Socialmention is basic, search engine style web application for topic-level sentiment analysis on the twitter data. You can enter a keyword, and tool will return a aggregate sentiment scores for keyword as well as for related keywords.

Another striking feature of the social mention is its support for the basic brand management use case. It returns a "passion" score that measures how likely twitter users are there to discuss your brand, as well as the average reach of twitter users discussing your brand.

IV.APPLICATION

Sentiment analysis dataset has a number of applications:

Business:Most of the companies use twitter sentiment analysis to develop their business strategies, to review customers' feelings towards the products or brand, how people will respond to their campaigns or how the product launches and also why consumers not buying certain products.

Politics: In the area of politics sentiment analysis dataset twitter can be used to keep track of political views, to spot consistency and inconsistency between statements and actions at the government level. Sentiment analysis dataset twitter is also used forthe analyzing election results.

Public actions: twitter sentiment analysis also used for monitoring and analyzing social phenomenon, for predicting potentially dangerous situations and also for determining the general mood of the blogosphere.

V.ADVANTAGES

- Popular micro blogging site
- Short text message of 140 characters
- 240+ million active users
- 500 million tweets are generated everyday
- Opinion of the mass is important
- User often discuss current affairs and share personal
- Views on various subject

VI. DISADVANTAGES

- Tweets are vastly unstructured and also non grammatical.
- Out of vocabulary words.
- Lexical variation.
- Extensive usage of acronyms likeasap, lol, tmrw.

VI.CONCLUSION

This paper addresses the problem of sentiment analysis in twitter that is classifying tweets according to the sentiment expressed in them: positive, negative, neutral. Due to this large amount of usage we hope to achieve a reflection of public sentiment by analyzing the sentiment expressed in the tweets. Here we discussed different techniques for sentiment analysis and required tools for the same.

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INTERNET OF THINGS(IOT) APPLICATIONS,CHALLENGES AND RELATED FUTURE TECHNOLOGIES

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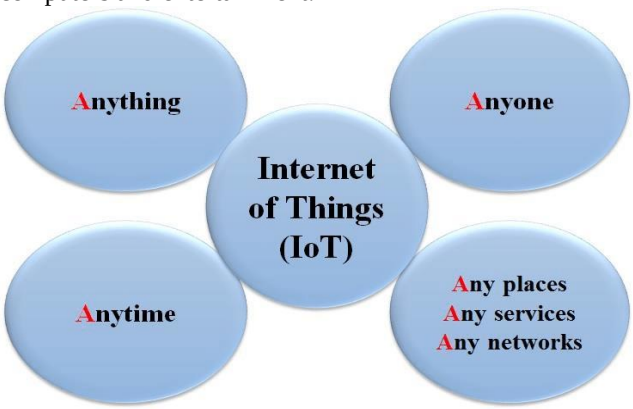
ABSTRACT:

Nowadays Internet of Things (IoT) gained a huge interest from researchers, as it becomes an main technology that promise a smart human being existence, by allowing a interactions between objects, technology and every things together with working class. IoT shows a scheme which consists a things in the real world, and sensors attached to or joint to these things, connected to the Internet via wired and wireless network structure. The IoT sensors can use different types of connections like RFID, Wi-Fi, Bluetooth, ZigBee, in adding to allow broad region connectivity using a lot of technologies such as GSM, GPRS, 3G, and LTE. IoT-enabled things will split in turn about the state of things and the nearby situation with people, software systems and new machines. by the skill of the IoT, the world will become elegant in every aspects, since the IoT will provides a means of neat cities, smart healthcare, smart homes and building, in addition to many important applications such as elegant energy, grid, transportation, waste management and monitoring . In this paper we evaluate a idea of lots of IoT applications and upcoming possibilities for latest related technology in addition to the challenge that face the performance of the IoT.

KEYWORDS: IoT application, upcoming Technologies, elegant Cities, nearby situation, elegant Energy.

I. INTRODUCTION

The Internet of things(IOT) sometimes sometimes referred to as the intenet of item sometime willchange everything including ourselves. The Internet has an contact on teaching,communication, ability, understanding, management, and civilization . obviously, the Internet is oneof the most major and strong creation in all of human being history and at the present with theconcept of the internet of things, internet becomes more favorable to have a elegant life in everyaspects Internet of Things is a new skill of the Internet accessing. By the Internet ofThings, objects know themselves and obtain intelligence behavior by making or enablinginterrelated decision thinks to the reality that they can converse added to other services Figure 1 reviews that with the internet of things, anything's will able to be in touch to the internet at any position from any position to make available any services by any network to any person. this concept will generate a new types of applications can involve such as smart automobile and the smart home, to provide many services such as notifications, security,energy saving, automation, communication, computers and entertainment.



Fig(a) INTERNET OF THINGS CONCEPT

In the near upcoming, storing and communication facilities will be highly inescapable and distributed: persons, machineries, smart substances, nearby universe and platforms connected with wireless/wired sensors, M2M devices, RFID tags will create a highly regionalized resources interconnected by a dynamic network of webs . In the IoT, the message language will be based on interoperable procedures, operating in diverse surroundings and stages . IoT in this perspective is a

generic term and all substances can play an active role to their joining to the Internet by creating smart surroundings, where the role of the Internet has changed.

II. INTERNET OF THINGS STANDARDIZATIONS AND PROTOCOLS:

By the 2020 around 50 to 100 billion things will be connected automatically by internet.

Figure shows the progress of the things associated to

the internet from 1988 to prediction
2020. The Internet of Things (IoT) will provide a technology to producing the means of smart
action for machines to connect with one another and with many different types of
information . The success of IoT depends on rule, which provides interoperability, compatibility, consistency, and real operations on a total scale . Today more than 60 companies for leading skill, in communications and dynamism, working with ideals, such as IETF, IEEE and ITU to specify new IP based skills for the Internet of Things.

The policy of the IoT values is required to reflect the

capable use of vitality and
network volume, as well as regarding other restraints such as incidence groups and control

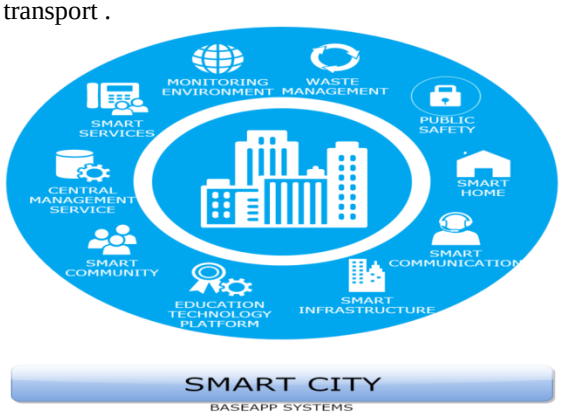
levels for radio frequency infrastructures As IoT changes, it may be essential to review such constraints and examine ways to safeguard adequate volume for growth, for example in case of extra radio spectrum distribution as it becomes available IEEE Standards Association (IEEE-SA) grows a number of values that are connected to atmosphere need for an IoT. The main focus of the IEEE correction activities are on the Physical and MAC layers The IEEE provides an early foundation for the IoT with the IEEE802.15.4 normal for short range low power wirelesses, typically working in the manufacturing, scientific and medical band in addition to use ZigBee skill The IEEE-SA has an over 900 active standards and more than 500 standards under growth. In its research into IoT, it has recognized over 140 existing standards and schemes that are applicable to the IoT. The base project connected to IoT is IEEE P2413 which it is now considering the style of IoT ETSI produces globally applicable standards for information and communications technologies (ICT), including fixed, mobile, radio, converged, broadcast and Internet technologies, discusses a similar concept under the label of "machine to machine (M2M) communication. These standards are considered as one of the basic standards of IoT, because its associate with M2M technology which is one of the basic techniques related to IoT Internet Engineering Task Force (IETF) is concerned with the evolution of the Internet architecture and the smooth operation of the Internet and known as large, open to international community of network designers, operators, vendors and researchers IETF provides its own description of IoT which provides a most recognizable enhancement to support IPv6, with the 6LoWPAN The 6TiSCH Working Group is being formed at the IETF to address the networking piece of that unifying standard. Based on open standards, 6TiSCH will provide a complete suite protocols for distributed and centralized routing operation over the IEEE802.15.4e TSCH MAC ITU's Telecommunication Standardization Sector (ITU-T) considered as a first organization of standards development and coordination of the
Internet of Things. They buts standards to gain benefit of integrated information processing
capacity, and industrial products with smart capabilities In addition to make development on electronic identities that can be queried remotely, or be equipped with sensors for detecting physical changes around them.

III. INTERNET OF THINGS APPLICATIONS

Internet of things potentials many applications in social life, making life cooler, innocent and smart. There are many presentations such as smart towns, households, transport, vigor and
smart environment.

A. Smart Cities

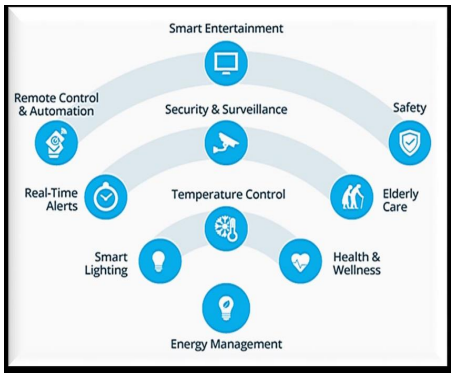
Numerous main cities were supported by keen schemes, like Seoul, Tokyo, Shanghai.. Smart cities may motionless be observed as a towns of the future and keen life, and by the novelty degree of making keen capitals today's, it will became very possible to enter the IoT skill in cities growth . Smart cities demand require careful preparation in every phase, with support of contract from administrations, citizens to appliance the internet of things technology in each aspects. By the IoT, cities can be improved in many stages, by improving organization, enhancing public transport .



Fig(i) Smart cities aspects

B. Smart Home and Buildings

Wi-Fi's tools in home mechanization has been used largely due to the interacted nature of arranged microchip technology where electric policies such as TVs, mobile devices are usually sustained by Wi-Fi. Wi-Fi have ongoing fetching portion of the home-based IP network and due the growing rate of acceptance of mobile calculating devices like smart receivers, tablets, For example a schmoozing to provide online flowing facilities or net at families, may provide a unkind to controller of the device functionality over the system At the similar time mobile policies ensure that clients have contact to a movable 'controller' for the microchip technology connected to the net. Together kinds of plans can be rummage-sale as entries for IoT requests Numerous businesses are seeing emerging stages that mix the structure automation with entertaining, healthcare nursing, vitality observing and wireless sensor monitoring in the home and structure surroundings By the idea of the internet of things, families and structures may function many devices and substances quickly, of the greatest interesting request of IoT in smart families and structures are keen illumination, keen environmental and television, air switch and central boiler, energy organization and safety.



Fig(ii) Smart home and building application

C.Smart Energy And The Smart Grid

A smart network is connected to a network and device and advanced to must a keen drive executive A keen network that incorporate the info and communications technologies (ICTs) to the energy net will enable a real time, two way message between sellers and shoppers, making more lively contact on drive flow, which will help transport energy more efficiently and sustainably The Key elements of information and communications skills will comprise detecting and checking technologies for control movements; numerical transportations structure to convey data crossways the net; penetrating decorations with in home-based sight to inform potency repetition; organization, switch and automation schemes to total and process numerous data, and to make a extremely communicating.

Fig(iii) Smart grid application

D. Smart Health

A close care that vital to hospitalized patients whose physical position should be examined constantly can be always done by using IoT checking technologies. For clever shape devices are used to gather ample physical information and usages entries and the puff to examine and stock the info and then send the examined data wirelessly to caregivers for additional study and appraisal as shown in Figure below . It swaps the procedure of consuming a fitness professional come by at regular intervals to checked the patient's energetic signs, instead if a incessant automatic movement of information. In this way, it concurrently recovers the excellence of care done constant attention and drops the price of upkeep by reductions the cost of old-style ways of care in adding to statistics group and examination.

Fig(iv)Smart healthcare concept

E.Smart Transportation and Mobility

The growth in transport is one of the issues to designate the happiness of the country. A road condition nursing and alert request is one of the most significant of IoT transformation application.

The main idea of the notion of keen transport and

mobility is to relate the values of troop obtaining and participating detecting. The procedure
began with operator recognized the way needs and noticeable certain opinions as dent in the smart phone's request . The smart transport is contract with three main conceptions.

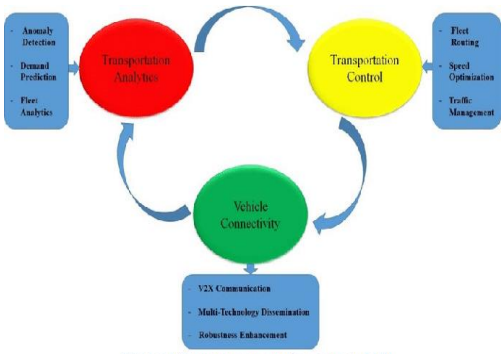
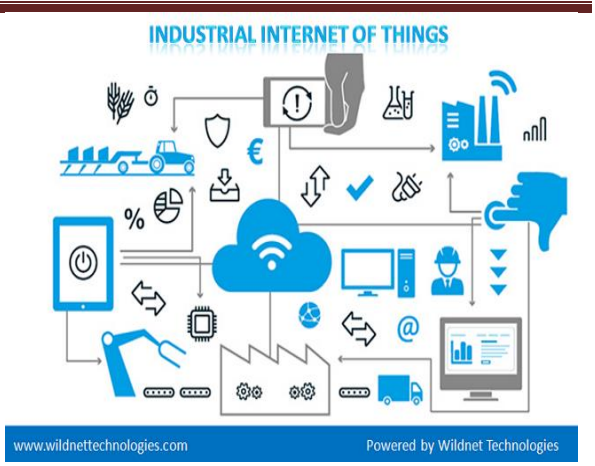


Figure 1 Smart transportation aspects [19]

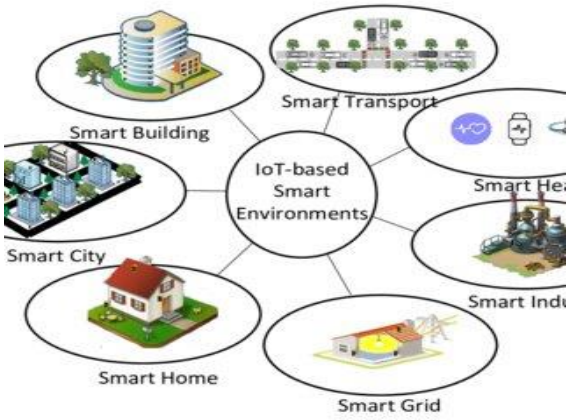
F.Smart Factory and Smart Manufacturing

Keen shop added a novel morals in work mutiny by adds synthetic intelligence, machine learning, and automation of knowledge work and M2M communication with the manufacturing process . The smart shop resolve vitallyalteration how produces are created, industrial and sent. At the similar period it will recover employee.
security and keep the location by permitting low productions and low occurrence manufacturing. These fees in the way gears and extra stuffs link and the resulting way in which executive traffics from beings to practical structures means that manufacturing becomes "cleverer" new tools such ; Computerization, engineering, and self-ruling mobility are all runs a funds of smart trade but M2M communications allowed by the "trade" internet of things will affords a full import of smart shop and smart industrial of Big Data idea which in this setting, refers to the logical potentials obtainable by the capacity and diversity of statistics that is made by a schmoozed cheap to enhance the manufacturing processes to suggesting less upkeep downtime, less outages and much summary vigor feeding Industries and industrial rebellion developed one of the most industrial technologies currently, the growing of themanufacturing development taken many peers. The first group related to the powered machineries in adding to aquatic and watercourse control. The second trade generation deal with frame production, meeting lines and power. In the end of the last period, industries worked under switch of processors and mechanization which documented as third group of businesses.



Fig(v) Smart Factory

Smart Environment:



There were many researches labors has been waged to resolve the glitches of ecological litter and leftover capitals . Making of a fit situation is not relaxed since of businesses and transports wastes, with irresponsible human activities are daily factors that make the situation injured .

The setting wants a keen habits and novel skills for nursing and management. Nursing the setting is important in command to measure the present disorder of the setting to receipts right lifetime choice rendering to calm facts from nursing systems, and organization is wanted to have an well-organized resources intense and use in to reduction the works and vehicles litters. Both monitoring and discarded management offer a huge quantity of facts to energy the fitness typical by managements or healthy situation administrations to keep individuals and situation, and to ease or to avoid ordinary tragedy that strength occur . Smart environment is an important skill in our ordinary lifetime which delivers numerous services and resolutions for many ecological claims such as aquatic and appearance pollution, climate and energy nursing, leftover organization, usual tragedy, and many other situation needles as shown in Figure and all may associated to each people through home-based area system. Keen situation strategies mixing through

Internet of Things (IoT) knowledge is settled for tracking, detecting and nursing stuffs of location which offer possible aids to realize a lime creation and supportable life.

There are various bids of internet of things in location and that can be distributed to two main groups ecological assets managing, and ecological value and protection management . The assets managing relays to all regular funds include animals, earths and woods, natures and angles, oil , petrol , land, stream, look and heavy metals with gilt, copper and steely. All these assets are likely to cut significantly or pretentious by numerous issues, counting trash, leftover, then misuse. IoT can provides an real method to connect among each of these capitals devices with research and nursing middles to make suitable choices in the ingesting of these
sources.

IV. INTERNET OF THINGS CHALLENGES

The fact that Internet of things requests and

situations drawn overhead are
interesting which delivers skills for keen each clothes. , but near are particular challenges to the request of the Internet of Things idea in price of application. The hope that the skill must be obtainable at low price with a big amount of objects. IoT are too faced with numerous other challenges , such as:

Scalability: Internet of Things has a big concept than the conventional Internet of
Scalability: Internet of Things has a big concept than the conventional Internet of
-Scalability: Internet of Things has a great impression than the traditional Internet of computers, because of possessions are cooperated inside an open location. Plain functionality such as communication and ability discovery therefore need to drive similarly jobwise in composed slight device and big device environs. The IoT wants a new drives and means in knowledge to loan an capable act for scalability.

Self-Organizing: Smart things should not be managed as computers that require their
-Self-Organizing: Cool stuffs should not be achieved as processors that want theirusers to construct and adjust them to actual states. Mobile effects, which are often only irregularly charity, basic to form friends freely, and able to be unify and form themselves to suit their actual environment.

Data volumes: Some application scenarios of the internet of things will involve to
-Data volumes: Numerous tender settings of the internet of things will associate to rare communication, and conference matter's form tool webs, or form logistics and big gauge webs, will gather a huge sizes of data on main system swells or servers. The term signify this aces is big data which is wants many occupied trick in adding to new times for storage, dispensation and group.

Data interpretation: To support the users of smart things, there is a need to interpret
-Data interpretation: To sustenance the operators of keen things, there is a essential to infer
the native setting resolute by devices as correctly as possible. For service providers to income from the unlike facts that will be made, wants to be talented to draw some generalizable deductions from the understood device statistics.

Interoperability: Each type of smart objects in Internet of Things have different
-Interoperability: Each type of keen materials in Internet of Things have different
information, allowance and communication skills. Different smart ingredients would also be visible to unlike environments such as the strength accessibility and the roads bandwidth goods. To facilitate communication and assistance of these things, shared ideals are necessary.

Automatic Discovery: In dynamic environments, suitable services for things must be
-Automatic Discovery: In active surroundings, suitable facilities for things must be automatically identified, which needs appropriate semantic means of telling their functionality.

Software complexity: A more extensive software infrastructure will be needed on the
-Software complexity: An extra varied software infrastructure will be required on then effort and on linked servers in training to thrive the shrewd things and track facilities to upkeep them. that since the software systems in nifty substances will need to trade with symbolic assets, as in likely rooted systems.

Security and privacy: In addition to the security and protection aspects of the Internet
-Security and privacy: In adding to the safety and defense features of the Internet such in infrastructures privacy, the realness and morality of message partners, and communication honesty, other supplies would also be significant in an Internet of Things. There is a essential to admission sure facilities or avoid from interactive with other things in IoT and also commercial dealings connecting smart substances would need to be endangered from contestants' snooping eyes.

Wireless communications: From an energy point of view, established wireless

-Wireless communications: From an life point of opinion, familiar wireless technologies such as

GSM, Wi-Fi and Bluetooth are withdrawn less suitable; more recent WPAN values as ZigBee and others still below development may have a solvent bandwidth, but they do use evocatively less switch.

V. INTERNET OF THINGS AND RELATED FUTURE TECHNOLOGIES

Numerous new skills are connected to IoT to show the addition of strengthened as well as
wireless control, message and IT skills composed which are accountable for connecting several subsystems and belongings which function under a united stage controlled and achieved briskly.

A. Cloud Computing

worlds are very dissimilar from both other, but their faces are frequently balancing in
general, in which IoT can advantage from the nearly limitless competences and capitals of cloud to recompense its technical restraints for example storing, dispensation, and communication Mist can proposal an real answer for IoT service organization and composition as well as for applying requests and facilities that exploit the things or the data produced by them .On the other hand, cloud can benefit after IoT by spreading its scope to deal with real biosphere belongings in a more dispersed and lively way, and for delivering new facilities in a large amount of real lifetime situations. In many bags, Mist can provide the middle layer amid the belongings and the requests, beating all the complexity and functionalities necessary to tool the latter. This will impact future application development, where info gathering, dispensation, and broadcast will generate new challenges, especially in a multi cloud environment or in fog cloud Cloud facilitates for IoT request to enabling data group and data dispensation, in addition to rapid setup and addition of new things, while upholding low costs for placement and for complex data dispensation Cloud is the most convenient and cost effective solution to deal with data produced by IoT and, in this deference, it makes new chances for facts aggregation, addition, and allocation with third festivities. Once into Mist, data can be treated as regular through precise APIs, can be threatened by smearing top level security,
and can be nonstop read and pictured from any room.

B. Big Data

to the fast growth in the nets, sensors in nets are better added and spare in the fleshly settings which will variation the info note nets, amenities and requests in several domains . The expectations in the later year's display that round 50 billion devices will produce huge bulks of data since sundry bids and facilities in a variety of areas such as smart grids, smart homes, healthcare, automotive, transport, logistics and environmental checking. The correlated tools and resolutions that allow addition of real realm facts and facilities into the present info interacting technologies are frequently labeled under the period of the Internet of Things (IoT) . The capacity of data on the Internet and the Mesh is still rising, and ordinary about 2.5 quintillion bytes of data is shaped and it is projected that 90% of the statistics nowadays was generated in the previous two years. Calm data from devices connected to dissimilar proceedings and occurrences can be examined and twisted into real info to give us healthier sympathetic about our bodily biosphere and to make more worth additional crops and facilities. Such these sensory data like statistics of foretold and balanced power ingesting in keen grids, examined data of contamination, climate and mobbing , sensory data logged to provide better circulation
control and organization, and nursing and dispensation fitness signs data.

C. Security and Privacy

IOT application include the numerous possession commands , there is a need for a trust outline to allow the users of the scheme to have sureness that the info and facilities being swapped can
indeed be relied upon . The trust framework needs to be able to deal with humans and machines as users, for it wants to convey faith to persons and wants to be robust enough to be used by machineries deprived of disavowal of facility. The development of trust plans that address this obligation will need loans in areas such as frivolous public key infrastructures (PKI) as a basis for faith organization . Lightweight key organization systems is used to enable trust encryption materials using least infrastructures and dispensation resources, as is consistent with the reserve forced nature of numerous IoT devices .

CONCLUSIONS:

The things to belongings and social to clothes done the internet. Each objects in the domain can be recognized, linked to each other finished internet taking choices freely. All networks and skills of message are castoff in structure the idea of the internet of things such skills are mobile calculating, RFID, wireless sensors nets, and embedded schemes, in adding to numerous procedures and practices to get organization processes, storage data, and safety issues. IoT requires consistent method for architectures, identification schemes, procedures and incidences will occur parallels, each one besieged for a particular and specific use. by the internet of things numerous smart requests becomes real in our life , which allow us to spread and interaction with each things in adding to facilities many significant aspects for humanoid life such as keen healthcare, keen homes, smart energy , smart metropolises and smart surroundings.
Internet of things may opposite two major tests in order to assurance unified network access; the first subject tells to the detail that now different nets live

and the other issue is connected to the big data size of the IoT. Other present issues, such as speech restriction, reflex address system, security purposes such as authentication and encryption, and roles to bring speech and video signs efficiently will perhaps be pretentious in applying the idea of the internet of things but by continuing in technical developments these tests will be overwhelmed. The internet of things potentials upcoming fresh technologies when connected to cloud, fog and spread computing, big data, and security issues. By mixing all these issues with the internet of things, keener requests will be developed as soon. This paper plotted some of the most significant applications of IoT with particular focus on what is being actually complete in addition to the challenges that fronting the implementation the internet of things concept, and the other upcoming technologies make the concept of IoT possible.

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Big Data Analytics in Cloud computing with Securities and NoSQL

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Abstract: Big Data Analytics is becomes very popular due to increase in users of social web sites like Facebook, Amazon, You Tube etc. Analysis is very difficult since it requires NoSQL which needs data in document format. Due to the Big Data intruders or cybercriminals trying to hack data since security provision has a big problem.

Introduction

Big data is a word used for detailed information of massive amounts of data that are structured, semi-structured or unstructured. Big Data generally is not handled by traditional database software technologies. All the enterprises handled Big Data by their web sites and are not structured since it contains figures, numerical data, Images comments, Email attachment etc. and are in unstructured data

Five **V**'s are plays very important role in Big Data Analytics.

Volume: It includes storage of data, blogs, emails, You tube audio video streaming etc. .

Variety: It consist of types of data which is supported.

Velocity: In how much time the files are created and running processes are carried out.

Veracity: Reliability of data testing is done

Value : Big Data is not in fix quantity is fast moving and fast growing.

Challenges

Every day we are collecting more and more information and live in the period of Big Data.

Researchers are think that they are fail to unify, process and analyze big data by using existing technology, theory or any other kind of method. However, the world has becomes helpless since large amount of data is generated by business, science and social sites. Big data has professed big challenges before IT industry.

Big Data Engineering

Big Data Engineering collects all data from horizontal scalable servers. Innovative engineering techniques in the data layer have been driven by the growing importance of data types that cannot be handled efficiently in a traditional relational model.

1. Non-Relational refers to logical data models such as document, graph, key-value and others that are used to provide more efficient storage and access to nontabular data sets.

2. NoSQL (alternately called "no SQL" or "not only SQL") refers to data stores and interfaces that are not tied to strict relational approaches.

3. Data Modelling is used for sorting and storing data. In big enterprises it need to store data in huge form we may say this is Big Data. If we select appropriate model to maintain Big

Data it offers following benefits.

- **Performance:** Good Data model are useful to extract complex data more easily as well as to maintain their performance more accurately.
- **Cost: Such models reduce speed, storage and computing cost and reuse results for Big Data system.**
- **Efficiency:** Good data models increase the efficiency
- **Quality:** Good data models maintain the consistency and reduce the possibility of any errors.

Big Data Analytics

Big Data analytics is the process of collecting, organizing and analyzing large sets of data to find out useful patterns and other information. Big Data analytics can helps to take business decisions and obtain accurate results.

Many enterprises are gathering their data through different sources and also work in parallel. Due to models availability it results in parallel across distributed data from one or more data sources.

Big Data and Cloud environment

Different services are run under different clouds in clustered form. There are three models of cloud services Software as a Service (SaaS), Infrastructure

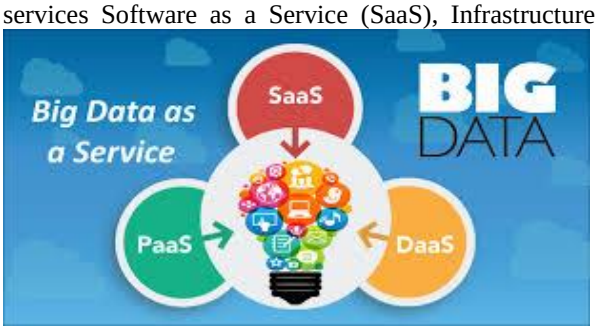


Figure 1: Cloud Services

Infrastructure as a Service (IaaS) : Big Data analytics need shared server resources which may be available in premises. It requires Cloud operating

system with performance servers, storage resources and network. IaaS requires greater investment in IT services for BDA. The organization in which the BDA is going to implement they must have their own softwares for BDA , such as the Hadoop framework, or a NoSQL database, such as Apache Cassandra*, MongoDB*, or Couchbase* technologies

build, test and run application on cloud infrastructure . PaaS minimises workload by eliminating scale of components and configuration on Hadoop implementation platform services to BDA.

Software as a Service (SaaS): Cloud-based applications need SaaS. It Covers the range of scenarios business users require .

Platform as a Service (PaaS) : Requires tools and libraries to build, deploy and test on cloud infrastructure.

NoSQL Database Encryption and Security

One of the security tools for Bid Data is encryption. Encryption is the process in which plain data or users data is translated in non-readable format. In this process both Input and Output type of information is protected. Building Firewall is one of the another security tools for Big Data, it filters and reduce traffic to and from servers and also controls external attacks on data.

Rapid NoSQL Database Adoption

Business industry and Enterprises rapidly adopting NoSQL databases due to growing amount of data (Big Data). It is very beneficial to organization to extract important as well as intelligent data.

Cybercriminals Target NoSQL Databases

As many popular enterprises like Amazon, Google ,eBay, Facebook, , LinkedIn, Mozilla, Netflix and Twitter are maintaining Big Data in their Databases therefore criminals are targeting these databases .

Security provision for Organizations

Organization which is maintained or stored their data using NoSQL must provide any other geographical security.

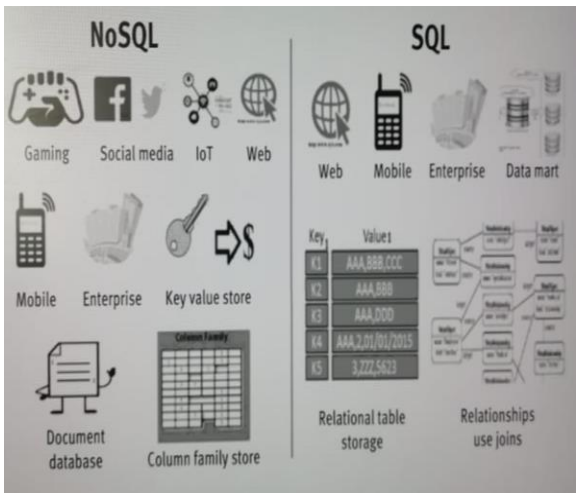


Figure 2: Difference between SQL and NoSQL

Following is the difference between SQL and NoSQL which works with structured and non-structured data simultaneously.

Characteristic	SQL	NoSQL
Data Storage	Information is stored in Table format. Each row contains data items.	Data is not stored in Table format. It is stored in different formats of databases as Text documents, graphs, etc.
Schemas	To alter Schema definition is very complex once table is created	Information can be changed easily as compared with relational databases
Scalability	Due to vertical scaling it is possible to scale A RDBMS across multiple servers and is time consuming.	Due to horizontal scaling More servers can be added to increase the performance.
Integrity Compliance	Existence of ACID properties	Nonexistence of ACID properties

Table 1. Differences between SQL and NoSQL

NoSQL query language:

This query language is inspired by MongoDB.

A query consists of these parts:

1. fields to be extracted
2. table to extract the records from
3. expression for filtering the table rows
4. groupby - fields to group the data under
5. aggregate functions to be applied to columns in fields
6. orderby - fields to order the return data by
7. limit - an integer number of records to return.

Document oriented Databases:

A document-oriented database or a NoSQL document store is a new way to store data in JSON format rather than simple rows and columns. It allows you to express data in its original form the way it's meant to be.

Data for NoSQL required document. A JASON is more suitable, easy, readable and more compressed. The format used could be JSON, XML, YAML, etc. The JSON format is the format of choice for NoSQL databases and good reason ,these documents require minimum format rules.

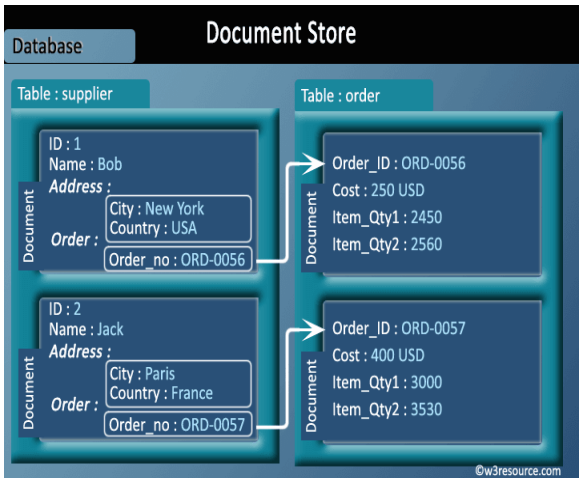


Figure 3: Document of NoSQL

Document ITEM for NoSQL

Following document Item consist of four documents ITEM,ORDER,CUSTOMER and ITTRAN all these documents are related with each other .

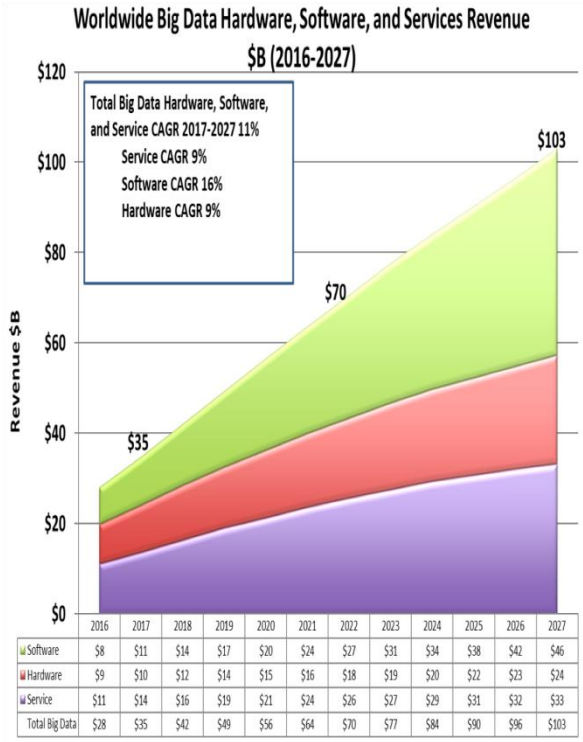
Itemno: 0001	Item Name: Chair

Order_no:O005	Order_Date: 12-Jun-2018

Cust_ID:1234	Cust_name: Ramniwas Tripathi

Order_no: 0001	Cust_Id: 1234	ItemNo: 001 ItemNo: 009	Rate:3 400 Rate:3 457	Quantity :04 Quantity:03

Looking forward, the overall the BDA market will grow at an 11% compounded annual growth rate (CAGR) to $103B by 2027 (Figure 1). Edge computing – including streaming and ML app deployments on smart devices will boost the market in the out years.



	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Software	$8	$11	$14	$17	$20	$24	$27	$31	$34	$38	$42	$46
Hardware	$9	$10	$12	$14	$15	$16	$18	$19	$20	$22	$23	$24
Service	$11	$14	$16	$19	$21	$24	$26	$27	$29	$31	$32	$33
Total Big Data	$28	$35	$42	$49	$56	$64	$70	$77	$84	$90	$96	$103

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Survey Paper For Credit Card Fraud Detection Using Data Mining Techniques

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ABSTRACT:Nowadays, the Credit card usage is growing day by day for both regular consumptions as well as online. In every transaction of credit card, the bank must check the fraud detection. Everywhere, the fraudulent transactions are generated in new ways by the fraudsters. Banking industry, generally use Data Mining techniques for credit card fraud detection. The detection techniques is mostly based on the methods like Decision Tree, Clustering techniques, Neural Networks and Hidden Markov Model, these are changed in detecting the various credit card fraudulent transactions. This paper grants the survey of those techniques and identifies the best fraud cases.

KEYWORDS: credit card, data mining, fraud detection, Decision Tree, Hidden Markov Model.

I. INTRODUCTION

Nowadays the modes of payment methods are improved into online transactions. Banking system provides different type of payments like e-cash, card payments, internet banking, and e-services for improving online transaction. Credit card is one of the greatest custom ways of online transaction. Credit Card purchasing is categorized into two types:

➢ Physical Card

➢ Virtual Card

A physical card is used for creation a payment at a physical payment terminal in your shop or via an online shop. A virtual card is not accessible as a card; it is a digital payment instrument that can be used for internet banking.

Credit Card: A Credit card is used for a payment purpose to permit the user to pay an amount for goods and services based on the cardholder's ability to the card and other agreed charges. Figure 1.1.1 will show the process of credit card transaction. Generally, the issuer creates a temporary account to the card holder along with a grant statement in order to draw money for payment of purchase. The bank charges a small interest in this regard.

Credit Card Fraud: Credit card is the most commonly used payment method in online transactions and gradually there is an increase in fraud transactions as well. The aim behind these kinds of fraudulence may be obtaining goods without paying, or unauthorized funds from an account. Most people assistant crime of credit card fraud with ID theft. Now the ID theft decreased into a percentage. A survey shown that about 0.1% fraudulence is by credit card. This has resulted in huge financial losses

Fraud Detection:

Credit card fraud detection supplies the previous transaction patterns of each cardholder which benefits in decrease the rate of credit card frauds. The data is created on the user spending ability and the country they live. It computes user's characteristics. Deviation of 20-30, user business history and operating is measured as an illegal attempt and system takes action. The system will block the user for extra than three invalid attempts.

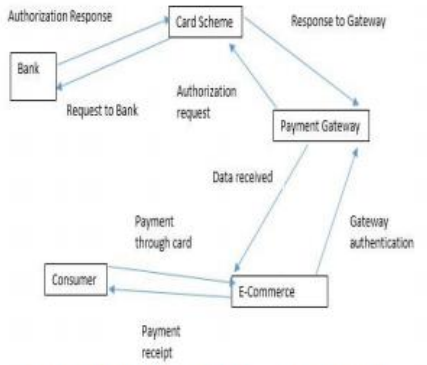

Figure 1.1.1: The process of credit card transaction.

II. LITERATURE SURVEY IN FRAUD DETECTION

In [6] SnehalPatiletal,defines the "Decision Tree Induction Algorithm" which is used for Credit Card Fraud Detection. In this paper it discusses about the method, decision tree approach is a new cost sensitive technique linked with well-known traditional classification models on a real world credit card fraud data set, which decreases the sum of misclassification cost while selecting the splitting attribute at each non-terminal node is advanced. Credit card fraud detection is to decrease the bank risks, also used to equalize the transaction information with credit card fraud transaction of historical profile pattern to predict the probability of being fraudulent for a new transaction. In [3] DrR.Dhanapal, Gayathiri.P, describes the "Credit Card Fraud Detection Using Decision Tree for tracing Email and IP Address. By using this technique, we can able to find out the fraudulent customer/merchant through sketching the fake mail and IP address. If the mail is fake, the customer/merchant is suspicious and information about the owner/sender is copied through IPaddress.

In [1] RaghavendraPatidar, Lokesh Sharma, defines the "Neural Network" is used for the evaluation on one way solution by using neural network, for matching the previous stored patterns and currently used patterns from which we can detect such patterns for Credit Card Fraud Detection.

In [8] Yogesh Bharat Sonawane, Akshay Suresh Gadgil, AniketEknath, NiranjanKamalakarJathar, defines the "Clustering Based Approach" with K-means cluster analysis is a method for smashing dataset down into narrated constituents in such a way that patterns and order develops perceivable. Searching outliers is a main duty in k-means clustering for Credit Card Fraud Detection.

In [5] Mr. P. Matheswaran, Mrs. E.SivaSankariME, Mr.R.Rajesh ,defines the "Data Mining Techniques" for Fraud Detection in Credit Card. In this paper, we can notice the hidden information like whether an incoming transaction is fraudulent or not. It also separating the transaction amount in three categories used on different ranges of transaction amount each group show the deviation symbols.The different steps in credit card transaction processing are characterized as the underlying stochastic process of an Hidden Markov Model. HMM is used to model the sequence of operation in credit card transactions with the behavior of cardholder.

In [4] Dinesh L. Talekar , K. P. Adhiya, defines the "Credit Card Fraud Detection System: A Survey". This survey paper they tell the steps to detect the fraud transaction using Hidden Markov Model.

III. MOTIVATION

People are using credit card payment for shopping, bill payment, online transaction has greatly increased in number. We must avoid the fraud transaction which would rise by a fraudster. Data mining has various techniques to avoid that risk from the various types of attacks. In this paper we deliberate about some of the techniques which is used to detect fraud operations. Out of these, Decision Tree and Hidden Markov Model are measured to be the best for fraud detection.

IV. DATA MINING

The Methods that includes in identifying patterns from large data sets at the intersection of machine learning, statistics and database systems is called Data Mining. Banking Industry typically implement data mining techniques into their dataset, because bank has large set of data to take important decision, focus on significant pattern of data from the database and secure these data.

By becoming the information and converting them into some patterns and to understand the meaning of data, Data mining is the most wanted tool to take important decisions. It is well known as Knowledge Discovery in Database. The fraud is also complete using data mining techniques. Figure 4.1 will display the fraud detection transaction.

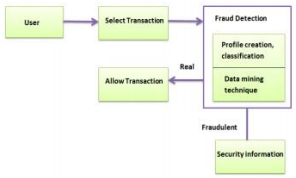

Figure 4.1 Credit Card Fraud Detection using data mining technique.

The steps for noticing the frauds using data mining techniques are first the user will select the transaction for the one they want to do the payment. Here the Fraud detection section has two steps,

- First the bank that offers the credit card to the customer, bank would create one profile and classify the cardholder data transaction details.

- In later they relate data mining technique to the transaction data; it will pass the transaction for verification. If there is any fraudulent operation ready, for it will get that transaction into security information section. In security information section current transaction data would check with the previous transaction information and the agreement. Otherwise the transaction would just be in process.

In credit card fraud detection there are several methods in data mining. In this Survey paper we discourse some most useful methods.

- Decision Tree
- Neural Network
- K-Means

• Hidden Markov Model
• Genetic Algorithm

Decision Tree:

Decision Tree Algorithm is a Data mining induction method that recursively shares a set of records. This algorithm used for resolving regression and classification problems using tree representation. Decision tree contains one root note, internal nodes and leaf nodes. The nodes are categorized with the use of attribute names, edges are labeled with the values of attributes. For expecting a class label for a record we start from the root of the tree. Equal the values of the root attribute with record's attribute. On the basis of contrast, we follow the branch corresponding to that value and jump to the next node, comparing our record's attribute values continuously with other internal nodes of the tree until we reach a leaf node with predicted class value [6]. Decision Tree is easy to tool, understand and display comparing to other classification algorithm. Using decision tree we can also tracing the mail and IP address through the credit card fraud detection [3]. This fraud detection depends on the location where the cardholder use the earlier credit card transaction compares with the location of current places transaction.

Neural Network:

Neural network also optional for credit card fraud detection it is effective result in myriad complications. Using neural network on fraud detection is like a human brain working principal. Human brain stores the experience which they traversed used that experience in current life, which same process is did in neural network.

Here in credit card fraud detection, neural network differences the information into various categories; first one is based on cardholder income, occupation. Another one grouping will store the payment details like, number of larger purchasing, frequencies of largest purchases, location. This wholes the detail is successful to judge the future transaction whether the transaction is fraud or genuine [1]. Figure 5.2.1 show how the neural network would process. In this architecture, there are three different types of layer

▪ **Input Layer:** This layer has input nodes, it will identify the cardholder use the information it will check the characteristics of the transaction.

▪ **Hidden Layer:** Hidden nodes are do neural network operation to identify the transaction fraud or not.

▪ **Output Layer:** After analysis the transaction output nodes give the output value, it between 0 and 1.

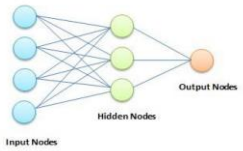

Figure 5.2.1: Neural Network Architecture.

K-means Clustering:

Clustering refers to creation a group of data form the provided database. When it is required means if we want some group of information or it will know the same pattern for analysis. Clustering supports in bank database for finding priority of customers and to draw similar kind of fraud techniques used in fraud detection. To know the transaction is whether fraud or legal clustering uses one of the most used K-means algorithm [7].

In transaction we state some variable like, transaction amount, credit card number, transaction date and id, country, merchant category id. Here credit card number is essential if we forget we can't do the transaction this process done in transaction validation section. The information which we grew as an input those will going to store in transaction dataset. Next we allot of the cluster name in which type of transaction that is and label it as, low cluster or high cluster or risky cluster [8]. The transaction detail will yield over to k-means algorithm. If the transaction is fraud or authorized it displays a message.

Hidden Markov Model:

Hidden Markov Model is a set of states related with the probability distribution. Each state makes outcome or observation according to the probability distribution which is associated with the particular state. The state is observable but the only observation or outcome are can be visible that is called Hidden Markov Model [5].

In credit card detection, HMM is used to discover the fraud transactions by the spending behavior of cardholder. Spending behavior of the cardholder is designed by the past history of transaction, that history has the attributes like transaction amount, IP address, shipping address & location of last transaction, etc. Here we categorize the cardholder behavior into three types like,

1. Low spendingbehavior
2. Medium spendingbehavior
3. High spendingbehavior

If the cardholder devotes low amount, they under in low spending behavior, if the cardholder spending Medium level of amount they under in medium spending otherwise the cardholder who spends high amount they came in the group of high spending behavior

Figure 5.4.1 display the credit card fraud detection using HMM. In first level is profile identification, here

we study the profile in which category the cardholder came it depend on the purchasing detail [4]. Hidden Markov Model customs two steps of training sequence to find the fraud detection.

1) From the past business history, Hidden Markov Model is been trained.

2) Take the input and check whether the businesses details are accepted by training sequence are not.

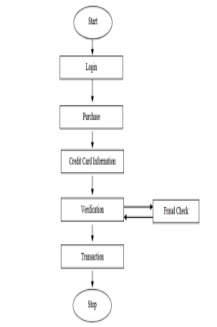

Figure 5.4.1: Fraud detection Using Hidden Markov Model.

Genetic Algorithm

The main goal of genetic algorithm is to obtain the better optimal solution, and also fraud transactions are generated with the given ample data set. This process work in the manner of efficient and secure electronic payment detect whether a transaction is fraud or not [7].

In credit card business it has n number of attributes. In first step it would choice the data set which one going to the process from that we select the standardize the data, which will include the full detail about the cardholder. Figure 5.5.1 displays the detection using genetic algorithm [2]. Compute the critical values, from the frequency use of credit card count, current bank balance, credit card overdraft, location where they use credit card on that particular transaction, average daily spending. Then we equal the data critical, finally we know the transaction is fraud or that one is legal.

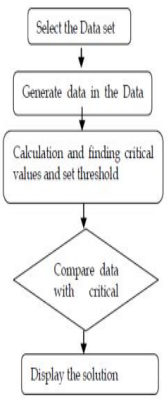

Figure 5.5.1: Credit Card Fraud Detection using Genetic algorithm.

VI. CONCLUSION

In latest years, credit card usage has increased significantly. Fraud operations are also newly incoming in another way; there are more techniques introduced to detect the frauds. Main aim of this study is to tell about the best technique that identifies fraud cases. One of the data mining techniques or combination of these techniques can be applied for credit card fraud detection system. The best way of credit card fraud is discovery from the history of transactions; it predicts if the transaction is legal or fraudulent. In this paper we survey around four best data mining techniques for credit card fraudulence detection. Comparing their results we accomplish the techniques decision tree and hidden Markov Model are the best way to find the fraud detection. Decision tree mostly notice the fraud using location. Hidden Markov Model detect the fraud depend upon the cardholders behavior and history of transactions, but we want further improvement in both the techniques to avoid frauds more in future.

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A SURVEY ON CURRENT TRENDS AND TECHNIQUESOF DATA MINING RESEARCH

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I. ABSTRACT
Data mining is helpful in obtaining knowledge from large domains of databases, data warehouses and data marts. Different and current parts of data mining also discussed. Issues and tasks of data mining along with various open source tools are addressed as well. This paper surveys different aspects of data mining research.Data mining is an important and developing research area and used by the biologists to statisticians and computer scientists as well.

Keywords: data mining, knowledge discovery in databases, challenges of data mining,areas and tools in data mining

II. INTRODUCTION
Data mining is extract information and knowledge from huge amount of data. Data mining is an important step in discovering knowledge from databases. There are various numbers of databases, data marts, data warehouses all over the world. A data mining system may generate lots of patterns. . Typically a small number of fraction of the patterns are interesting. Here the interesting means useable, valid and novel. Moreover, it is almost not possible to extract the interesting hidden patterns in the sea of data without the help of data mining tools. There are seven steps in data mining. They are data cleaning, data integration, data selection, data transformation, data mining, knowledge presentation and pattern evolution.Database technology had generate from primitive file processing to the development of data mining tools and applications. The data may be gather from various applications including science and engineering, management, business houses, government administration and environmental control. Interesting data patterns may be mine from spatial, time-related, text, biological, multimedia, web and legacy databases.Data mining help management in decision making. The data mining job include the discovery of concept descriptions, association, classification, prediction, clustering, trend analysis, deviation analysis and similarity analysis. Data mining in large databases pose various requirements and challenges for the researchers and developers. A multidimensional data model is used for the plan of data warehouses and data marts.

III. DIFFERENT AREAS OF DATA MINING
3.1 Web Mining
As there is enormous amount of data and information available in the World Wide Web, the data miners have a fertile area for web mining. Web mining is data mining technique for extraction of information from web documents and services. The contents of the web are very dynamic.
3.2 Text Mining
The term text mining or KDT (Knowledge Discovery in Text) was first projected by Feldman and Dagan in 1996 [2]. The unstructured text may be mined using information retrieval, text categorization, or applying NLP techniques as a preprocessing step. Text Mining involve many applications such that text categorization, clustering, finding patterns and sequential patterns in texts, computational linguistics, and association discovery.
3.3 Spatial Data Mining
The spatial data mining deal with data related to location. The blast of geographically related data for rapid development of IT, digital mapping, remote sensing, GIS demands for developing databases for spatial analysis and modeling. Spatial data information,

classification, association, clustering, trend, and outlier analysis are the main components for spatial data mining.

3.4 Multimedia data mining

Multimedia data mining explore the interesting patterns from databases related to multimedia that manages a large collection of multimedia objects. Multimedia object include audio, video, image, sequence data and hypertext data containing text, text markups, and linkages. Multimedia data research focus on content-based retrieval, similarity search, association, classification and prediction analysis.

3.5 Time series data mining

A time series database change its values and events with respect to time. Some of the examples of time cycle data are stock market data, business transaction data, dynamic production data, medical treatment data, web page access sequence and so on. The time series research involves issues related to similarity search, trend analysis, mining sequential and periodic patterns in time-related data.

3.6 Biological data mining

There is a large storage of scientific and biological data from DNA microarray data, genomic sequences, protein interactions as well as sequences, electronic health records, disease pathways, biomedical images and the list goes on. In the scientific context, biologists are trying to find the biological processes that are the cause of a disease. There are some issue related to these high-dimensional biological data. These matter include noisy and incomplete data, integrating various sources of data and processing computer intensive tasks. Biologists as well as scientific scientists used a variety of data mining tools to discover interesting and meaningful observations from a large number of heterogeneous data from different biological domains

3.7 Educational data mining

Educational Data Mining (EDM) is an rising research area concerned with the unique types of data that come from educational settings, and using those methods to better understand students. Educational Data Mining focus on developing new tools and algorithms for discovering data patterns. EDM develop methods and applies techniques from statistics, machine learning, and data mining to analyze data collected during teaching and learning. New computer-supported interactive learning methods and tools have opened up opportunities to collect and analyze student data, to discover patterns and trends in those data, and to make new discoveries and test hypotheses about how students learn. Data together from online learning systems can be aggregated over large numbers of students and can contain many variables that data mining algorithms can explore for model building. Different student model are used for prediction of future learning behavior of the students. Computational models are used base on the student domain and pedagogy.

3.8 Constraint-based data mining

Constraint-based data mining is one of the increasing areas where the data miners use the constraint for better data mining. One of the applications of constraint-based data mining is Online Analytical Mining Architecture (OALM) developed by [3] and is designed for multidimensional as well as constraint based mining based on databases and data warehouses. Usually, data mining techniques lack user control. One form of data mining is where the human association is there in the form of constraints. There are various types of constraints with their own characteristics and purpose.

IV DATA MINING TOOLS

The following are the general data mining open source tools.

4.1 WEKA

Weka was initially developed in a non-Java version for analyzing agricultural data. Later, the Java version was developed, and it became a great tool for different data mining applications like predictive modeling and data analysis. This software is open under the GNU General Public License, which is a big advantage compared to Rapid Miner. As it is open under the GNU General Public License which is a big advantage of it as compared to its counterparts like RapidMiner. It can be customized by the users. Most of the data mining jobs are support by Weka. They are organization, clustering, regression, feature extraction, visualization, etc. Its graphical user interface make it a better-sophisticated tool for data mining process. So, Weka has become one of the most great open source data mining software

4.2 RapidMiner

This tool is written in Java programming language, and it offer analytics of advanced level through its template-based framework. Users hardly have to do any coding. RapidMiner is accomplished of handling various tasks like statistical modeling, predictive analytics and visualization apart from data mining tasks. RapidMiner provides learning schemes, models and algorithms from WEKA and R scripts that make it more powerful. This open source is spread under the AGPL open source license and it can be downloaded from SourceForge. It is one of the best business analytics software. All the data mining tasks are bundle in one single suite

4.3NLTK

When it come to language processing tasks, NLTK is one of the major players. NLTK is use for machine learning, data mining, sentiment analysis and data scraping. It is also extensively used for language processing. Because it's written in Python, one can make applications on top of it, customizing it for small tasks. NLTK played a major role as a teaching tool,

study tool, prototyping and can be use as a platform for high-quality research.

VI. DATA MINING TECHNIQUES

Several data mining performances are used in data mining tasks. Association, classification, clustering, prediction, sequential pattern mining, etc. are data mining techniques.

6.1 Classification

Classification finds rules that separation data into some groups. The input for the classification is the training set. The training set's class labels are already known. Classification assigns class labels to unlabelled records based on a model that acquire knowledge from the training datasets. Such classification is known as supervised learning as the class labels are well-known. There are several classification models. Some of the general classification models are decision trees, neural networks, genetic algorithms, support vector machines, Bayesian classifiers. The application include credit risk analysis, fraud detection, banking and medical application, etc.

6.2 Clustering

Clustering is a technique of grouping data so that data within the cluster have high similarity and dissimilar to data in other groups. Clustering algorithms may be use for organizing data, categorize data for model construction and data compression, outlier detection, etc. Many clustering algorithms were developed and are categorized as partitioning methods, hierarchical methods, density based and grid based methods. The datasets may be numerical or categorical. K-Means, hierarchical, DBSCAN, OPTICS, STING are some of the famous data clustering algorithms [4].

6.3 Association Rule Mining

Association rule mining is a well-researched method for discover interesting relations between variables in large databases. In association rule, the term is of the form X=>Y, where X and Y are set of items [2]. The main objective is to discover all the rules that have support and confidence greater than or equal to minimum support or confidence in a database. Support means that how often X and Y occurs jointly as a percentage of total transactions. Confidence way that how much a particular item is dependent on another. There is no importance for the patterns with low confidence and support. The users can remove useful and interesting information from the patterns with intermediate values of confidence and support. The association rule mining algorithms consist of Apriori, AprioriTid, Apriori hybrid and Tertius algorithms [4].

6.4 Neural Networks

Neural networks are new computing paradigm that is inspired by the biological nervous system, such as the understanding, to process information [4]. It involves increasing mathematical structures with ability to learn [2]. The Neural networks have the ability to remove meaningful and useful patterns and trends from the complex data. It is related to real world problems especially in case of industry. As the neural networks are good at identify patterns or trends, they may be applicable for prediction or forecasting needs. The system is collected of highly interconnected processing elements (neurons) working together to solve a specific problem. Artificial neural network (ANN) learns by example [5]. ANN is configured for particular application as classification, pattern recognition etc. through a learning process. It may also be used for threedimensional object recognition, hand-written word recognition, face recognition, etc. Neural networks have the problem of not explaining the derived results. Another problem is that it suffer from long learning times. As the data grows, the situation becomes bad for that problem.

6.5 Support Vector Machines

Support vector machines (SVM) belong to a new category of machine learning algorithms and are based on statistical learning theory [2]. The main concept is to non-linearly plot the data set into a high dimensional feature space and use a linear discriminator for classification of data. It is mainly used for regression, classification and decision tree construction. SVMs select the plane which maximize the margin separating the two classes. The margin is defined as the distance between the separating hyperplane to the nearby point of A, plus the distance from the hyperplane to the nearest point in B, where A and B are two linearly distinguishable sets. SVM has been used in many applications as well as face detection, handwritten character and digits recognition, speech recognition, image and information retrieval [6].

6.6 Genetic Algorithms

Genetic algorithms are a new model in computing inspired by Darwin's theory of evolution [2]. A population of the being with feasible solution to a problem is created initially at random. Then the intersect is done by combining pairs of individuals to produce offspring of next generation. A mutation process is used to change the genetic structure of some members of new generation randomly. The algorithm searches for a solution in the successive generation. When an optimum solution is establish or some fixed time is elapsed, the process comes to an end. Genetic algorithms are widely used in problems where optimization is compulsory.

VII.CONCLUSION

The use of data mining in enrollment management is a equally new development. Current data mining is done

mostly on simple numeric and categorical data. In the future, data mining will consist of more complex data types. In addition, for any model that has been designed, further modification is possible by examining other variables and their relationships. Research in data mining will result in new methods to define the most interesting characteristics in the data. As models are developed and applied, they can be used as a tool in enrollment management.

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EMOTIONAL INTELLIGENCE

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ABSTRACT: The conception of emotional intelligence (EQ) has newly become a hot topic in psychological research in the manner in which it influences the workforce in today's world. It is funny to view how the idea of emotional intelligence evolved over time. This research will expand the different aspects and context of EI, since the purpose is to explain how EI can be a key to success. Also, the study intends to demonstrate how important EI is not only in a social context, but also in professional context, in order to help people with insufficient social interactions skills. People who are emotionally intelligent create self-awareness a priority.

Emotionally intelligent people are proficient at acknowledging, processing, and responding to their bodies and emotions efficiently. Developing emotional capability obliges learners to do away with old propensities for thought, feeling and activity that are profoundly instilled and learn new ones. Leaders could most likely profit from the utilization of emotional intelligence as the capacity to see emotions, absorb of emotions, comprehend emotions and oversee emotions are fundamental skills for leaders to deal with their workers and control the working environment circumstance actually, leaders that utilized more all encompassing skills are more inclined to make a more note worthy working environment condition.After carrying out the research, it was realized that emotional intelligence is vital in order to achieve professional and social goals. Even though, emotional intelligence is not fully understood, it is also clear that emotions play a much vital role in the full quality of people's personal and professional lives – more seriously compare with the real measure of their brain intelligence (IQ). When it come to achievement and happiness in life, EQ matters equally as IQ. In short, emotional intelligence assists people to found stronger relationships, to thrive in their works and achieve their personal & career goals.

Keywords: Emotional intelligence, EI, making.

I. INTRODUCTION: The development of emotional brainpower have freshly go off to a sizzling theme in mental research inthe manner in which it influences the workforce in today's humanity (Zeidner, Roberts & Matthews,2002). More importantly, businesses are all about people, consequently anything that has the influence in the efficiency of their minds also affects how production are operated or worked for (Mayer, Salovey& Caruso, 2000).

Emotional intelligence (EI) may be alive comprehensively characterized as a set of aptitudes, abilities, and aptitudes for overseeing feeling in addition to emotive experiences (uncertain strain between seeing emotions as mediocre compared to cause versus esteeming emotions Zeidner, Roberts, & Matthews, 2009). From a Western truth-seeking viewpoint, the idea of EI may be surrounded within the as a physical for action (Petrides & Furnham, 2001).

"Emotional intelligence isn't a luxury you can dispense among in tough times. It's a basic tool that, deployed with finesse, is key to proficient success." Emotional Intelligence (Emotional Quotient or EQ) is the ability to use emotions efficiently and it's the foundation for high-performing relationships. More than ever, organizations necessitate true leaders who restore trust, hope, ethics, and direction: leaders who know how to connect their people. Gain an preamble to emotional intelligence, the key competencies of EQ, ways of identifying the impact of EQ in your agency, tools for self-management, and for improving the quality of relationships, accountability and customer withholding.

II.WHAT IS EMOTIONAL INTELLIGENCE

Emotional intelligence refers to the capability of a individual toward manage and control his or her emotions and possess the ability to control the emotions of others as well. In other language, they can influence the emotions of other people also. Emotional intelligence, otherwise identified as **EQ**, helps us better understand what motivates others. It also helps us work more cooperatively with others.The more skillful you are at discerning the feelings behind others' signals the better you will be able to control the signals you send back to them. As a result, you will be more successful in life.

- Emotional intelligence refers to the ability to recognize and manage one's own emotions, as well as the emotions of others.
- Emotional intelligence is usually said to comprise at least three skills: emotional awareness, or the ability to identify and name one's own emotions; the ability to harness those emotions and apply them to tasks like thinking and problem solving; and the ability to manage emotions, which includes both regulating one's own emotions when necessary and helping others to do the same.
- There is no validated psychometric test or level for emotional intelligence as there is for "g," the general intelligence factor—and many argue that emotional intelligence is therefore not an actual build, but a way of describing interpersonal skills that go by other names.
- Despite this criticism, emotional intelligence ("emotional quotient," or "EQ" as it's sometimes known) has wide appeal among the general public, as well as in certain sectors. In recent years, some employers have even included emotional intelligence tests into their application or interview processes, on the theory that someone high in emotional intelligence would make a better leader or coworker.
- While some studies have found a link between emotional intelligence and job performance, others have shown no correlation, and the lack of a scientifically-valid scale makes it difficult to truly calculate or predict someone's emotional intelligence on the job.

❖**What are Emotions?**

An emotion is a normal instinctive state of mind deriving form one's circumstances, mood, or relationships with others.The concept of emotion may seem simple, but scientists often have trouble agreeing on what it really means. Most scientists suppose that emotions involve things other than just

- **Some Positive Emotions:**

Love, Appreciation, Happiness, Hope, Enthusiasm, Confidence, Gratitude, Patient, Trust, Vulnerable, Optimistic, Appreciative.

- **Some Negative Emotions:**

Fear, Anger, Guilt, Depression, Jealousy, Anxiety, Resentment, Envy, Frustration, Shame, Offended, Regret, Resentful, Sad, Worried.

III:FUNCTIONS OF EMOTIONS

1. Arousal (energy)
2. Motivation

1. **Arousal:** Arousal is the energy that powers emotion. Even without emotional stimulation, arousal ebbs and flows in roughly 90-minute cycles throughout the day, including while we sleep. At peak arousal times, we are more susceptible to intense emotional response.
2. **Motivation:** Motivation is the most important component of emotions. We cannot understand ourselves or other people without understanding motivation. We almost always fail to act in our best interests when we ignore motivation.

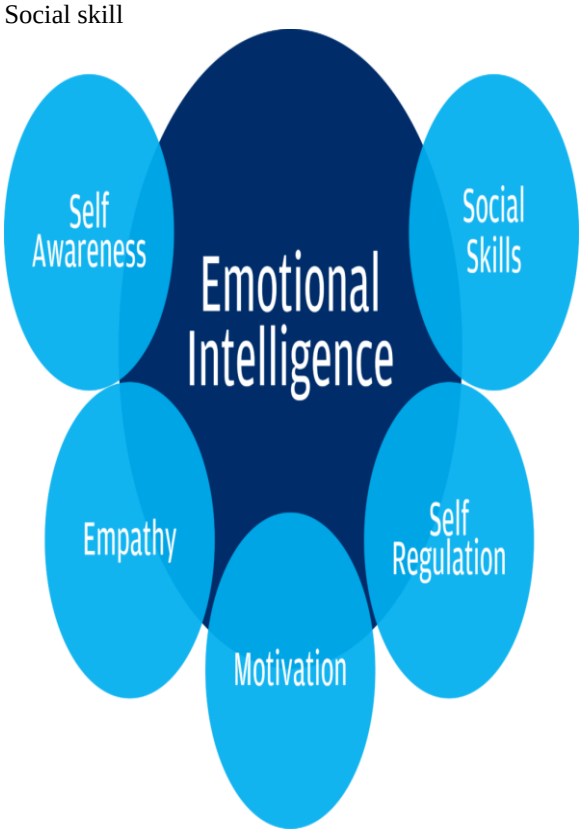
❖**Types of Motivation:**

- **Interest:** find out more, get beneath the surface
- **Passion:** indulge, plunge
- **Conviction:** work to keep the status quo or change it
- **Compassion:** sympathize with the pain and hardship of self and other
- **Enjoyment:** appreciate, relax with
- **Anxiety:** learn more, increase ability to cope
- **Shame:** hide, cover-up.
- **Distress:** get back what was lost or compensate for its loss; consolidate gains.

IV:FEATURES OF EMOTIONAL INTELLIGENCE:-

Daniel Goleman resolute that there are five fundamental features of EQ, each with their own benefits:

1. Self-awareness
2. Self-regulation
3. Empathy
4. Motivation
5. Social skill



1. **Self-awareness:** Self-awareness is the ability to accurately recognise your: emotions, strengths, limitations, actions and understand how these affect others around you.

❖ **Benefits:**

- Increases the probability of you handling and using constructive feedback effectively.
- By knowing your strengths and weaknesses you can improve your organisation's performance, for

example, you may hire individuals who perform well in areas you struggle with.

❖**Improve self-awareness by:**

- Keeping a diary of the situations that have triggered disruptive emotions in you, such as anger, and your thoughts and behaviours during those situations. With this information you can form an understanding of your emotions and reactions and work towards self-regulation.
- Receiving advice from staff as this can highlight how others perceive you and it also helps you target unhelpful reactions.
- Observing the response others have to your behaviour.

2. **Self-regulation:** Self-regulation allows you to wisely manage your emotions and impulses - you show or restrain certain emotions depending on what is necessary and beneficial for the situation. For example, rather than shouting at your employees when you're stressed you may decide which tasks can be delegated.

❖**Benefits:**

- Self-regulation helps earn the respect and trust of employees.
- Useful when adapting to change.
- Allows you to react rationally.

❖**Improve self-regulation by:**

Taking responsibility if you have made mistakes. Rather than blaming others admit that you are at fault. You'll feel less culpable and your team will respect you for it.

Responding to situations calmly as your communication is more effective when you're in this state and this feeling will spread to others. gasp techniques, such as controlled breathing, can be useful practice.

3. **Empathy:** To be empathetic means you are able to identify and understand others' emotions i.e. imagining yourself in someone else's position.

❖**Benefits:**

- Provides you with an understanding of how an individual feels and why they behave in a certain way. As a result, your compassion and your ability to help someone increases because you respond genuinely to concerns.
- Especially helpful when delivering constructive feedback.
- Being empathetic shows your team that you care. For example, if a manager reacts angrily after judgment out that an employee has been arriving to work late because their child is unwell, the team is likely to react negatively towards the manager. It would be additional favourable for the manager to be understanding and agree on a plan of action with the employee, such as, the employee starting work earlier and finishing later.
- Employees will respect you more and subsequently job performance will improve.
- To develop empathy:
- Imagine yourself in someone else's position. Even if you have not experienced a similar situation, remember a situation where you have felt the same emotion your employee is experiencing.
- Practice listening to your employees without interrupting them.
- Observe your employees and try to gauge how they're feeling.
- Never ignore your employees' emotions, for example, if an employee looks upset don't disregard this - address it.
- Try to know first rather than form a judgement. For example, you may initially feel annoyed at an employee who seems cold and disinterested. However, after discovering they suffer from social anxiety you may feel more sympathetic.
- To communicate your empathy keep your body language open and regulate your voice to show your sincerity.

4. **Motivation:** Being self-motivated consists of: enjoying what you do, working towards achieving your goals and not being motivated by money or status.

❖**Benefits:**

- Reduces your likelihood of procrastinating
- Increases self-confidence
- Keeps you motivated even if you face setbacks
- Makes you focused on achieving your goals
- Spreads to the team
- To increase your motivation:
- Remember why you're doing your job - perhaps think about why you wanted it initially.
- Set new goals if you lack them.
- Remain optimistic because to be motivated you must be positive. Even when there is a hinder or a challenge identify one positive factor about it.
- To increase your employees incentive explain why they are valuable, using example, as this will provide them with a sense of purpose.

5. **Social Skills:** Effective social skills consist of managing dealings in a way that payback the organisation.

❖**Benefits:**

- Effective social skills helps you to build bond with your employees and earn their respect and loyalty.
- Employees will trust you which is especially valuable if unwelcomed decisions have been made, such as a rise in performance targets.
- When you interact with your employees you can identify the best way to meet their individual needs and identify how their abilities can be used to achieve the organisation's aims.
- Staff will feel comfortable present ideas to you and discussing concerns.

❖**Improve social skills by:**

- Developing your communication skills. Problems can arise if there is bad statement, such as, misunderstandings upsetting employees. Listen to

feedback to work out what to target, for example, the way in which you speak may need work or perhaps your body language.

- Learning how to give praise and constructive feedback.
- Cooperating and working together with your employees because you are all working towards a shared goal.
- Listening to employees and practicing empathy.
- Building relationships with your employees will assist you in understanding how to manage each individual.
- Resolving conflict by looking at the situation from all the viewpoints involved and try to come to a compromise that benefits everyone.

V:EMOTIONAL INTELLIGENCE MODELS

After all the research done in the field of emotional intelligence by Peter Salovey, John Mayer, David Goleman, and Konstantin Vasily Petrides, they have come up with three main models of emotional intelligence. These include the ability model, the mixed model, and the trait model. We focus most on David Goleman's Mixed Model.

❖ Ability Model

This model was developed by Peter Salovey of Yale University and John Mayer of University of New Hampshire.

- Perceiving emotions: understanding nonverbal signs such as other peoples body language or facial expressions (Salovey & Birnbaum)
- Reasoning with Emotions: using emotions to promote judgment and cognitive activity (Salovey & Birnbaum)
- Understanding Emotions: Interpreting emotions of others around you, being able to recognize people display emotions of anger when they might not be angry at you but rather the situation
- Managing Emotions: regulating emotions, responding appropriately and consistently

❖ Mixed Model

This model was developed by David Goleman. Golemans model uses "The Five Components" to efficiently describe emotional intelligence.

- Self-Awareness (confidence, recognition of feelings)
- Self-Regulation (self-control, trustworthiness, adaptability)
- Motivation (drive, commitment, initiative, optimism)
- Empathy (understanding others feelings, diversity, political awareness)

Social Skills (leadership, conflict management, communication skills)

❖ Trait Model

This model was urbanized by Konstantin Vasily Petrides. He separate the trait model as "a constellation of poignant self-perceptions situated at the inferior level of personality."

- Ones understanding and insight of their emotion
- The use of behavior structure to examine trait emotional intelligence

VI:WHAT IS THE IMPORTANCE OF EMOTIONAL INTELLIGENCE?

The term *'Emotional Intelligence',* first coined by psychologists Mayer and Salovey (1990), refers to one's capacity to perceive, process and regulate emotional information accurately and effectively, both inside oneself along with in others and to use this in order to conduct one's opinion and actions and to influence those of others.

Emotional intelligence can go in front us on the path to a rewarded and cheerful life by providing a **framework** throughout which to apply standards of intelligence to emotional responses and understand that these responses may be logically consistent or inconsistent with particular beliefs about emotion.

As the workplace evolves, so too does the body of research supporting that individuals (from interns to managers) with higher EI are better equipped to work cohesively within teams, deal with change more effectively, and manage stress – thus enabling them to more efficiently pursue business objectives.

Goleman (1995) recognized five distinct categories of skills which form the key characteristics of EI and proposed that, unlike one's intelligence quotient (IQ), these categorical skills can be learned where absent and improved upon where present.

Thus, EI, unlike its relatively fixed cousin, IQ, is instead a dynamic aspect of one's psyche and includes behavioral traits that, when worked upon, can yield significant benefits, from personal happiness and well-being to elevated success in a professional context.

Why Emotional intelligence is important in order to achieve professional and social goals and how can it being influenced by communicational skills?

Thesis statement:

This investigate will widen the different aspect and context of EI, as the reason is to give clarification how EI be able to be a key to achievement. Also, the learn intends to reveal how significant EI is not only in a social context, but also in professional context, in order to help people with insufficient social interactions skills. However, whatever people explain it, in layman's terms, emotional intelligence is the height of their ability to:

- Recognize and comprehend their reactions and emotions (self-awareness);
- Run, organize and adjust their emotions, response and reaction (self-management) (Zeidner et.al, 2002);
- Harness their emotions in order to motivate ourselves to pursue suitable actions, follow-through, commit and work towards their goals' achievement (motivation);

- Discern others' feelings, comprehend their emotions, and apply that comprehension in order to associate with other people more effectively (empathy), (Mayer et.al, 2004);
- Establish relationships, negotiate conflict, lead, work in a team and associate to others in social circumstances (social skills).

VII:ADVANTAGES OF EMOTIONAL INTELLIGENCE IN BUSINESS LIFE

❖**Motivation:**By taking advantage of emotional intelligence in business, we can control our emotional state and reach an agreement with each problem. Thus, we can take control of the conflicts and contribute to teamwork. A positive working environment means everything. It increase together the incentive of both; you and your colleagues.

Common vision. nearly everyone of us expend the majority of our time at work. For this reason, as much as happy and positive emotions we also face problems like anger, lack of empathy, nervous crises. In such situations, emotional intelligence is what comes to our rescue. By taking advantage of our emotional intelligence, we can demonstrate consistent behavior this change of our emotions and communicate positively to the people around us. Only then it is possible for us to develop a common vision for our team members.

❖ **Change:** Every individual who wants to be professional in the business world has to be open to change and innovation. since these two are amongst the first to grade for leadership features. People with elevated moving intelligence can run the stress, concern, and anxiety in the business world and turn it into an opportunity. And in this way, they are clever to growth more easily and self-assuredly in business life.

❖ **Communication:**People with high emotional intelligence can express themselves clearly. Thus, they make respect from others and create an effectual message network flanked by them. They can solve problems by staying calm, they are open to getting help from others, and are able to power others with these behaviors. This resolve help you to contain a peaceful business surroundings and to be winning in a short time.

❖ **Leadership:**The foundation of achievement in commerce life, in a word; management, is the leadership skill. And this skill starts with the person himself/herself. As extended as one can control of himself/herself, emotions and thoughts, s/he can also influence others in the positive direction; and lead in term of business. Being someone who can manage their emotions for success in business life, will help you achieve your goals.

realize they can use their emotions and the emotions of others in a rational manner for business and workplace success. Though emotional intelligence can be used in a positive manner, it has some disadvantages.

❖**Time:**It takes time to increase the skills indispensable to fully connect emotional intelligence. sadly, this cannot be learned at once. Our own special history, habits, fears, self-esteem and beliefs all pressure our ability to study and connect this skill. Learning how to direct your emotions, stimulate yourself, recognize the emotions of others, handle your individual relationships and be relevant your information of emotional intelligence all take time and dedication to be winning.

❖**Testing:**It's difficult to test for emotional intelligence. One of the major concerns by testing method is the discuss on whether emotional intelligence is base on a person's nature and character, or whether it is a erudite response urbanized through interpersonal skills and experiences. In other words, it falls into the nature versus nurture debate and how to grip it. difficult based on the scenery feature will look at character, emotional stability and meticulousness of the person to decide emotional intelligence. The care for advocates will look at publicly established aspects in the direct area, management skills, teamwork and scholarly interpersonal skill

❖**Negative Views:**People capacity not take the substance of emotional intelligence seriously. As with many aspect of life, this topic is open to personal opinions and ridicule. Some people in the business world consider the place of work is no place for emotional reactions. These persons think logic ought to rule and emotions ought to stay at home.Being able to recognize and recognize emotions, intentionally believe about them and use them in a rational way are the main mechanism of emotional intelligence. The design of emotional intelligence has establish some timbre in the commerce world because people comprehend they can employ their emotions and the emotions of others in a logical way for business and place of work success. though emotional intelligence can be used in a optimistic manner, it has a number of disadvantages.

❖**Misuse:**With awareness learned with emotional intelligence, you can compose choices that best dole out you and affect others. However, some people could use this knowledge to manipulate others. A person who would use this unconstructively could also purposely prey on unsuspecting persons. since emotional intelligence is frequently used in the workplace and in business settings, people might use this to entice a target audience to purchase an item or buy a repair based on an emotional plea. It could also be second-hand to make a person feel lesser or to draw out certain information.

IX:CONCLUSION: VIII:DISADVANTAGES OF EMOTIONAL INTELLIGENCE: cr

The thought of emotional intelligence has in fresh times urbanized hot debate in psychological research in the manner in which it influences the labor force in today's world (Zeidner, Roberts & Matthews, 2002). Preponderance of expert currently believe that an individual's emotional intelligence quotient (EQ) might be more vital compared with their IQ and is

definitely a better sign of success, overall happiness and quality within relationships (Leahy, 2007).

According to Mohan, Malhotra&Mangla (2003), preponderance of people have presently expressed different opinions regarding the emotional intelligence scientific feasibility. Thompson (2013), emotional intelligence (EI) is a somewhat new increase in differential brain research. That is because EI has been regarded to have double effects compared to IQ yet it has been considered as an "elusive concept" (Wheatley, 1999).

After carrying out the research, it was realized that emotional intelligence is vital in order to achieve professional and social goals. Emotional intelligence have be proved to assist people prosper in their working, physical & psychological wellbeing and in relating with their colleagues (Nickerson, 2000). Emotional intelligence is also influenced by various communication skills that affect the intelligence of others (Sewell, 2011).

EI can also be a key to success which is applied not only in social context but also in professional fields. Studies show that people with great emotional intelligence are able to identify their own emotional statuses, those of other individuals and associate with them in a manner that attracts them (Salovey& Caruso, 2004). For effective leadership in regard to emotional intelligence, leaders should be mindful, idealistic and ready to motivate their members, watchful of others and handling challenges serenely for better growth of their organizations.

The good thing about EQ unlike IQ is that it does not change with time and can also be improved by people of various ages and in different fields. There are also ways via which individuals can train and add to their emotional intelligence (Salovey et.al, 2004). Nevertheless, in order to grow emotional competence, it is necessary for them to unlearn the old feelings, old habits and practices that are deeply ingrained to give room for the new ones to develop (Petrides&Furnham, 2001).

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I. IMPLEMENTATION OF MACHINE LEARNING ALGORITHMS BASED ON FEATURE SELECTION AND PERFORMANCE MEASURE

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Abstract

Web Text mining discusses to the practice of stemming high quality information from the text. Research and application of web text mining is an important branch of data mining. Mostly researchers using search engine, information retrieval and many outlier's detection techniques to search the knowledge based information. Web contains mostly structured data and unstructured data structured data which is only 5% to 10% of whole data. Around 80% of data is Unstructured [1]. At the time of functioning with unstructured data like text and multimedia contents. This paper defines best machine learning techniques which are helpful in the analysis of text data from the web and performances with text pre-processing, classification and clustering. This paper shows the experimental results obtained from techniques and discuss the advantage and challenges. Also infers which machine learning technique is more relevant for processing data from the various text.

Keywords— Classification, Text Mining, Extraction, Stemming, SVM, Stopword Removal

Introduction

It is witnessed that text mining on Web is a crucial step in research and application of data mining. We are mainly using information retrieval, search engine for detection techniques to look up the resourceful and preferred Web information. There are mainly two forms of data on web Structured data and unstructured data. There are numerous procedures to handle structured data. The main problem on text mining on Web is handling unstructured data. Text classification model is contains three major modules i.e. pre-processing of unstructured data, learning of probabilistic model and the classification of unseen data by using learned model.

This study projected on first conversion of unstructured data into structured words which is required for text classification. This framework is trained and tested by using "Restaurant Reviews" dataset containing different positive and negative reviews about restaurant infrastructure, food, décor and services. In this paper the text dataset and then categorization with the help of traditional bag-of-words model approach to the unconventional neural networks also compared with the pros and cons of the methods applied.[1]

In this paper feature selection process in filtering website author used two existing term weighting schemes namely TFIDF and Entropy. Their study observes the performance of both methods applying on datasets and compared with term weighting schemes. The correctness of these term weighting schemes as the selection features is measured according to the accuracy of the outcomes acquired using the classification technique known as Support Vector Machine (SVM). Author concluded existing term weighting schemes namely TFIDF used as feature selection process in filtering text and examine the performance of technique using datasets the correctness of these term TFIDF as the selection of features is measured according to the accuracy of the results obtained using the classification program known as Support Vector Machine (SVM).

Related Work

Dixa Saxena, et. al. in their study applied and discussed all the possible methods on supervised and unsupervised learning for feature extraction from the

that the performance of TFIDF and Entropy on the basis of Accuracy. Results showed that TFIDF performed better than Entropy. [2]

In this paper author used unlabeled samples of short text as dataset for their classification, in their study they combined the SVM and semi-supervised learning to learn and label the unlabeled collected samples in the short text and study the effect of both the trained classifier and general model. In this paper, proposed semi-supervised learning and SVM algorithm is compared with the KNN algorithm and concluded with the result that the proposed classifier classify a large number of short texts and mining the useful information from the short text. [3]

Author proposed the fake news detection with the help of hybrid classification model to improve accuracy of the fake news. The fake news detection procedure is carried out in three parts which are pro-processing, feature extraction and classification. The hybrid classification designed is the combination of the KNN and random forest. The performance of the proposed model is analyzed in terms of accuracy, precision and recall. According to the result obtained up to 8% overall results are better with the use of proposed hybrid model as compared with SVM. [4]

In this paper they analyze the sentiments for movie Review, Twitter and Gold dataset using optimized SVM. They made Comparison between Optimized Support Vector Machine towards Support Vector Machine and naïve bayes classifier also Modify hyper parameter value of RBF kernel SVM which gives better result as compared to Support Vector Machine and Naïve Bayes algorithm. Projected methodology has establish best value for hyper parameter which classifies dataset with more accuracy than existing system. Also suggested that there are many function of SVM kernel exists with many hyper parameters which can be used to get the better performance. [5]

Proposed Methodology

In the proposed experiment and for mining purpose "Restaurant Reviews" dataset is used. The first process to carry out is the preprocessing of data which include stopword and stemming.in the next step feature extraction is done for getting the machine learning algorithms supported format from datasets containing arrangements of text and image. After feature extraction the dataset obtained is given as a input to the Classification Algorithms like SVM, Random Forest, Naïve Bayes. Here 60% of data is taken as training set and rest 40% for testing dataset. A confusion Matrix is created which classifies both positive and negative reviews. On the basis of Confusion matrix the accuracy score is calculated, the whole process is shown in Figure1.

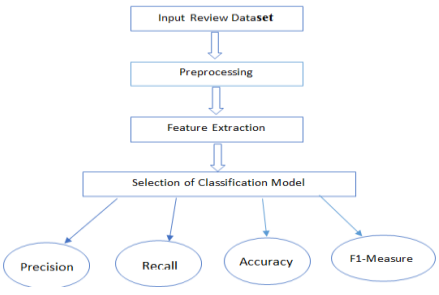

Figure1: proposed Architecture

Naive Bayes:

Based on **Bayes' Theorem,** Naive Bayes classifiers are a collection of classification algorithms which is not an individual algorithm but a category of algorithms where all algorithms share a common principle, i.e. all pairs of features being classified is independent of each other. It is used only when the dimensionality of the inputs is high. The Bayesian Classifier is capable of computing the possible output based on the given input. In this method it is possible to add new raw data at runtime and have a better probabilistic classifier. Naive Bayes classifiers are among the most successful known algorithms for learning to classify text documents. [6].

Support Vector Machine:

Support Vector Machines are among one of the most robust and successful classification algorithms which is used for classification and regression analysis. SVM are **supervised learning models** helps to analyze the large amount of data to identify patterns from them. It is a latest classification method for both linear and nonlinear data and uses a nonlinear mapping to transform the original training data into a higher dimension. Among the new dimension, it searches for the linear optimal separating hyper plane (i.e., "decision boundary"). With an appropriate nonlinear mapping to a adequately high dimension, data from two classes can be partitioned by a hyper plane [7].

RandomForest Classifier

For both classification as well as regression a supervised learning algorithm Random forest is used. But still, it is mostly used for classification problems. As we know that a forest is complete with full of trees. Likewise, decision trees are created by random forest algorithm on data samples and then gets the calculation from each of them and lastly chooses the finest solution by means of voting. It is a collaborative method which is better than a single decision tree because it decreases the over-fitting by averaging the result.

Experimental Result analysis

Performance of classifier is easily understood by the confusion Matrix. The confusion matrix have 4 different combinations of actual and predicted values as shown in Table 1

$$\text{Accuracy} = \frac{TP + TN}{TP + TN + FP + FN}$$

A) SVM

Table 2 shows the confusion matrix for Restaurant Review dataset which is obtained after implementing SVM Algorithm

	Negative	Positive
Negative	149	93
Positive	45	113

Table 2: Confusion Matrix for Restaurant Review

B) Naïve Bayes

Table 3 shows the confusion matrix for Restaurant Review dataset which is obtained after implementing naïve bayes Algorithm.

	Negative	Positive
Negative	145	61
Positive	29	95

Table 3: Confusion Matrix for Restaurant Review

C) RandomForest

Table 4 shows the confusion matrix for Restaurant Review dataset which is obtained after implementing Random forest Algorithm.

	Negative	Positive
Negative	155	87
Positive	45	113

Table 4: Confusion Matrix for Restaurant Review

D) Performance Measure

Here the accuracy of SVM, Naïve Bayes and Random forest Classification Algorithm implemented on Restaurant Review dataset is shown in below Table 5.

Algorithm	Accuracy
SVM	0.65
Naïve Bayes	0.73
Random Forest	0.67

Table 5: Accuracy of Classifiers

From the above table SVM shows the lowest accuracy of 0.67 whereas Naïve Bayes shows the highest Accuracy of 0.73.

Conclusion

In this paper analysis on the basis of Accuracy and Confusion matrix is done for Restaurant Review dataset with the help of SVM, Naïve Bayes and Random Forest classification Algorithm and compared. Here in this study only comparison is done on the basis of accuracy but in future other performance measures: F1-measure, Recall, Precision can also be used for comparison. Also the classifiers can be trained with the help of many SVM kernel, different types of Naïve Bayes for further analysis purpose.

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Review of different methods used to detect Blog Spam

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ABSTRACT
Spamming is the electronic messaging system which provides unwanted and irrelevant information to the users. It can be done through e-mails, instant messages, blogs and forums. Blogs are an important way to publish information, engage in discussions, and create communities on the Internet. Use of spamming in blogs may reduce the value of blogs and blog search engines. Not only it frustrates the user but it also increases the traffic on internet and lost productivity in billions of dollars. The necessity of effective blog spam removal technique increases day by day. There are different methods used to detect blog spam and to eliminate spam blogs. In this paper we discussed some research work performed to detect blog spam and to eliminate spam blog. This review may help the user for further research in this area.

Keywords—*spam blog, spam blog detection, spam blog removal*

I. INTRODUCTION

Internet is one of the most important communication tools used today. Millions of user access information using internet. Basically, most of users rely on search engine to retrieve information from web. Each search engine has its own criteria for ranking of web pages[1]. So, promoting a website in search engine result and reach to user is a major challenge for website owner. This task is completed by Search Engine Optimization(SEO) process. SEO is the process which improves quality and volume of search engine traffic via natural search results[2]. With rapid use of search engines SEO has become very popular because SEO help the web site designer to get top ranking position in search result list, attract more number of visitors and finally improve the business marketing. Analysis of search engine retrieval results is one of the effective methods of researching sites SEO status [3]. SEO includes On-page and Off-page optimization techniques. On-Page optimization depend on different features/tags present on web page[4].The blog comment is a one of the off-page optimization technique used to promote website in effective way. Commenting builds a relationship between the user and the author. Through commenting, website gets a lot of back links and traffic which help in promoting the website.

Along with the growth of internet and blog commenting, there has been dramatic growth in blog spam in recent years. Blog spam appears on guest books or comment pages where spammers fill a comment box with spam words. The contents are meaningless but it contains a simple link. By clicking on the link user reaches to spammer's

website. In this way the ranking of spammer's website is boosted which wastes the time of user. Number of spam blogs is increasing rapidly. These blogs spam not only rapidly increases the network traffic but also frustrates the user and kill productivity. Developments of techniques are incorporated for detecting blog spam and to remove spam blogs. This paper discusses the different research work has been done to detect blog spam and the techniques used to eliminate spam blogs.

II. OFF PAGE OPTIMIZATION

Off-page SEO is a process to make relation with other site through the attractive web content and to reach to maximum people which have related websites for getting back links. This link building process takes time. Off-page SEO includes tricks to acquire relevant back links from reputable sites to improve sites ranking. Search engine optimizer will have less control and so executing these techniques become more challenging.

A. Off-page SEO Techniques

Off-page SEO refers to activities done outside the website to increase the page ranking. Off Page SEO can be applied for making back links, social media marketing and brand mentions. Some major off page SEO techniques are blog commenting, forum posting, comment linking, social bookmarking, link exchange schemes and social sites[5].

A) *Blog Commenting*: Search engine optimizer creates back links by commenting on different blogs and websites. The blog comment is most effective way to promote website. Blog post entries are updated frequently. Search engine crawl the website frequently to check updated blog post entries. In this way the website get higher ranking position in search engine results. Using good writing skills, important contribution to conversation improve possibility of achieving a link and directing traffic from that blog to website. Using a blog, advertiser can talk about their subject from different point of view using non advertising language and point out solutions which can be found in their website.

B) *Article submission*: Articles are submitted to popular article directory sites like Ezine, Go Articles, Now Public etc. It is one of the best technique for making back links and drive traffic to website. The articles are written daily and submitted to popular article directories with title, body, author introduction, website link. Search engine crawl the article only when it is approved by article directories.

C) *Social Networking* Sites: Sites sign up for most popular social networking sites such as facebook, Linkedln, Twitter, Google+. Such sites have large impact on search results. Social sites allow website to connect, interact with other peoples and promote site and build online reputation.

D) *Forum Marketing*: Forum is a place where discussion about all appears. Many people interact with each other by sharing information, doubts, advices, feedbacks, services, products etc. When website owner go to forum he put links inside to their signature. When website owner post some comments or answer to people questions through signature then the site gets back links from each comment. This helps to raise search engine ranking and raise website traffic.

E) *Social Bookmarking*: Blogs or pages are posted to most popular bookmarking sites like StumbleUpon, Digg, Delicious, Redditt etc. Search engine optimizer looks for related social bookmarking site and post contents there. Sites updated frequently with information like how many times it has been saved by different users. The site show continually updated list of popular

web pages which increase traffic based on how effectively participated.

IV.RESEARCH WORK PERFORMED ON BLOG SPAM DETECTION

Spam is a simple methodology to sent irrelevant messages or links through email, blogs, forums, email archives and instant messengers. Millions of dollars are spend each year by business houses to protect their resources from these attackers but still spamming is spread rapidly. Spam in blogs is called blog spam or comment spam is now a most effective way of site promoting. When a user visits a forum or a blog at that time back links or self-promotional links are there which reach to spammer's websites. These back links are created by search engine optimizers to promote the spammer's website. Blog spam generally appears on guest books or comment pages where spammers fill a comment box with spam words. The contents have no meaning but it contains a simple link to promote the website. In this way the ranking of spammer's website is boosted in search engine results. Comment spam is annoying end users and wasting bandwidth. Spammers find out different ways to boost their website in search engine results. Lot of research work has been done in past, even researchers proposed many methods to stop blog spam. Spam detection techniques are introduced rapidly in last few years. Some of the anti spam solutions are discussed below :

Adam Thomason[6] reported two popular open-source email anti spam programs to classify blog comment spam. This work uses Effectiveness of statistical filtering algorithms on the blog spam corpus. For testing the result two open-source email filtering packages, DSPAM and CRM114, were selected. The results shows that out of 660 spam messages, 10 were misclassified as ham (including three corpus errors) and out of 685 ham messages, 7 were misclassified as spam. Blog spam is a significant and increasing problem. From these results, it has seen that statistical anti-spam solutions developed for email are effective in detecting blog comment spam.

Pranam Kolari, Akshay Java, Tim Finin, Tim Oates, Anupam Joshi[7] discussed how local and link-based features used in SVM models to detect spam blogs. Evaluation process applied on learned models and their utility to blog search engines. Feature used for topic and email spam classification tasks is the bag-of-word-N-Grams. Though these models were not as effective as bag-of-words but they are providing significant merit to any spam blog detection system that uses them. Among the difference source tags, anchor text is mostly used for web page classification. According to results occurred from bang_of_anchors are effective though not as good as bag-of-words. According to research work shown Bag-of-anchors or bag-of-urls taken alone are quite effective for spam blog detection. Using Linear kernels resulted in AUC values of as high as 0.95 for bag-of-words. FRatio of number of hyphens to number of URLs is considered as a one of the feature. After comparison with standard features results from using these features together were significantly less effective. Using linear kernels with a value of 0.75 for AUC observed as best performance. Using machine learning approach experiment has been done with different features and it evaluates their utility for recognizing spam blogs.

According to article posted by Umbria solutions[8], spam blogs (or "Splogs") are an ever-increasing problem in the blogosphere.

Main purpose of spam blogs is use the blog as link to spammer's site and in this way increase the PageRank of affiliated sites. This site contains the meaningless or stolen contents from other websites with an unusually high number of links.

These links point to sites associated with the Spam blog creator and are often disreputable or useless web sites. New methods are innovated everyday by spam blog creators to fool blog hosting companies and search engines to get high ranking in search results to increase the probability of click-through. It becomes challenging task for user to find relevant search results among spam blogs. Umbria is one of the few companies currently addressing the Spam blog problem for blog analysis. On average, 44 of the first 100 blog search results (across all three blog search engines) were Spam blogs. Automated Machine Learning algorithm, detect up to 80% of Spam blogs, Blacklist approach, detects another 5 to 10% of Spam blogs, Manual inspection and review, eliminate final 1 to 5% of Spam blogs.

Ashwin Rajadesingan and Anand Mahendran[9] propose a novel methodology to classify comments into spam and non-spam using previously-undescribed features including certain blog post-comment relationships. Experiments conducted using our methodology produced a spam detection accuracy of 94.82% with a precision of 96.50% and a recall of 95.80%.We use a blog corpus contains 50 random blog posts with 1024 comments. The number of comments per blog post range from 3 to 96 and the average length of the comments is 41 words. The corpus contains 332 non-spam comments and 692 spam comments (about 67%).The accuracy of the classifier is determined to be the total number of correct classifications divided by the total number of classifications made by the classifier. all learning algorithms perform very well with the extracted features values. We observe that SVM has the highest recall value but its precision and accuracy is less than that of some of the other classifying algorithms. Decision trees give the highest overall accuracy of 94.82% along with a precision of 96.50% and a recall of 95.80%.Since, the relative cost of misclassifying a legitimate comment as spam is very high when compared to misclassifying a spam comment as legitimate.

Bhattarai A., Rus V. and Dasgupta D.[10] has charactrerized the comment spam in Blogosphere through content analysis. Based on the content they investigates the characteristics of comment spam in blogs. Different seven aspects are used to analyze spam and non spam contents based on contents of comments. This classification is based on semi-supervised and supervised learning. The results are promising. Naïve Bayes classification is considered as best with respect to high precision of 94% but it get very low recall i.e 62%. J48 based decision tree exhibits overall best performance on accuracy 86% , precision 90% , recall 88% and F-measure 89%.

Zhua L., Sun A. and Choi B. [11] proposed a novel post-indexing spam-blog (or splog) detection method, based on the results returned by blog search engines. The search results of a sequence of temporally ordered queries returned by a blog search engine are analyzed and build. From analysis of top-ranked search results the blog profiles are maintained for those blogs whose posts frequently appeared in search results.. According to results of blog profiles, 4 spam blog scoring functions were evaluated using real data collected from a popular blog search engine. The experimental results show that the proposed method could effectively detect spam blogs with a high accuracy.

Zhua L., Sun A. and Choi B. [12] proposed a spam blog detection framework to detect splogs online without involving training data and human inputs. They take blog profile as input. A blog profile records the temporal behavior of a blog with a sequence of blog state tuples. Using set of features, 4 splog scoring functions are

investigated for splog detection. To measure the effectiveness of the proposed technique, 3000 blogs with the highest frequencies are selected. Among the top 20 queries with the highest splog-hits, 10 of them are also among the top 20 retrieved most number of search results. From this it can be seen that splogs target on those popular queries frequently. Spammers may use black hat search engine optimization techniques to place their posts among the top search results, so that the sites get higher chance to be viewed by users.

Mishne G., Carmel D., and Lempel R.[13] collected a set of approximately 645,000 comments and follow a language modeling approach for detecting link spam in blogs and similar pages. Parameters used for testing are use of language in the blog post, a related comment, and the page linked from the comment. The aim of spammer is to create links between sites that have no semantic relation, e.g., a personal blog and a porn site. This divergence in the language models is used to effectively classify comments as spam or non-spam. For text generation a statistical language model is used. A probability distribution over strings is checked for observing the likelihood of these strings in a language. Results shows that 68% of the comments were spam, so ad-hoc fixed probability of 0.68 for a comment to contain link spam.

According to Huang C., Jiang Q. and Zhang Y.[14], comments cannot exist independently, it should be attached to the body of the blog. Author assumes that when a comment contains a lot of useless information, it must be comment spam because normal comments will not contain misleading information or contain related data. So whether a comment contains URL, phone number, E-mail address, MSN number, or whatever, will be a good cue for a spam. Here 2,646 blogs were randomly selected as the training set and labeled the data manually, with the use of that in result 277 spams were found. Some features are considered to distinguish comment spam and normal content. When comments are short they are considered as normal and when long comments with low relevance to blog body are found they are considered as spam. Comment spam makes up about 20% of the total comments. Experiments show that the heuristic model can find comment spam effectively with high precision and recall.

Nagamalai D., Dhinakaran B. C. and Lee J. K.[15] have proposed a software tool to prevent blog spam by using Bayesian algorithm based technique. It is derived from Bayes' Theorem. It gives an output with certain words in it which results that there has a probability that the comment is spam. Past entries and a comment entry are used to compute the value and this value is compared with a threshold value to find if it exceeds the threshold value or not. By using this concept, a software tool is used to block comment spam. From test results it has been shown that if the threshold value is fine tuned and spam words are continuously updated then they plays an important role in eliminating the comment spam. From experimental results it has been observed that the Bayesian based tool is working well.

After all of the above studies of different research papers which focus on blog spam detection, we make an overview of this work with parameters like what is purpose of the research work, which method is used to detect and eliminate spam and

the results obtained after evaluation. The table 1.1 shows the review of blog spam.

V. REVIEW ON BLOG SPAM

Name of author	Title of paper	Purpose	Method	Conclusion
Adam Thomason	Blog Spam : A review	To test the effectiveness of statistical filtering algorithms on the blog spam corpus	Two open-source email filtering packages, DSPA and CRM114, were selected to classifying blog spam.	Of 660 spam messages, 10 were misclassified as ham. Of 685 ham messages, 7 were misclassified as spam.
Pranam Kolari, Akshay Java, Tim Finin, Tim Oates, Anupam Joshi	Detecting Spam Blogs: A Machine Learning Approach	How SVM model are used to detect spam blogs using local and link-based features.	Machine learning approach has been used to experiment with different features and evaluate their utility for recognizing spam blogs	From sampled of 10,000 blogs from a popular blog search engine, machine learning system detected 1500 splogs
www.umbrialistens.com	SPAM in the blogosphere	To find spam blogs in blog search results	Use automated machine learning algorithm, use blacklist approach, through manual inspection and review	44 of the first 100 blog search results were spam, detect 5 to 10% spam blogs in blacklist approach, eliminate 1to 5% spam blogs using manual inspection .
Ashwin Rajadesingan and Anand Mahendran	Comment Spam Classification in Blogs through Comment Analysis and Comment-Blog Post Relationships	To classify comments into spam and non-spam using previously undescribed features including certain blog post-comment relationships	Propose a novel methodology which combines the results from content analysis of comments and blog post-comment relationships. To train Comment Spam Classification in Blogs through Comment Analysis 493 classifiers such as Naive Bayes, Support Vector Machines (SVM) etc., to detect spam comments. Experiments results shows a spam detection accuracy of 94.82% with a precision of 96.50% and a recall of 95.80%.	SVM has the highest recall value but its precision and accuracy is less than that of some of the other classifying algorithm. With a precision of 96.50% obtained using decision trees, they proposed an excellent spam detection methodology with very high precision
Archana Bhattarai, Vasile Rus, and Dipankar Dasgupta	Characterizing Comment Spam in the Blogosphere through Content Analysis	This work investigates the characteristics of comment spam in blogs based on their content. seven unique aspects are used to analyze spam and legitimate comments and classify them based on both semi-supervised and	Survey the evolution of work done in the area of spam, starting from email, webpage, blog and short text spams like comments spams. Analyzes different features of a spam/ legitimate comment, all of them based on the content of the comments. present the system framework built, document	The preliminary evaluation of the proposed framework shows promising results. It analyzes different features of a spam/legitimate comment, all of them based on the content of the comments. Naïve Bayes' algorithm is the best with respect to high precision of 94%. However, it has a very low recall i.e. 62%. J48 based Decision tree on the other hand exhibits an overall best

		supervised learning.	preprocessing steps, the semi-supervised spam detection technique and the supervised spam detection along with experimental results.	performance on accuracy 86%, precision 90%, recall 88% and F-measure 89%.
Linhong Zhua, Aixin Sun, Byron Choi	Online Spam-Blog Detection Through Blog Search	To detect those spam blogs that have already successfully slipped through pre-indexing spam blog filtering	Propose a novel post-indexing spam-blog detection method, which capitalizes on the results returned by blog search engines	Splogs can be detected from search results with a very high accuracy. The splogs detected are those that have already successfully passed the pre-indexing filter.
Linhong Zhua, Aixin Sun, Byron Choi	Detecting spam blogs from blog search results	Propose a spam blog detection framework by monitoring the on-line search results. Detecting those actively generating spam-posts	Monitors the top-ranked results of a sequence of temporally-ordered queries and four splog scoring functions are investigated for splog detection .	Splogs could be detected with high accuracy. Among the top 20 queries with the highest splog-hits, 10 of them are among the top 20 retrieved most number of search results.
Gilad Mishne David Carmel, Ronny Lempel	Blocking Blog Spam with Language Model Disagreement	For detecting link spam common in blog comments	Comparing the language models used in the blog post, the comment, and pages linked by the comments.	50 random blog posts, along with the 1024 Comments 332 (32%) were found to be “legitimate” comments, the other 692 comments (68%) were link-spam comments
Congrui Huang, Qiancheng Jiang, Yan Zhang	Detecting Comment Spam through Content Analysis	To automatically detect comment spam through content analysis, using some previously undescribed features	Proposed features like length of comment, text similarity, popular words and analyzed these features of comments with KL divergence	Experiments on a real data set show that combined heuristics can correctly identify comment spam with high precision(90.4%) and recall(84.5%).
Dhinaharan Nagamalai, Beatrice Cynthia Dhinakaran and Jae Kwang Lee	Bayesian based comment spam defending tool	To prevent spam from sites which allows commenting, blog spam filter can be used. It works with detecting spam words in a comment and finding the probability whether the comment is spam or not.	Bayesian algorithm is used to find probability of any spam. Formula can be derived using incoming comment and earlier comments stored in database. Bayesian algorithm identifies the comment spam & designed a software tool to defend comment spam attacks.	Observations from test results shows that if threshold value is finely tuned & spam words are continuous updated then it can completely eliminate the comment spam. Spammers constantly find new ways to by pass any filter so it requires constant updating.

VI. CONCLUSION

This paper gives a brief overview of blog spam and shows various approaches in different ways to detect blog spam. It is concluded that detecting the spam in blogs, comments, emails is a challenge. This paper discussed the different ways different researcher follows regarding spam detection and elimination in blogs. Whether anti-spam techniques are able to remove the spam pages from search engine result remains a question. There is need of future enhancements for developing an efficient spam blog detection and elimination technique that should meet the challenges efficiently and compatibility with global standards of web technology. The goal of paper is to provide awareness about blog spam detection work and encourage further research in this area.

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Design and development of novel techniques for clustering and classification of data using Data Mining for the implementation of algorithm

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***Abstract*—** The title of the Research topic is "Construction of Research Methodology on Literature Survey for the implementation of Algorithm designed for Clustering and Classification techniques in Data Mining Applications" In this paper proposed model of best clustering and classification of data set in the field of Agriculture, Dairy, Medical field using Data Mining techniques, in this paper on that basis Data mining techniques which is the best algorithm shows the accuracy of different data mining algorithms for better accuracy to compare with the other algorithms. in terms of applying and to develop new Algorithm in Data Mining Techniques.

In this paper in literature review, authors are used different standard data set from different platform like Crop, agriculture, seasonally calving dairy cows, Rice crop yield forecasting, Precision dairy farming, Kidney Disease, Chronic Kidney Disease analysis, Peritoneal dialysis patients, data set is different but above data analysis technique is the same in Data Mining and using some of the standard Machine Learning Algorithms for Clustering and Classification of data.

Clustering the data, people can obtain the data distribution, observe the character of each cluster and make further study on particular clusters. In addition, cluster analysis usually acts as the preprocessing of other data mining operations. Therefore, Cluster analysis has become a very active research subject in data mining. Data mining is a new technology developing with database and Artificial intelligence. It is processing procedure of extracting credible, novel, effective and understandable patterns from database. Cluster analysis is an important data mining technique used to find data segmentation and pattern information. As the development of data mining a number of clustering methods have been founded, The Study of clustering techniques from the perspective of statistics based on the statistical methods with the computer algorithm techniques and introduces the existing excellent statistical methods including factor analysis, Correspondence analysis and functional data analysis into data mining. The present study is undertaken to develop a Data Mining workflow using clustering and classification of data to solving clustering problem as well as extracting potentially interesting association rules.

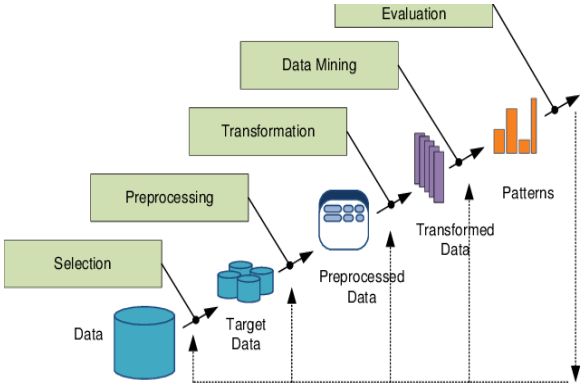
Keywords—Data Mining, Clustering, Classification, KNN, Weka, K-Means,

INTRODUCTION

Many computer science techniques such as data mining and machine learning are used to study the influence of various parameters and make predictions of the on the basis of different data sets. Data mining is the process of identifying the hidden patterns from large and complex data. It may provide crucial role in decision making for complex not only agriculture but also health related problems.

A comprehensive review of the application of various techniques such as artificial neural networks, bayesian network, Support vector machines and association rule mining will be provided with examples to show how they have been applied to variety of agricultural data sets as well as to predict the Kidney disease health related issues and applied different techniques like SVM, ANN, Classification, DT, K-nearest clustering.

This paper reviews the application of data mining techniques applied in the different field. Recommendation for future research direction for the application , In this paper, various algorithms have been analyzed. Data mining is generally grouped as predictive and descriptive type. But in farming areas, predictive type is essentially used. The data mining techniques are Classification, Association rules, Clustering and Regression.



Data Fusion sampling multi-resolution analysis – De-noising Feature-Extraction Normalization -- Dimension reduction -- Classification Clustering – Visualization Validation

Fig1: KDD Process in Data Mining

Data mining is the procedure of using huge data sets to infer important hidden knowledge. (fig.1) shows that knowledge discovery data mining process is divided into seven methods:

- Data cleaning
- Data Integration
- Data Selection
- Data transformation
- Data Mining
- Pattern estimation
- Knowledge display

LITERATURE REVIEW:

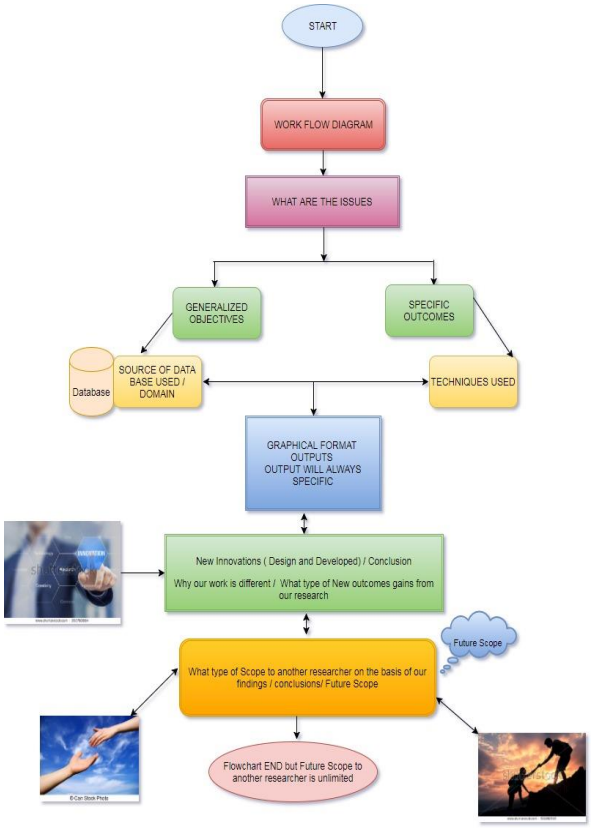
2.1 Table: [A] Comparison of Different Data Mining Techniques

Sr no	Author	Applications	Algorithms/ Techniques used	Accuracy	Year	Research title	Methodology
1.	Antonio Roberto [1]	Data Mining in Landsat time Series	J48	95%	2012	Object based image analysis and data mining in landsat time series for mapping soybean in intensive agricultural regions[1]	All images were normalized through iteratively Re-weighted.
2.	Manish [2]	Data Mining, Association Rule Mining	Association Rules	---	2004	Optimization of Association Rule Mining using Improved Genetic Algorithms [2]	Algorithms are rate mining
3.	Carolin Fenlon [3]	Data Mining	Logistic regression– in R- mixed logistic regression	96%	2016	Regression techniques for modeling conception in seasonally calving dairy cows [3]	To compare the performance f a logistic regression model applied to dairy conception with other binary mixed models
4.	Niketa Gandhi [5]	Data Mining , Decision tree, KNN	J48, LAD Tree	--	2016	Rice Crop Yield Forecasting of Tropical Wet and Dry Climatic Zone of India Using Data Mining Techniques [5]	Koopen classification applying various Data Mining Techniques, Weka, Data Visualization
5	Sabri [6]	Data mining, Association rule mining, segmentation, market analysis	Apriori	94%	2015	Segmenting customers with data mining techniques [6]	In the study, SPSS clementine v12 was used to find the association rules from the dataset

6	Zahid [7]	Data Mining, Auditory icon, visualization	RPAI, classification	--	2006	Sonification: A Novel approach towards Data Mining [7]	Tested our RPAI algorithm on the rain data , created 2D plot of the data
7	Kriti [8]	Edge Mining Techniques	Data compression algorithm	--	2016	Using edge analytics to improve data collection in Precision dairy farming [8]	Edge mining algorithms convert the raw data into stae vector and reduce memory usage
8	Sanyam Bharara [10]	Knowledge management, Business M. business intelligence	DM techniques, KDD, Clustering, Classification	--		A review on knowledge extraction for Business operation using Data Mining [10]	Analyzing the information generated by the users, DM techniques like Classification, Clustering
9	R. Sujatha [15]	Data Mining, Classification algorithm, Crop, yield prediction	KDD, Naïve bayes,, j48, Random Forest, ann, Decision tree SVM	--	2016	A Study on Crop Yield Forecasting Using Classification Techniques [15]	DM algorithms divided into three unique methods of learning called Supervised, unsupervised and semi supervised learning.
10	Chen Jinyin [22]	Data Mining, Clustering algorithm, Rapid determination of cluster centers, Density based clustering.	Clustering algorithm	91%	2017	A novel cluster fast determination clustering algorithm [22]	Density based clustering method proposed.
11	S. DilliAra su [23]	CKD, EPI, WAELI, EM, RF,CART, C4.5	Priority assigning algorithm	--	2017	A novel imputation method for effective prediction of coronary kidney disease CKD [23]	Kidney disease is predicted from clinical database by WAELI technique
12	Zou [24]	Peritoneal dialysis patients, Clustering analysis, syndrome evaluation law	SPSS18.0 Clustering analysis	50 %	--	Application of clustering analysis to explore syndrome evolution law of peritoneal dialysis patients[24]	TCM syndrome diagnostic criterion, information collection content and time point, data analysis and criterion syndromes.
13	Veenita [25]	Data mining, Classification, Chronic Kidney disease, naïve Bayes, Artificial Network	Naïve Bayes, ANN, (classification algorithm)	ANN-72.73 % Naïve Bayes-100%	2016	Chronic Kidney disease analysis using data mining classification techniques. [25]	Data collection, preprocessing, applying classification algorithm naïve bayes and ANN then model test the data and data is then transformed into suitable format for further processing, DM applied on the data to extract valuable information.
14	[26] Duc Thanh Anh Luong Dept. of Comput. Sci. & Eng., Univ. at Buffalo Buffalo, Buffalo, NY, USA	L-Means, Clustering, Chronic Kidney Disease	Clustering disease progressions, time series data, disease progression profiles, healthcare analysis, disease progression data, Chronic Kidney Disease, unsupervised machine learning, K-means approach	-	2017	I. A K-MEANS APPROACH TO CLUSTERING DISEASE PROGRESSIONS [26]	We use the algorithm to group patients suffering from Chronic Kidney Disease (CKD) based on their disease progression profiles. A qualitative analysis of the representative profiles for the learnt clusters reveals that this simple approach can be used to identify groups of patients with interesting clinical characteristics.

15	Narander [27]	Data Mining, Classification, Clustering, Healthcare , WEKA	J48, Random forest, Naïve Bayes Classifer, SVM, KNN / Linear Regression , Multivariate Linear Regression, Non Linear Regression	Knn-95% RF-100% NB-95% J48-99% SVM-62%	2017	Implementing WEKA for Medical data Classification and early disease prediction[27]	Experiment has been conducted CKD data set, implemented various classification algorithm
16	Issariya [28]	Acute kidney injury, Acute Kidney Injury (AKI), Data Mining, Decision Tree, Classification, KDIGO-Kidney Disease Improving global Outcomes	Decision Tree Classification technique, J48, Simple Cart	--	2016	AKI Helper: Acute Kidney Injury diagnostic tool using KDIGO guide line approach	Identifying the risk factors of AKI using data mining techniques

Work Flow Diagram:



3 MATERIALS AND METHODS:

Data Collection – The data used for this work was collected from specific region. Following stages of the research applied on collected data: Data cleaning, Data selection, Data Transformation and data Mining. Data Collected from the different Standard Sources. [1][2][3][4][5][6][7][8][9][10][11][12][13][14][15][16]

Data Cleaning- in this stage, a consistent format for the data model was developed which took care of missing data, finding duplicated data, and weeding out of bad data, Finally the cleaned data were transformed into a structure format suitable for data mining. A very low-quality information is available in various data sources and on the web; many organizations are interested ni how to transform the data into cleaned forms which can be used for high-profit purpose. This goal generates an urgent need for data analysis aimed at cleaning the raw data. [1][2][3][4][5][6][7][8][9][10][11][12][13][14][15][16]

Data Selection: at this stage, data relevant to the analysis was decided on and retrieved from the dataset.
[1][2][3][4][5][6][7][8][9][10][11][12][13][14][15][16]

Data Transformation: This is also known as data consolidation. It is the stage in which the selected data is transformed into forms appropriate for data mining. The data file was saved in Commas Separated Values (CSV) file format and the datasets were normalized to reduce the effect of scaling on the data [1][2][3][4][5][6][7][8][9][10][11][12][13][14][15][16]

Data Mining Stage – The data mining stage was divided into three types of phases. At each phase all the algorithms were used to analyze the [1][2][3][4][5][6][7][8][9][10][11][12][13][14][15][16] data sets. The testing method adopted for this research was percentage split that train on a percentage of the dataset, Cross validate on it and test on the remaining percentage.

Comparison of Data Mining Techniques (Clustering and Classification techniques): -

According to the earlier work done by researchers presented in the literature review, a comparison can be done. Different data mining techniques was used to predict different parameters of agriculture, Dairy Farming, Health issues, CKD issues. Various attributes used for the comparison are applications, authors, data mining techniques, algorithms, time period, accuracy percentage, advantages and disadvantages

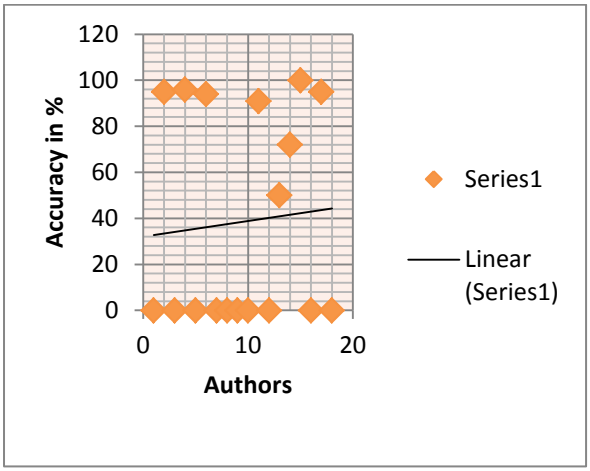


Fig: Comparison of DM techniques in accuracy with respective Authors.

X - Axix	Y- Axix
Authors/algorithms used	**Accuracy in %**
[1] J48	**95**
[2] Association Rule	NM
[3] Logistic Reg.	**96**
[5] J48	NM
[6] Apriori	**94**
[7] RPAI classification	NM
[8] data Compression algo	NM
[10] KDD	NM
[15] J48	NM
[22] Clustering algo	**91**
[23] Prority Ass Algo	NM
[24] Clustering	**50**
[25] Naïve bayes ANN	**72**
[25] Naïve bayes	**100**
[26] K-means	NM
[27] KNN	**95**
[28] J48	NM

NM = Not Mentioned

The above figure shows the accuracy of different data mining algorithms. Comparison of Authors and accuracy in % , some of the authors from [1][2][3][4][5][6][7][8][9][10][11][12][13][14][15][16] are mentioned their result accuracy while adopting different DM techniques / algorithms and some of the authors not mentioned their result accuracy in %, but they have good job in their respective research.

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A SURVEY PAPER ON VARIOUS BIOMETRIC SECURITY SYSTEM METHODS

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ABSTRACT:***Security is the main problem in a day to day life. Many high level industry uses biometric security for acknowledgment of their employees such as iris, thumb ,face etc. There are so many systems available for security, but that systems are not so reliable. To confirm the actual presence of a real trait against a fake self generated sample biometric system is used. This evolving system is reliable and precise. In this project we present a software and hardware based fake detection method which can be used in multibiometric system to detect different fraudulent access attempts. This paper efforts on iris recognition, fingerprint recognition and face recognition. In this survey we present an overview of various biometric methods for security.***

KEYWORDS: Iris recognition, face recognition, fingerprint recognition, biometrics, security

1.INTRODUCTION

The science and technology of measuring and evaluating biological data is referred as Biometric. Biometrics are that kind of system which can offer more security to user. Any fake trait can capture the features and behaviour of human beings. But every human being has their own unique personality. That is why it can not easily copied by anyone. There are many biometric security systems available such as iris recognition ,fingerprint recognition, face recognition, signature recognition, voice recognition, hand geometry recognition,etc.

In biometric security system there is no need to recall passwords or PINs ,so there is no chance of stolen or forgotten the passwords or PIN, therefore it is more secure system than any other security systems. Generally biometric system have three steps i.e. receiving data, encryption and study of received data.

2. Various Methods Of Biometric security systems:

A] In the year 2003, the authors Salil prabhakar, Sharath Pankanti and Anil k. Jain [5] planned the biometric security and privacy system for fingerprint recognition. The paper planned the approach of enrollment, verification and identification to provide confidentiality and security. In planned Scheme the enrollment module first enroll the person into biometric database. During registration process ,the persons characteristics are first scan by the biometric reader to produce digital representation. In verification process already registered person claims an identity and system then start verification based on their characteristics. After that identification task finds the claim persons identity. But the drawback of this method is that there are two types of errors were introduced : erroneous biometric measurement from two different persons to be from same persons and erroneous biometric measurement from same persons to be from two different persons

B] Watermarking Scheme for iris: Authors Jing Dong and Tieniu Tan proposed a biometric security structure for iris recognition. In year 2008, they calculated two methods for iris recognition, namely protection of iris template by hiding the min cover images as watermarks and watermarking the images of iris. Experimental results suggest inserting of watermark in iris images does not provide better performance instead of that recognition performance

drops meaningfully if iris watermark suffers due to severe attack[1].

C] Canny Edge detection Technique for iris: In year 2011,the authors Bhavana chouhan and Shailaja Shukla planned a biometric security system which is based on automatic identification of an individual .Iris recognition totally depend on unique attribute and characteristics of an individual. Basically it efforts on image segmentation and feature extraction. Especially the iris recognition system depend on edge detection. Most commonly used tool of image processing for edge detection is canny edge detection method which detects edges very robust .Canny edge detection technique identifies unnecessary eges which does not provide appropriate result. This article extraction method is unable to collect useful information from the image of iris that is not properly segmented[2].

D] AdaBoost algorithm for face and Retinex algorithm for iris: Authors Yeong Gon Kim ,Kwang Yong Shin, Eui Chul Lee and Kang Ryoung Park in the year 2012 planned scheme on recognition of face and both irises. In the planned scheme the face regions are detected by using AdaBoost algorithm where as eye regions are detected by using rapid eye detection. After that the size normalization is done to remove the variations occured in detected facial region and Retinex algorithm is used to normalized the illumination. Then facial features are learned by using principal component analysis from normalized result of facial region. At the end matching score of Euclidean distance is calculated which is essential as an input to support vector machine. In case of iris recognition, region of iris is segmented by using integer based CED and with an eyelid/eyelash detection method. Lastly matching score of Hamming distance is calculated and applied as an input to support vector machine. The drawback of this method is that in case of iris recognition if an iris regions of an entities are more enclosed by eyelid/eyelashes can affect the performance of system. In case of face recognition ,facial images of severe rotation and extreme facial expression such as surprise can mark the performance of system[3].

E] Fingerprint and Iris recognition using Fuzzy Logic Scheme: In year 2013, authors Mohamad Abdolahi, Majid Mohamadi, Mehdi Jafari planned the biometric security fusion system using fingerprint and iris with fuzzy logic. In the fingerprint recognition, bifurcations and terminates are kept and recognised as one feature, so that each minutia can be easily determined , identified and stored with parameters X,Y and its tangent angle. In addition to planned method, two 64 bits code is used, one for terminates and another for bifurcations which collectively combine them to 128 bits unique code. After getting 128 bit code from new image of fingerprint it starts relating with the code kept in database and starts finding code with minimum difference. This difference number is then kept in fuzzy logic engine. Iris is a portion of eye, which control the amount of light entering in to pupil. In case iris recognition the first obtain the image of iris with good resolution which is denoted as image acquisition. In segmentation ,first find out the size of image and centre pixel by sharing row and column. So that pixel is in the pupil region and its clear pupil is the portion of eye that is why it can move to the right side of pixel.

with a high amount of difference intensity and mark it, move left to the pixel with a high amount of change intensity and mark it and find the centre of these points. Do the equal and find top and bottom and centre of them. Now with these centre and peripheral learned points we can find the real pupil centre with centre fact and maximum distance drawing a pupil circle performing the same task to find the iris region and extract iris from eye image. In this way subdivision is carried out .After that gabor filter is recycled for feature extraction. After comparing the new images of iris with the stored database by using hamming code algorithm, code obtained with minimum difference is stored in fuzzy logic engine[4].

To overcome the disadvantages of previous papers ,The authors Javier Galbally, Sébastien Marcel and Julian Fierrez [6]in the year 2014 they proposed a scheme where iris, fingerprint, face are used as an input to the system which is then likened with stored database. If applied image is corresponding with stored database of any of three inputs then data is transferred to the microcontroller by wireless technology using transreceiver. By creation comparative analysis with previous papers this paper achieved better performance in terms of security.

3. CONCLUSIONS

Preservative Security is very important nowadays. Various methods of biometrics has been deeply researched in the recent years. This study summarizes the various methods and algorithm used for biometric recognition like iris, fingerprint and face. By making use of image superiority

measurement it is very easy to identify the real and fake user because fake identities few different features than the original one it always consists of different colour, general artifacts, luminance levels, quantity of information and quantity of sharpness, which may be found in both types of images, structural lies and natural appearance. Multibiometric system is a interesting system than unibiometric system as well as it is more secure. This paper attentions on only three biometric system such as face recognition, iris recognition, fingerprint recognition. This type of multibiometric system is recycled for various applications. In future for making this multibiometric system more reliable and secure then add one more type of biometric system and try to make system more successful.

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A REVIEW : STEP OF BUILDING BLUE BRAIN

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ABSTRACT*: With the advancement in technology, human, the ultimate source of information and discovery should also be preserved. In other words, human is does not live for thousands of years but the information in his mind could be saved and used for several thousands of years. The technology helpful in this activity is Blue Brain. This journal paper consists of the information on Blue Brain project, concepts of Blue Brain, its requirements, strategies undertaken to build a Blue Brain, advantages and disadvantages and many more***.**

KEYWORDS: Blue brain, virtual mind, BBP, Blue Gene, brain in super computer.

I. WHAT IS BLUE BRAIN?

Blue brain is a concept which allows us to copy or to transfer all the contents of a human brain into a virtual brain that resides inside a Super computer. The Super computer used in this is Blue Gene as of the current information revealed. It is like uploading a mind in a compute. Uploading mind can probably be achieved by either of two methods: 1.Copy and Transfer or 2.Slow and steady replacement of neurons. In the previous method, mind uploading would be achieved by scanning, comparing and contrasting the salient features of a normal biological brain, and then by copying, moving, and saving that information into a computer system or other computing machine. The stimulated mind then can reside into a computer that is inside a humanoid robot or a biological body.

Achievements made in the technology:
Typical scientists, impending research funders and scientific journalists are still doubtful on success of mind uploading. Significant mainstream research in related areas is being conducted in animal brains, comparing, contrasting and simulation, developing of faster super computers, virtual reality, brain-computer interfaces, connectors and information extraction from dynamically working brains. Brain simulation is unbelievably inter-disciplinary research. It involves the domains like brain imaging, neuroscience, computer science, nanotechnology, AI, biotechnology, psychology, philosophy, and many more.

A progressively vast community of thoughtful researchers has arisen, taking this seemingly science-fictional knowledge seriously and running to it through experimental and theoretical research programs. These supporters mention many of the tools and ideas needed to achieve mind uploading activity; however, they also admit that it is very hypothetical, but still in the dominion of engineering potential.

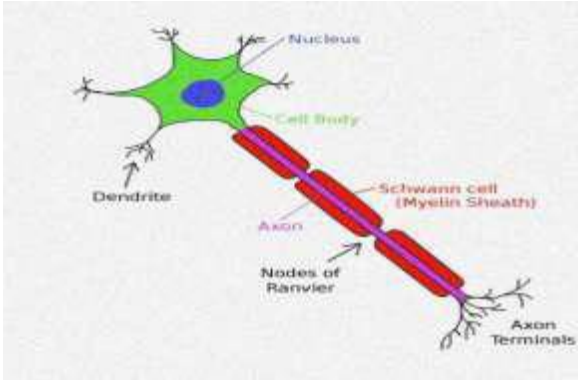


Fig. Neuron anatomical model

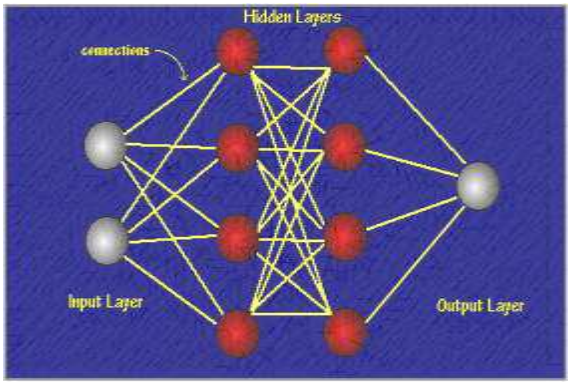


Fig. simple artificial neural network

A typical human brain consists of approximately 85.5 billion of nerve cells called the neurons. Each neuron is individually linked to other neurons by axons and dendrites. Signals at the biological level of these connections are

transmitted by releasing and detecting chemicals known as neurotransmitters. Neuroscientists have stated that important functions that a mind performs such as learning, memory, and consciousness, have been possible due to completely physical and electrochemical processes in the brain.

Consciousness is a part of natural world. We believe that consciousness depends on mathematics and logic, laws of

physics and chemistry and biology; it's not magical. The concept of mind uploading is based on this mechanical view of the mind. It denies the ritualistic view of human life and consciousness. Eminent computer geniuses and neuroscientists have foretold that specially programmed machines will be capable of thought and even reach some level of consciousness. Such machine intelligence ability might offer a computational substrate necessary for uploading.

II. STEPS TO BUILDING A BLUE BRAIN

1. Data collection
2. Data simulation
3. Visualization

1. Data collection:

It involves collecting brain portions, taking them under a microscope, and gauging the shape and electrical behavior of neurons individually. This method of studying and cataloguing neurons is very familiar and worldwide.

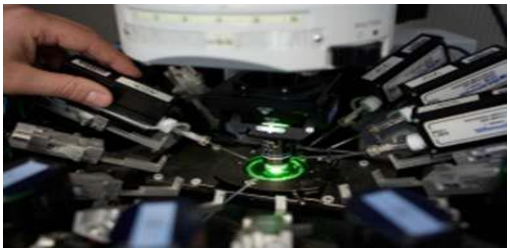


Fig. The 12 patch clamp, close view

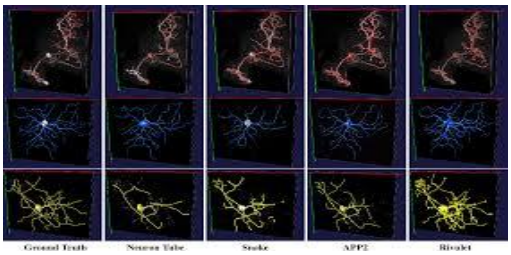


Fig. 3D neuron morphology reconstruction

The neurons are captured by their shape, electrical and physiological activity, site within the cerebral cortex, and their population density. These observations are translated into precise algorithms which describe the process, function, and positioning methods of neurons.

Then, the algorithms are used to generate biologically-real looking virtual neurons ready for simulation.

2. Data simulation:

It concerns with two major aspects:

a. Simulation speed

b. Simulation workflow

Simulation speed

Simulations of one cortical column (more than 10,100 neurons) run about two hundred times slower than real time. It takes about five minutes to complete one second of stimulated time. The simulations display unevenly line scaling.

Presently the major seek is biological soundness rather than presentation. After understanding biologically significant factors for a given effect it might be feasible to crop constituents that don't subsidize in order to advance performance.

Simulation overflow

Making virtual cells using the algorithms, written to define and describe real neurons, is the major seek of this step.

Algorithms and constraints are adapted according to the age, species, and disease stage of the animal being simulated. Each one of the protein is simulated.

Note: there are hundreds of millions of proteins in one cell.

a. First a network skeleton is built from all the different kinds of synthesized neurons.

b. After this, the cells are joined according to the experimentally found rules.

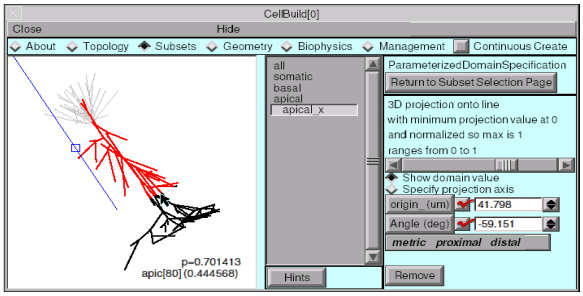
c. Finally the neurons are functionalized and the simulation brought to life.

The blueprints of emerging behavior are watched with visualization software.

BBP-SDK

The Blue Brain Project - Software Development Kit, a set of Application Programming Interfaces allows the researchers to use and audit prototypes and simulations. The Blue Brain Project-SDK is a C++ library wrapped in Java and Python.

The primary software used by this for neural simulations is NEURON. Michael Hines of Yale University and John Moore at Duke University developed this in the starting of the 1990s. It uses C, C++, and FORTRAN. It is freely available open source software. The website makes everything available including the code and the binary data freely. Michael Hines in cooperation with BBP team in 2005 ported the package into the massive and parallel Blue Gene.



3. Visualization of results

RT Neuron

RT Neuron is the main application that Blue Brain Project uses for visualization of neural simulations. The BBP team developed this software internally. It is coded using C++ and OpenGL. RT Neuron is an ad-hoc software written specifically for neural simulations, i.e. it can't generalized to other kinds of simulation. RT Neuron takes the output from Hodgkin-Huxley simulations as input in NEURON and delivers them in 3D. This allows the programmers and researchers to view as activation potentials propagate through or between neurons. The animations can be paused, stopped, started and zoomed, hence allowing the researchers to interact with the model. The visualizations are multi-scale (they can render individual neurons or a whole cortical column).

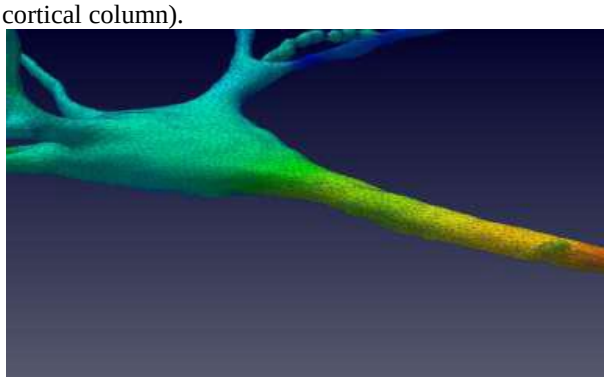


Fig. Visualization of neuron

III. HARDWARE/ COMPUTER USED

1. Blue Gene/L Super computer (initially till 2009)

2. Blue Gene/P Super computer (till 2011)

Blue Gene/P specifications:

- More than 4,000 quad-core nodes
- Each core is a PowerPC of 4.5, 8.5 GHz
- It consists of more than 6*1013flops, more than 15 terabytes memory
- 1 PetaByte of disk space and parallel file system
- Operating system: Linux SuSE SLES 10

Fig. Blue Gene/P's processing system outer view

3. JuQUEEN (Blue Gene/Q) Super computer

Fig. JuQUEEN

It currently performs at more than 1.7 Petaflops. It was in 8th rank in the world in June 2012 in terms of speed. It was
upgraded with more racks in October 2012.

IV. FUNDING

The project was funded chiefly by EPFL, to which Swiss government donates in turn. EPFL and ETH are the only two federally-funded universities in Switzerland. This project has also been funded by other organizations like EU research grants and other entities, and individuals.
In the March of 2012 the ETH Board requested an amount ofCHF 85 million (€70 m) from the Swiss government to fund the Blue Brain Project during 2013 to 2016.
IBM actually isn't funding the project, but they gave their supercomputer named Blue Gene to Ecole Polytechnique
Federele De Lausanne at a minimal cost.IBM was actually interested in evaluating and examining the super computer on different fields and BBP was one of them.

V. ADVANTAGES AND DISADVANTAGES

Advantages of Blue Brain

1. Blue brain is an approach to store and utilize human intelligence and information present in the mind even after
human demise.

2. It is an important move towards self-decision making by the computer or machine that holds a Blue brain.

3. Business analysis, attending conferences, reporting, etc. are very significant functions that an intelligent machine can do consistently.

4. It can be used as an interface between human and animal minds. The BBP has become successful in rat and some
other animals which is a sign of success.

5. It a good remedy towards human disability like a deaf can get the information via direct nerve stimulation.

Disadvantages of Blue Brain

1. It increases the risk of human dependency on Blue Brain every time.
2. Once a Blue Brain related to a particular person's neural schema is hacked, the brain could be used against the very person.
3. Since it an approach to make machines intelligent and thoughtful it increases the risk of machines conducting war against human (like we have been watching in the movies like Terminator, Universal soldier, etc.)

VI. CONCLUSION

The whole idea is that mental infirmity, memory and perception of generate by neurons and electric signals could be soon treated with a supercomputer that models of the millions of effector organ of brain. The key finding is that inattentive of gender and race, human brains are mainly identical. We will be able to map the differentiations by attractive the patterns later. The exciting part is not different we are but how similar we all are. There are good reasons to consider that, regardless of implementation strategy, the predictions of realizing artificial brains in the near future are hopeful.

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GAME THEORY – A WAY TO NETWORK SECURITY: A REVIEW

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Abstract:
Network security is a complex and challenging the problem. The area of network protection mechanism design is receiving vast attention from the research community for more than two years. However, the network security problem is distant from completely solved. Experts have been travelling the applicability of game theoretic methods to address the network security problems and some of these methods are sure. This paper states the current game theoretic solutions which are designed to augment of network security and presents a taxonomy for classifying the proposed solutions. In This taxonomy should provide the reader with a better understanding for game of theoretic solutions to a variety of cyber security problems.

Introduction

Current affairs in Internet prove that network attacks result into massive amounts of loss to government, private enterprises, and the general public in terms of money, data confidentiality, and reputation. The research community has been paying consideration to the network security problem for more than two decades. However, the problem is far from being completely solved. The key factor which makes this problem hard is that the native network, which wishes to be secured, is characteristically connected to the Internet and most important parts of the Internet are out of the control of network officers. However, the Internet has become an essential component of running the daily business of government, economic institutions, and the general public. As this work is maintained by the Office of Naval Research (ONR) under grant a result, there is a pressing need to design security measures for network attacks.

Usually, web safety solutions service one or the other defensive devices such as firewalls or sensitive devices such as Intrusion Detection Systems (IDSs) and together are used in combination. The interruption detection algorithms are either built on detecting an attack mark or spotting the abnormal performance of the system. When an attack is noticed the employed IDS alerts the network officer who then takes an action to break or diminish the attack. But, now IDSs are not very classy and they trust on ad-hoc arrangements and trial work. The present IDS knowledge may prove enough for caring against unplanned attackers using well known skills, but here is quiet a requirement to policy tools to secure beside refined and organized adversaries. The weakness of the traditional network safety solutions is that they absence a computable decision background. A rare groups of investigators have started supporting the use of game theoretic methods. As game theory arrangements with problem wherever numerous players by opposing aims participate with each other, it can offer us with a accurate frame for investigation and displaying network security problems. Furthermore, game theory earnings the capability of observing thousands of imaginable situations previously taking the greatest action; later, this one can trendsetter the choice procedure of the network officer to a big scope. Thus, numerous game theoretic methods have proposed to address network security topic. This paper analyses the surviving game theoretic solutions which are intended to improve network security and grants a taxonomy for categorizing them. Underlining the basic game type used in the security mechanisms, though selecting complete differences, this classification affords the reader with a global view of the problem and solution space. This paper does not promote some specific defense game.

2 An overview of game theory

This section identifies the premise of theory of games to assist the understanding of the games. For an in depth introduction to theory of games refer A Course in theory of games. Theory of Games describes multi-person decision scenarios as games where each player chooses actions which end within the simplest possible rewards for self, while anticipating the rational actions from other players. A player is that the basic entity of a game who makes decisions then performs actions. A game could also be a particular description of the strategic interaction that has the

constraints of, and payoffs for, actions that the players can take, but says nothing about what actions they actually take. A solution concept is a systematic description of how the game will be played by employing the best possible strategies and what the outcomes might be. A preference relation may be a complete relation on the set of consequences which model the preference of every player within the game. A strategy for a player may be a complete plan of actions altogether possible situations throughout the sport. If the strategy specifies to require a singular action during a situation then it's called a pure strategy. If the plan specifies a probability distribution for all possible actions during a situation then the strategy is mentioned as a mixed strategy. A Nash equilibrium is defines a steady state condition of the game; no player would prefer to change his strategy as that would lower his payoffs given that all other players are adhering to the prescribed strategy. This solution concept only specifies the steady state but does not specify how that steady state is reached in the game. This information are going to be wont to define games that have relevant features for representing network security problems.

2.1 Definitions

Game

A description of the strategic interaction between op posing, or co-operating, interests where the constraints and payoff for actions are taken into consideration.

Player

A basic entity in a game that is tasked with making choices for actions. A player can represent a person, machine, or group of persons within a game.

Action

An action constitutes a move in the given game.

Payoff

The positive or negative reward to a player for a given action within the game.

Strategy

Plan of action within the game that a given player can take during game play.

Perfect Information Game

A game in which each player is aware of the moves of all other players that have already taken place. Examples of perfect information games are: chess, tictac-toe, and go. A game where at least one player is not aware of the moves of at least one other player that have taken place is called an imperfect information game.

Complete Information Game

This is a game in which every player knows both the strategies and payoffs of all players in the game, but not necessarily the actions. This term is often confused with that of perfect information games but is distinct in the fact that it does not take into account the actions each player have already taken. Incomplete information games are those in which at least one player is unaware of the possible strategies and payoffs for at least one of the other players.

Bayesian Game

A game in which information about the strategies and payoff for other players is incomplete and a player assigns a ‘type’ to other players at the onset of the game. Such games are labeled Bayesian games due to the use of Bayesian analysis in predicting the outcome.

Static/Strategic Game

A one-shot game in which each player chooses his plan of action and all players’ decisions are made simultaneously. This means when choosing a plan of action each player is not informed of the plan of action chosen by any other player. In the rest of this paper, this class of game is referred to as ‘static game’.

Dynamic/Extensive Game

A game with more than one stages in each of which the players can consider their action [32]. It can be considered as a sequential structure of the decision making problems encountered by the players in a static game. The sequences of the game can be either finite, or infinite. In the rest of this paper, this class of game is referred to as ‘dynamic game’.

Stochastic Game

A game that involves probabilistic transitions through several states of the system. The game progresses as a sequence of states. The game begins with a start state; the players choose actions and receives a payoff that depend on the current state of the game, and then the game transitions into a new state with a probability based upon players’ actions and the current state.

3 Taxonomy:Classification of Game

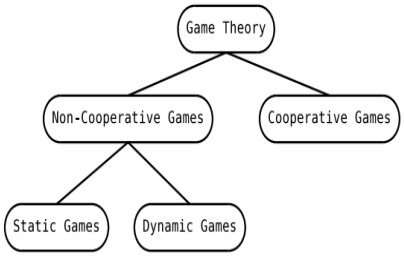

Figure 1. Classification of games Figure

Figure1 demonstrates the essential classifications of theory of games. the prevailing game-theoretic research as applied to network security falls under non-cooperative games. As such, this paper doesn't further expand upon ‘cooperative games’. Section 3.1

discusses existing works involving static games while Section 3.2 deals with current works involving dynamic games. Section Finally, Section 3.3 presents some directions for future research. according to the completeness of knowledge, static games are often classified into two sub-classes as listed below. We briefly discuss the prevailing research works which fall under each sub-class of static games.

3.1.1 Complete imperfect information

Jormokka et al. introduced a few of samples of static games with complete information where each example represents an IW scenario. for each scenario the authors found the only strategy of the players during a quantitative form. especially, they investigated if quite one Nash equilibria exist and if so, then which one is presumably to look because the result given the players' strategies. These examples show that relying on the scenario the players could get the advantage of a bold strategy or a mixed strategy.

3.1.2 Incomplete imperfect information

Liu et al. presented steps to model the interactions between a DDoS attacker and therefore the network administrator. This approach observed that the power to model and infer attacker intent, objectives, and methods (AIOS) is vital because it can cause effective risk assessment and harm prediction. An incentive-based game-theoretic model to infer AIOS was discussed during this work. a couple of bandwidth parameters were used because the metric to live the impact of the attack and therefore the countermeasure, which successively measures the attacker's, and defender's, incentive. The work also observed that the simplest game model to settle on depends on the degree of accuracy of the employed IDS and therefore the degree of correlation among the attack steps. The simulation results including game plays following the Bayesian model while the simulation experiment was performed on ns-2. The topology considered within the simulation experiment consists of 64 source hosts connected to at least one victim machine via 4 levels of routers. Each router is capable of employing the pushback mechanism as a part of the defense strategy. a group of Nash equilibrium strategies were computed via the simulation.

3.2 Dynamic games

3.2.1 Complete perfect information

Lye et al. proposed a game model for the safety of a network. during this work, an enterprise network was envisioned as a graph of 4 nodes (web server, digital computer, work station and external world) along side the traffic state for all the links. it's a two-player (administrator, attacker), stochastic, general-sum game and therefore the authors focused on 3 attack scenarios namely, defaced website, denial-of-service, and stealing confidential data. the sport was described from the purpose of view of both players. a proper model defined the sport as a 7-tuple— the set of network states, the action set for every player, the state transition function, the reward function and a reduction factor. especially, this work considered a stochastic game involving 18 network states and three actions for every player at each state.

Xiaolin et al. proposed a Markov theory of games based model for risk assessment of network data system considering the safety status of both present and future. They identified that threats working on vulnerability can induce risk and therefore the risk are going to be larger and bigger by threat spreading. On the opposite hand, the danger are going to be smaller and smaller by the system administrator's repairing the vulnerability. Essentially, the experiment involves a game of complete and excellent information with two players. Authors formulated a function to capture the damage and used it to assess the danger. Using the damage function the supervisor would choose the repair strategy which minimizes the utmost damage. To estimate the model experts constructed a risk assessment platform with four subsystems which are Malicious code Detection Subsystem, Vulnerability Detection Subsystem, Asset Detection Subsystem and Risk Assessment Subsystem. They used Trojan.Mybot6307 as a threat, and three assets to describe states. Their results are similar or better than the normal assessment model like Fault Tree Analysis (FTA) because they effectively incorporated the potential risk also. They claimed that the model also results in the simplest system repair scheme.

Alpcan et al.modeled the interaction between malicious attackers to a system and therefore the IDS employing a stochastic (Markov) game. They captured the operation of the IDS sensor system employing a finite-state Markov chain, and thought of three different information structures:

(a) the players have full information about the sensor system characteristics and therefore the opponents ;

(b) the attacker has no information about the sensor system characteristics;

(c) each player has only information about his own costs, past actions, and past states. a couple of illustrative examples and numerical analysis were presented for these three cases. Tools like value iterations to unravel Markov decision processes (MDP) , minimax-Q , and naive Q-learning were wont to find the simplest strategies of the players.

3.2.2 Complete imperfect information

Nguyen et al. as seen the network security problem as a sequence of nonzero-sum games played by an attacker and a defender. This game model, called 'fictitious play (FP)', conservatively considers that the players cannot make perfect observations of every other's previous actions. This work studied the impact of the error probabilities related to the sensor system on the Nash equilibrium strategies of the players considering two scenarios—

(a) each player is conscious of these error probabilities;

(b) neither player knows these error probabilities. Both classical and stochastic FP games are investigated via simulation.

3.2.3 Incomplete perfect information

Chen in his doctoral dissertation used game theoretic model to style the response for the importance-scanning Internet worm attack. the most idea is that defenders can choose the way to deploy an application, that's the group distribution, when it's introduced to Internet to attenuate the worm propagation speed. The attacker can choose the optimal group scanning distribution to maximise the infection speed. Thus a game would be played between the attacker and therefore the defender. The attacker should choose so on maximize the minimum speed of worm propagation, while defender wants to attenuate the utmost speed of worm propagation. By framing the matter this manner it seems to be a zero sum game and a min-max problem. The optimal solution for this problem is that defender should deploy the appliance uniformly within the entire IP-address space or in each enterprise network, in order that the simplest strategy that the attacker exploits is like random scanning strategy.

Alpcan et al.investigated the matter of Nash equilibrium Design for quite general class of games from an optimization and control theoretic perspective. The work is theoretical and therefore the analysis is general though aimed toward information networks. They restricted their treatment to a category of games where players don't manipulate the sport by deceiving the system designer and where utility functions accurately reflect user preferences. They inferred that "loss of efficiency" isn't an inherent feature of a broad class of games with built-in pricing systems, but merely a misconception that always stems from arbitrary choice of game parameters. Finally, they provide a quick overview of Nash equilibrium dynamic control. They suggested a feedback system approach with pricing as an impact input to form the system robust and to regulate the system's progress and investigated system's controllability generally.

Bloem et al.modeled intrusion response as a resource allocation problem supported theory of games. a price is related to attacks and responses. This problem, including imperfections within the sensor outputs, was first modeled as endless game. The strategies are discretized both in time and intensity of actions, which eventually results in a discretized model. The reaction functions uniquely minimize the strictly convex cost functions. After discretization, this becomes a constrained integer optimization problem. to unravel this they introduced their dynamic algorithm, Automatic or Administrator Response algorithm (AOAR).

3.2.4 Incomplete imperfect information

Alpcan et al. modeled the interaction of an attacker and therefore the network administrator as a repeated game with 'finite steps' or 'infinite steps'. This work assumed that the sensor system which is deployed to detect the attacks is imperfect and thought of the sensor system as a 3rd 'fictitious' player almost like the 'nature' player in standard theory of games. It found the Nash equilibrium during a repeated game via simulation considering an easy scenario with three specific attacks.

You et al. described the way to model the network security scenario considering the interaction between the hacker and therefore the defender as a two player, zero sum game. It gave a taxonomy of relevant theory of games and network security terms and suggested a correlation between them. They acknowledged at the utility of Nash and Bayesian Equilibria in representing the concepts to predict behavior and analyzed the interaction between the attacker and therefore the defender. They gave an inventory of theory of games terms that are relevant within the network security scenario and explained them. They explained how min max theorem for this game is formulated. They concluded by suggesting that to unravel this problem linear algorithms would be appropriate.

3.3Scope of future research

Many of the present game-theoretic security approaches are supported either static game models or games with perfect information or games with complete information . However, actually a network administrator often faces a dynamic game with incomplete and imperfect information against the attacker. a number of the present models involving dynamic game with incomplete and imperfect information are specific to wireless networks while a couple of others don't consider a sensible attack scenario.

Some of the restrictions of this research are:

(a) Current stochastic game models only consider perfect information and assume that the defender is usually ready to detect attacks;

(b) Current stochastic game models assume that the state transition probabilities are fixed before the sport starts and these probabilities are often computed from the domain knowledge and past statistics;

(c) Current game models assume that the players' actions are synchronous, which isn't always realistic;

(d) Most models aren't scalable with the dimensions and complexity of the system into account.

4 Summary

Hackers activities have significantly increased in cyber space, and are causing damage by exploiting weaknesses in information infrastructure. theory of games offers promising perspectives, insights, and models to deal with the ever changing security threats in cyber space. This survey highlights important game theoretic approaches and their applications to network security and descriptions possible directions for future research. it's to be noted that classes within the taxonomy might be divided into more detailed levels. it's obvious that new classes may have to be

introduced within the taxonomy after new defense mechanisms are proposed within the future.

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Research Paper on Website Development

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ABSTRACT: ***This research paper discussing the various useful tools and techniques that are used in a development of a website. We also discuss about the procedure follow in a website, , we discuss life cycle model and framework development of web application. In this report, various review papers material also included for understanding of problems can be facing by the users. This Paper tells about the technologies used in web development and how easily we develop website using HTML, CSS JavaScript and Python.The web application is easy relatively inexpensive, cloud-based tools***

INTRODUCTION

Web development is the work of designing a web site for the or an intranet means this can be access by all over the world but only by person related to that organisation. Web development can be from developing a simple single static page of plain text to complex web-based internet applications.
A website can be defined as a collection of different webpagesdeveloped through scripting language that are all related to each other and can be accessed by visiting a homepage, by using a browser like Internet Explorer, Mozilla, Google Chrome, or Opera.

Each website has its own unique URL which is a unique global address called domain name. A URL comprises of –

- **Protocol** :- Protocol used to access the website, It can also be https; port 443.
- **Subdomain**:- Subdomain which by default is www.
- **Domain name**:- domain names are normally chosen to have a meaning.
- **Suffix name**:_ Suffix name can be .com, .info, .net, .biz, or country specific.
- **Directories**:-It is a folder in the server that holds this website.
- **Webpage**:- webpages can be design using multiple languages like HTML, CSS, JavaScript, Python and PHP etc.

LITERATURE REVIEWS:-

I have taken required web development data from online material as well as offline material. And some details included from research paper of researchers also used some book material for research methodology concept. The details of that books and links given in references

OBJECTIVES:-

- Understand the technologies used in web development
- Various different tools used by web development
- HTML is so easy to produce simple web pages
- Understand the Roll of CSS and JavaScript in web development
- Apply colors to web page elements

RESEARCH METHODOLOGY:-

For this research paper, Data Can be collected using different sources of research methodology .Data collection is a process of collecting information from all the relevant sources to find answers to the research problem, also test the hypothesis and evaluate the outcomes.

There are two types available for data collection Primary Data and Secondary Data .

1.Primary Data:-Primary data is a term for data collected at source. This type of information is collecteddirectlyfor first time from first hand sources by means of surveys, observations and experimentation and not subjected to any processing or manipulation and also called primary data.

A. *2.Secondary Data:- It refers to the data collected by someone other than the user i.e. the data is already available and analysed by someone else. The sources of secondary data include various published or unpublished data, books, magazines, newspaper, trade journals etc.*

From this two methods I have used primary as well as secondary method for collecting information of web development technology.Primary data is collectedfrom various sources from that observation method is used for this research paper

NEED OF WEBSITES: -

Website act as abridge between one who wants to consume it if you are running a business.

I. Website is an online brochure where you can advertise your business offers

II. Blogger have possibility to influence your reader.

III. You can also show all your ideas and publish them on a website

TECHNOLOGIES & TOOLS USED FOR CREATING WEBSITES

1. Mark-up Language- HTML, DHTML, XML, XSLT etc.
2. Cascading Stylesheet (CSS)
3. Scripting Language – Perl, JavaScript, PHP etc
4. Web creation and editing software – Notepad, Frontpage, Site builder, ColdFusion etc.

B.

C. WEBSITE DEVELOPMENT LIFE CYCLE

1. Gathering Information: Purpose, Main Goals

The most important task in the first step is bring clear understanding of your future website purposes, the main goals you wish to get, and the target audience you want to attract to your site. These type of a website development questionnaire helpsus to develop the best strategy for further project management. Different types of websites provide visitors with different functionality and features, which means that different technologies should be used according to purposes.

2. Planning: Sitemap and Wireframe Creation

Planning stage of the website development cycle, the developer first creates the data that allow a customer to judge how the entire site will look.**Sitemap** is created according to the information that was gathered together in the previous phase. The sitemap help us to understand how the inner structure of a website display but it doesn't describe the user interface.

A wireframe is a visualize representation of the user interface that you're going to create. But it doesn't contain any design elements such as colours, logos, etc. Wireframe describes only those elements that will be added to the page and their location

3. Design: Page Layouts, Review

During the design phase, your website takes shape. All the visual content which you want in web sites such as images, photos, and videos is created in design step. Once again, all the information that was gathered through the first phase is crucial. When you work on design the customer and target audience must be kept in mind.

The website layout is the result of what a web designer's work. Layouts of websites contain colours, logos, images and can give a general understanding of the future product.

4. Content Writing

Content writing stepsused for the creation of headlines, text editing, writing new text, compiling the existing text, etc.,

5. Coding

At the coding step you can finally start creating the website. first of all you must create the home page, and then all sub-pages are added, according to the website hierarchy that was previously created in the form of a sitemap.

6. Testing, Review, and Launch

Testing is probably the most routine part of a web development process. Every single link must be tested to make sure that there is no broken link among them. You should check each form, every script, run a spell-checking software to find possible typos. You can use code validators for checking if your code follows the current web standards.

After you check and re-check your website, it is a time to upload your website to a server. An FTP (File Transfer Protocol) software is used for uploading purposes. After deployed the files, you should run another final test to be sure that all your files have been installed correctly.

7. Maintenance:

The important thing in web development is to keep your website up to date andregular updates will prevent you from various bugs and decrease security risks if any.

HOSTING WEBSITES

Web hosting is a service which provide us online space for storage of web pages. All these web pages are made available through WWW (World Wide Web). The companies which offer website hosting facilitiesare known as Web hosts.

A Websites is composed of several elements and while setting up a websites, you would have to take care of each each of them

- To set up a website and make it live, you should first purchase a hosting plan.
- Select a domain name for this website.
- Point the DNS records to the server or the hosting provider
- Develop the content that you want to publish on the website
- Check if you need to purchase a public certificate and installed it
- Publish the web page on the internet

II. CONCLUSION

- Websites are playing important part in any kind of business.70% of the population is using dynamic and attractive websites
- Static websites have their own place for where there is specific information requiredfor the platform.
- As comparing Static websitesto dynamic websites it require less investment
- Knowing basic HTML is a skill that will help you with blogging, working with Wiki's, Facebook, and much more.
- HTML and JavaScript easy to create simple website.

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OVERVIEW: SMART NOTE TAKER

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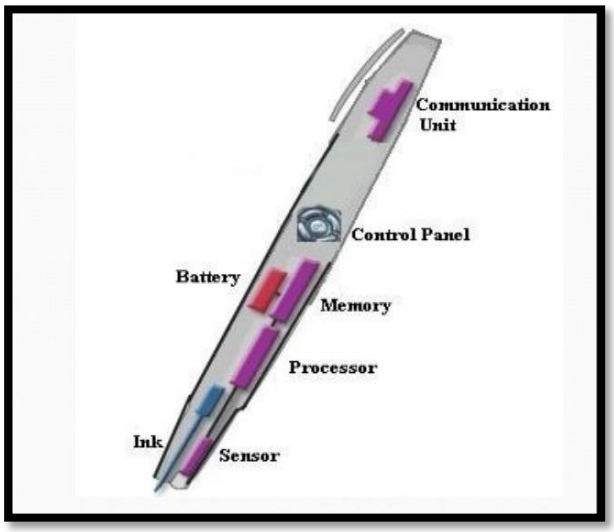
ABSTRACT:

In today's fast technological life smart note taker is useful device who satisfy people's need . This device can be used in many ways. The written note will be stored on the memory chip of pen and will be able to read in digital medium after the job has done. This will save time and facilitate life. This device is very useful for blind people because they can write anything freely. This paper represents the actual construction of smart note and how it is beneficial for the user. The java applet is used to design this product. This paper also represents the current product of smart note taker.



Introduction:

The smart note taker is mostly used in NPTEL lectures."Smart Note Taker" is the technology that satisfies the needs of people who want to take fast and easy notes. The smart note taker provides the facility to people of writing notes in air while they are busy in their work. These written notes are store in memory chip of pen and after conversion it will be able to read in digital medium. To meet the technical requirements of this product we need operating system like windows or Linux.

Feature of smart note taker

1. Smart note taker converts the handwritten notes into editable text.
2. It identifies nearly twenty-two languages and also very helpful for the people to give the presentations
3. It is good for blind people, who can not see but think and write freely.
4. It have extendable memory chip is used.

Construction and components of smart note taker

Camera-

To save the time we can insert the camera in our pen and with the help of this we can take the picture of notes and this notes are save in memory chip.

Sensors

It is error detection sensor. When we write notes in air if there is some alphabet mistake, that sensor detect the wrong letters thus we can make no mistake in our notes.

Battery Life

To work a longer period of time we have necessary a more powerful battery in this pen. It should be rechargeable battery. If the battery is weak it can be dead by writing a small amount of notes.

How does it work?

Smart note taker technology is work as follows

1) In the first step you simply write your notes with provided standard ink pen. This pen is wireless so you can use it anywhere.
2) Then after you simply upload your notes on your computer when you back to the home and also you can write anything after connecting.
3) All your notes will be converted into editable text using provided suitable software.

Current product of smart note taker

1) PC Note Taker

The **PC Notes Taker** is an electronic pen that gives permission to you for write notes and letters in your own handwriting, but you can edit them on your PC. Attach A4 size plain paper to the Notes Taker's base unit, and as you write the pen transmits signals to the unit's receivers. This base unit is connects to your PC through USB cable, and your notes will be appear on your PC as soon as you start writing.

2) Mobile Note Taker

Mobile note taker is the handwriting capture device. It is the world's first portable handwriting capture device based on natural handwriting as input .attach any kind of plain paper and use this electronic pen to capture, store and share handwriting drawings, notes at meeting. Mobile note taker has built in LCD to confirm input.

Applications

1. It converts handwriting into text .
2. It add handwritten caption into photograph.
3. It can be used teacher directly or indirectly by student.

Advantages

1) It is reliable and powerful
2) It is time saving approach.
3) It is helpful blind people that think and write freely.
4) It is easy to use wireless connection.

Disadvantages

1) It is expensive.
2) The data from this product cannot be transferred to other device.
3) It has huge damage risk
4) Only high class people can afford this type of product.

Conclusion: This device provides the flexibility as per classical pen. It reduces the writing efforts on paper. Due to writing notes on air surface, this device is very useful to blind people. So it can be use widely.

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Conflict between dynamic and manual IP of DHCP protocol and its remedy

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Abstract:-*DHCP allow to have fixed / static address to any device and also assign address to client. DHCP also allow to set IP address to client. and client or machine who do not have fixed IP or manually assigned IP will get IP from DHCP manually. In case dynamically assigned IP is configured on network by DHCP and client or machine with same IP is request latter may get conflict and both client will get hang. Conflict may be occurring when dynamic IP of pre assigned client and manually IP client is same. In this paper we are trying to propose a remedy for conflict.*

Introduction:-

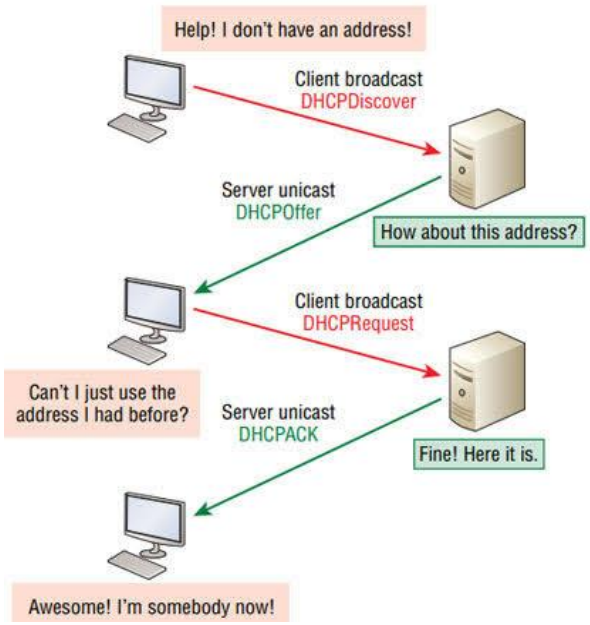
Dynamic Host Configuration Protocol abbreviated as DHCP is employed in a network for assigning IP addresses dynamically. This allows the network administrator to examine an IP address pool for the clients, so that he can monitor entire system instead of checking each machine when there are any IP clashes. Thus way DHCP provides fast, relible and auto administration of IP addressing in a system. (Mahantesh B Patil, May 2017)

In a large network where huge number of hosts is associated it is very difficult for a network administrator to manage Reliable IP address arrangement for every host (Mahantesh B Patil, May 2017)

DHCP maintain a array of client and it IP address. If client already register it as fixed IP it will be store in IP array maintained by DHCP so that same IP address will not assign to any other client. for example printer or some important computer like computer of a chip etc. so that they may not conflict with any other computer.

DHCP assign address to newly joined client (who do not have fixed IP). when a client with fixed IP request for connection. It will be registered and may be conflict with DHCP assigned IP client.

How DHCP work:-



(Mahantesh B Patil, May 2017)

How DHCP server assigns IP address to a client?

DHCPDISCOVER: As a new node is connecting to the network, it broadcasts the DHCPDISCOVER message which contains the source address as 0.0.0.0 to every node on the network including server. As DHCP server receiving the message returns the DHCPOFFER message from the requested host which contains the server address and new IP address to the client. (Sai)

DHCPOFFER: When there are multiple servers on the network, client receives multiple DHCPOFFER messages. It is up to the host to select a particular message. (Sai)

DHCPREQUEST: The requested host on receiving the offer message, it again broadcasts the DHCPREQUEST message on the network with the address of the server whose offer message is accepted by the host. The server which contained to that server address sent by the client checks whether the address to be assigned to the node is available in the IP array. (Sai)

DHCPACK : When the address is assigned , it marks the IP address in the storage as reserved and

unavailable to ensure relibility. Follwoed by the server sends DHCPACK packet to the requested client which contains network informatio which contain IP address, subnet mask, gateway address. If the address is assigned to other machine before it, then the server do send the packet DHCPNAK to the requested client indicating that the IP address is assigned to some other machine/client. (Sai)

DHCPRELEASE : And finally, If the host wants to move to other network or if it has finished its work, it sends the DHCPRELEASE packet to the server indicating that it wants to disconnect. Followed by server marks the IP address as available in the IP array so that it can be assigned to other machine. (Sai)

While assign IP Dynamically DHCP check IP pool(which also referred as IP array), which contain list of all preconfigured Static IP(IP of Printer or IP of Chip's machine) and dynamically assigned IP by DHCP and IP of machine which are connected to network having IP configured manually.

Suppose dynamically assigned IP of a client (A) is the same as IP of newly requesting machine which has manually configured IP (B), conflict is supposed to occur which hang up machine A as well as machine B.

Proposed Solution:-

Hear we try to propose a remedy for conflict as,

IP pool or IP array maintained by DHCP server contain IP addresses of Static devices like printer or chips machine.

When a machine or client having IP configured manually is request to DHCP server and its IP is free to configure in network, it should store permanently in IP pool or IP array maintained by DHCP protocol same as IP of static devices.

So that once a manually assigned IP client is request on network for configuration its entry will be made in IP array maintained by DHCP server, and may not assign to any client or machine dynamically in future.

If in future if another machine with distinct MAC id is request for configuration on network it may not register, and if already register machine with stored IP and MAC id in IP pool or IP array in DHCP it will register on network with same IP address.

Machine / client which need IP dynamically will get IP other than IP in IP array and we can avoid conflict up to certain extend.

Weakness of Proposed solution:-

Since size of IP array shall large and may leads to slow down dynamic IP allocation task, since every time DHCP need to check whole IP array while assign IP dynamically.

if a IP assigned dynamically to a client and new client with manually assigned IP which is same as previously allocated may cause conflict.

Conclusion:-

We can avoid conflict in network up to certain extend.

It shall increase size of DHCP protocol software also.

Time require to allocate dynamic IP to client may take some extra time since every time it need to check for IP array.

Extra space will require for IP array.

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Blue Eye Technology using Artificial Intelligence

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ABSTRACT:-If it possible to create a computer, which can interact with us as we interact each other? let us Imagine a fine morning you walk on to your computer room and switch on your computer, and then it tells you "Hey , good morning you seem to be a bad mood today. And then it opens your mail box and shows you some of the mails and tries to motivate you. It look to be a stories, but it will be the life lead by "BLUE EYES" in the very near future.
The idea behind this technology is to give the computer for the human power. We all have some perceptual abilities. That is we can understand to each other's feelings. For example we can understand ones emotional state by analyzing his face expression. If we add these perceptual abilities of human to computers would enable computers to work together with human beings as Familiar partners. The "BLUE EYES" technology goals at creating computational machines that have emotional and conscious ability like those of human beings.

Keywords:-objective ,Application,AI,
Types of Sensor

INTRODUCTION

The Blue eyes technology makes a computer to understand and brains human feelings and behavior and also enable the computer to react according to the sensed for emotional levels.[1]
The world of science cannot be careful in terms of development and progress. It has now reached to the technology known as "Blue eyes technology" that can sense and control human emotions and feelings Network and with no Infrastructure based system. Foundation Ad hoc remote systems, versatile hub can move during imparting and furthermore conceivable leaves the range, and conceivable which gets into the scope of another hubs [2]. While in Infrastructure less systems is known as the specially appointed remote systems. In MANET during correspondence no any base stations or any brought together authority is through gadgets. Eyes, Fingers, Speech are the elements are which help to sense the emotion level of human body. This paper implements a new technique known as Blue eyes technology which identifies human emotions using image processing techniques by extracting eye portion from the capture image which is then compared with stored images of data base. once identifying mood the songs will be played to make human emotion level normal.

All human beings have some emotional capabilities, the ability to understand each other's emotional level or feelings from their facial expressions. Blue eyes technology Purpose at creating a computer that have the abilities to understand the perceptual powers of human being by make their facial expressions and react consequently to them. The Blue Eyes technology system is a arrangement of a set of hardware and software systems.[2]

Fig.1 Blue Eye Technology

OBJECTIVE:-

The objective of Blue eyes technology is to develop computing machine having sensory and emotional ability like those of humans.[3]

The goal of human computer interaction (HCI) is to make an Modifying, smart computer system. A non-interrupting way to obtain information about a person is through feel. People use their computers to obtain,

store and operate data using their computer. In order to start creating smart computers, the computer should start in advance information about the user. The proposed method for in advance user information through touch is via a computer input device, the mouse.

Beginning the physiological data obtained from the user, an emotional state may be determined which would then be related to the task the user is currently doing on the computer. Over a period of time, a user model will be built in order to increase a sense of the user's behavior. The scope of the project is to have the computer get used to to the user in order to create a better working environment where the user is more productive.

The goal of the blue eyes technology is to give human power or ability to a computer, so that the machine can naturally interact with human beings weare interact with each other. All human beings have some emotional capabilities, the ability to understand each other's emotional level andfeelings from their facial expressions. Blue eyes technology goals for creating a computer that have the abilities to understand the emotional powers of human being by recognize their facial expressions and react accordingly to them.[4]

APPLICATIONS

Surveillance Systems:-

A large retailers have implemented observation systems that record and understand customer movements, using Blue Eye software. The Blue Eye works by tracking learner, eyebrow and mouth movement. When monitoring learner, the system uses a camera and two infrared light sources placed inside the product display. Llight source is associated with the camera's focus; the other is a little off axis. When the eye looks into the camera-aligned light, the learner appears bright to the sensor, and the software registers the customer's notice. In This is way it captures the person's profits and selling preferences. Blue Eye is actively built-in in some of the leading retail outlets.

Automobile Industry:-

Blue Eye can be useful in the automobile industry. By simply touching a computer input device such as a mouse, the computer system is designed to be able to determine a person's emotional state. For cars, it could be useful to help with serious decisions like: "I know you want to get into the fast track, but I'm frightened I can't do that. You also upset right now" and therefore help in driving safely.

Video Games:-

We may possibly see its use in video games where, it could give individual challenges to customers playing video games. normally targeting profitable business. The integration of Children's toys, technologies and computers is enabling new play experiences that were not commercially possible pending newly. Intel Play QX3 Computer Microscope, the Me2Cam with Fun Fair, and the Computer Sound Morpher are commercially available smart toy products developed by the Intel Smart Toy Lab in. One idea that is common across these PC-connected toys is that users interact with them using a combination of visual, audible and perceptible input & output Methods. The presentation will be provide an overview of the interaction design of these products and create some unique challenges faced by designers and engineers of such experiences targeted at learner computer users, namely young children.

An Alternate To Keyboard:-

The common and useful approach from things we have identify. Our several favorite things' look communicate their use; they show the change in their value though shiny surface. As technologists we are now balanced to imagine a world where computing objects correspond with us in-situated; where we are. Use of our looks, feelings, and actions to present the computer the skill it needs to the work by us. Keyboards and mouse will not continue to overlook computer user interfaces. The Keyboard input will be replaced in large measure by systems that identify so, what we want and require less clear communication. Sensors are fast reliability and Universality record existence and actions; sensors we see when we enter a space, sit down, recline down, push level, etc. insidious infrastructure is recording to it.

A Better Future Scenario:-

The Recent interfaces between computers and humans can present information brightly, but not have intelligence of whether that information is always Viewed or unstated. In contrast, new real time computer vision techniques for recognized people allows us to create "Face-responsive Displays" and "understanding Environments".

ARTIFICIAL INTELLIGENCE:-

The Artificial intelligence (AI) is intelligence Broadcasted by machines. The field of Computer Science by AI research defines itself as the study of "intelligent agent ": in any device that perceives its environment and takes actions that make the most of its chance of success at the some goal. Co-Equally, the term of AI is applied when a machine Performer "Imaginary" functions that humans relate with other human minds, such as "learning" and "problem solving" known as ML. Machines become increasingly able, mental facilities once consideration to require intelligence are removed from the definition.[5]

SPEECH RECOGNITION:

It is important to think the environment in which the speech recognition system has to work. The sentence structure used by the speaker, noise level, noise type, position of the microphone, and speed and manner of the user's speech are some factors that may concern the quality of the speech recognition . The Artificial intelligence comes into put where an automatic call handling system is used without employing and any telephone operator.

APPLICATIONS OF SPEECH RECOGNITION:-

The most important benefits of speech recognition system is that the user do other works concurrently. The user can focus on observation and physical operations, and still control the technology by voice input guidelines. So Another main application of speech processing is in armed operations. Voice control of Machine gun is an example. With dependable speech recognition tools, pilots can give instructions and information to the computers by simply speaking to their microphones - they do not have to use their hands for this reason. One example for radiologist scanning of X-rays, CT scans ,ultra sonograms, and at the same time dictating conclusions to a speech recognition system connected to word processors. The radiologist can focus his notice on the images for relatively by writing the text.[6]

For implementing the Artificial Intelligent Speech Recognition system in Blue Eyes technology, the working environment should be very important. The manner of the user's speech, grammar, noise type, noise level and the position of the microphone are some important factors that may influence the features of speech recognition system. In Artificial Intelligent Speech Recognition system, an automatic call handling method is implemented without any telephone operator.[6]

Types of Emotion Sensors used in Blue Eyes Technology:

For Hand - Emotion Mouse:

The mainobjective of Brain Computer Interface (BCI) is to develop a smart and adaptive computer system. These types of task must include speech recognition, eye tracking, facial recognition, gesture recognition etc. software and hardware. Equally in Blue Eyes technologies, we want to build a system have the ability to identify all these perceptual abilities of human beings.Now Blue Eyes technology, the machines have the ability to identify the minor differences in the moods of human beings. Approximately a person may strike the keyboard quickly or softly depends on his mood like happy or in irritated. The Blue Eyes technology allows the machines to identify these minor emotional differences of human beings even by a single touch on the mouse or key board and the machines started to react with the users rendering to this emotional levels. This is done with the direction of intelligent devices like "Emotion Mouse". Really this Emotion Mouse is an input device to track the emotions of a user by a simple touch on it. The Emotion Mouse is designed to calculate and identify the user's emotions such as fear, surprise, anger, sadness, happiness, disgust etc. when people is interacting with computer. Goal of theseobjectiveEmotion Mouse is to gather the user's physical and physiological information by a simple touch.[7]

Sentic Mouse

The Sentic mouse is sensing apparatus resulted from an experiment conducted by Lang et al. Sentic mouse is used for the measure a user's emotional Behavior response. Emotional Behavior is user's emotional consideration of the stimulus. It Convert from positive (pleasure, attraction, and liking) to negative (displeasure, avoidance, disliking). Lang et al. ask the subjects to self-rate their emotional response by provided that a series of pictures. The data such as sentic data, heart rate, and self assessment were then measured and were compared to each other and with theoretical values predicted. An regular mouse, which was improved with a pressure sensor, was used to collect the senticdata . This process is thus used to assess the emotional Behavior response of a user.[8]

For Eye - Expression Glass:

For the Eye Expression Glass is an different for the usually available machine vision face or eye recognition methods. By analyzing the pattern recognition methods and facial muscle variations, for the glass senses and identifies the expressions such as interest or confusion of the user. The prototype are used for this glass uses piezoelectric sensors.[9]

The Eye look tracking methods explores a new way for handling 'eye gaze' for man machine interfacing. The look tracking has been considered as an excellent pointing method for giving input to computers. But many problems exist with this traditional eye look tracking methods. To overcome these difficulties an alternative approach in termed as MAGIC & Manual and Look Input Flowed is projected. This method, eye look pointing seems to the user as a manual job, utilized for fine selection and manipulation processes. Even a large amount of the cursor movement is removed by twisting the cursor to the eye gaze portion, which environs the target.

The collection and pointing of the curser is primarily controlled by manual means but also directed by a gaze tracking mechanism and is commonly known as MAGIC Pointing. The main Purpose of MAGIC pointing is to use 'gaze' to twist the previous position of the curser to the area of the target, reasonably where the user was looking at, so that reduce the cursor motion amplitude required for target selection. When the cursor position is identified, only a small movement is needed by the user to click on the target by a manual input device that is to complete Manual Achievement with Gaze Initiated Cursor or Manual and Gaze Input Cascaded (MAGIC) pointing. Two MAGIC Pointing methods – conventional and large in terms of cursor placement and target identification, were outlined, analyzed and executed with an eye tracker unit.[9]

Conclusion:

The blue eyes technology covers the way for asimplified life through a more delicatecomputer device. It is a very advanced systemwhich avoids possible threats resulting fromhuman errors varying from weariness,oversight, weariness, etc. thus Bluetooth provides wireless communication and themovements of the eye enables us to collect alot of information about the user.The identification of facial expressions has alot of applications such as; medicalapplications as pain detection, monitoring thedepression and further more .The daywhen this technology would be used at homeis not far away. Even though this makes the people idle, it is going to be a technologicalcalculation.

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10. Internet Browser

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APP STORE:A NEW VISTA FOR SOFTWARE ENGINEERING RESEARCH

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ABSTRACT:-
App Store Analysis studies of information about applications obtained from app stores. App stores provide a prosperity of information derived from users that would not exist had the applications been spread via previous software deployment methods. App Store Analysis combines this non-technical information with technical information to learn trends and behaviors within these forms of software Archive. Findings from App Store Analysis have a direct and Triable impact on the software teams that develop software for app stores, and have Attend to techniques for requirements engineering, release planning, software design, security and testing of this technique. This Paper describes and compares the areas of research that have been Analyze thus distant, drawing out common aspects, trends and directions future research should take to address open problems and challenges.

Keyword:- App store, analysis, API, release planning, requirements engineering, reviews, security.

Introduction:-
In this App stores are a recent experience Apple's App Store and Google Play were launched in 2008, and since then both have accumulated in excess of one million downloadable and Payable apps. Google announced that are numbers of activated Android devices in 2015. Mobile app stores are also extremely beneficial and the set of online mobile app stores were projected to be worth a combined billion of USD in 2015 . The success of app stores has Corresponds with the mass consumer acceptance of smartphone devices. Smartphones existed preceding to the launch of these stores, but it is not awaiting 2008 that users could truly develop their extra computing power and resulting flexibility through downloadable apps. In house and even commercial applications had been available before the launch of app stores, but app stores had some differences: availability, compatibility, simplicity of use, variety, and user-submitted this content.

This paper we provide a survey of journalism that performs "App Store Analysis for Software Engineering" between 2000 and 2015. Our contributions are We provide proper definitions of apps, stores, and technical and non-technical attributes, there are used for App Store Analysis research & We study the growth patterns of App Store Analysis writing both overall, and in each developing subcategory. We analyzer the scale of app samples used, and discuss how this is likely to progress in the future. So We identify some of the key ideas available in App Store Analysis, in addition to the common aspects, trends and future directions, to help the readers to understand the succession of the field in general.

Definition:
App store is a type of digital distribution platform for computer software called Applications, repeatedly in a mobile context. In Apps provide a specific set of functions which by the definition, do not include running of the computer itself. The Complex software designed for use on a personal computer, for example, have a related app designed for use on a mobile device. nowadays apps are normally designed to run on a specific operating system such as modern iOS, macOS, Windows or Android but in the past mobile carriers had their own portals for apps and related media content.[1]

App is an item of software that anyone with a suitable platform can install without the require for technical knowledge.[10]

App Store is a collection of apps that provides for each app, at least one non-technical attribute. Technical attribute is an attribute that can be obtained only from the software.

Non-technical attribute that cannot be obtained only from the software.

App stores are typically organize the apps they offer based on the function provided by the app (including games, multimedia or productivity), the device for which the app was designed and operating system for which the app will be run.

Overview:

In this survey is structured for describes the process used to find the included text; following section breaks down the growth trends in non-technical research compared with technical only research, and next section for breaks down the growth of scale of apps used in key ideas in each subfield of app store analysis are identified in following sections.

We define the App Store Analysis subfields, based on the writing text gathered through the process explained .We discussed on "API Analysis" "Feature Analysis", "Release Engineering", "Review Analysis", "Security", "Store Ecosystem", and "Size and Effort Prediction". Now we discussed the Closely related work & guidelines and recommendations for future app store analysis authors are outlines ,we identify potential future directions and conclude our findings in Paper.

LITERATURE REVIEW:-

Journalism apps offer exciting interactive versions of stories that are sure to engage children's interest and encourage in them a love of literature & Teachers looking for good books to share with students and parents interested in helping their children learn to worship books at will find all the help they need at these apps.[2]

Scope:-

App Store Analysis journalism encompasses studies that perform analysis on a collection of apps mine from an App Store. We are particularly interested in studies that combine technical with non-technical attributes, as these studies initiate the new research opportunities presented by app stores. but, we also include studies that use app stores as software repositories, to validate their tools on a set of real world apps, or by using specific properties such as malware authentication process apps go through the before being published in the major app stores.[3]

Our survey is not a methodical journalism Review . The area of App Store Analysis is motionless developing, but it is not reached a level of maturity at which research questions can be chosen and asked of a well-defined body of journalism. Our study goals to define, collect and curate the disparate journalism, arguing and demonstrating that there does, really, exist a consistent area of research in the field that can be termed "App Store Analysis for Software Engineering".

SEARCH METHODOLOGY:-

In order to collect all significant journalism to date that meets the scope defined we perform a systematic search for the terms defined below, from each depository .Unique papers are collected into a table, and a decision is made based on the insertion criteria in three stages:

Title: We remove publications that are clearly unrelated from the title.

Abstract: In this section examine the abstract and remove publications which are clearly irrelevant according to the scope is defined .

Body: Results are read fully and a judgment is made on whether the paper are meets the key requirements on what is defined as "app store analysis" in our scope, or It is very applicable to the field and so should be included as "expanded literature", to put the main literature into context. Papers matching the requirements of are included in this survey.

API ANALYSIS:-

Papers that take out the API usage from app APKs or source code, and combine this information with nontechnical data are described in this section. All API analysis text studied apps from the Android stage only. This may due to the availability of tools which can be used to decompile the apps and extract their API calls, there are freely available and can be applied to downloaded app binaries. It is possibly surprising that such analyses have not also been performed on the Apple platform, iOS, since the store was launched in Nov 2008. This might be because iOS binaries are only available for the intended platforms, and cannot be downloaded to, or used from a desktop computer without an Apple Developer account, it is not free. Even with such an account, app binaries or source code would be needed, and neither are freely available due to a copyright on binaries and many iOS apps being paid-for apps. Due to these difficulties, in uncertain whether it will be possible for future studies to extract API information from iOS apps; in fact, it has may become harder since the move (in iOS9) to developer-submitted LLVM IR (Intermediate Representation) binaries, which are compiled for specific platforms by Apple.[5]

FEATURE ANALYSIS:-

This Papers that extract feature information from either technical or non-technical sources of information are discussed in this future analysis. We can review that these research papers study a spacious range of platforms: Android, iOS, Nokia Widsets, Blackberry and Windows Phone. In addition, the publications examine a large number of apps.

This section show that it is possible to remove feature information from sources other than source code or requirements lists. in addition, many different methods are used for extraction and classification of

features, including natural language processing, topic modeling and clustering. The work shows that analysis of app collections can be increased with meaningful technically-oriented information, mined from freely available app store pages.

REVIEW ANALYSIS:-

Review analysis discuss in concerns the study of app reviews; a summary of discussed literature can be found . We can see that the majority of studies focused on the Google Play store, with a minority focusing on Apple App Store, and studying Blackberry store. Review-centred literature was first published in 2012, and next has gained significant and increasing interest and activity: we can see that there are greater numbers of requirements or reviews literature each year. We hypothesize that this is due to the tenure of the stores, and the succession of the field.

Review Analysis journalism mostly studies Apple and Google stores, attractive future comparison with Windows and other store reviews.

SECURITY:-

In Studies relating to app security are discussed in this topic. We can see that the number of studies Advanced year on year until 2013 and then remained stable. A large proportion of these papers do not merge technical with non-technical attributes. in its place, they use properties such as the validation that highly rated apps have received, through being downloaded, used, and highly rated by many users. Much of the security-related literature uses the property that popular apps can generally be implicit to be non-malware, since they are scanned prior to being hosted in the store, and have large user bases.

FUTURE WORK:-

Expectations: We expect to see the scale of app samples used increase in the years to come, as app stores increase in scale. Google Play and Apple App Store have both exceed millions of apps, and already there are studies featuring over 1 million apps. We also expect to see more longitudinal studies: the sub-fields for prediction and release engineering studies lend themselves particularly well to longitudinal data, and both of these fields grew in 2015.

A concept that could be particularly valuable to researchers is that of a centralized repository of app store data that can be freely accessed, consisting of apps that are not just "free and open source". on the other hand, legal and copyright issues present effective barriers to the construction of such a repository from being created at present, and so this remains an open problem.

CONCLUSION:-

We have survey the published text in App Store Analysis for software engineering, and identified the key sub-fields of App Store Analysis to date API analysis", "feature analysis", "release engineering", "review analysis", "security analysis". Newer sub-fields such as "release engineering" and "size and effort prediction" have made known strong growth in 2015, suggesting that they might eventually overtake other smaller sub-fields such as "store ecosystem".

In general, we find a shockingly wide and various set of techniques and applications in App Store Analysis, highlighting the health and future potential of the field. App Store Analysis opens up an exciting new view for software engineering research which can connect and deeply understand relationships between social, technical and business facing aspects of software development, deployment and uptake in ways previously impossible due to scarcity of data.

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Image Processing Techniques: A Review

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ABSTRACT*: The image processing is an analyzed and use of a digitalized image, especially in order to improve the quality of image processing. DIP technique can be applied in variety of dissimilar fields such as Diagnostic image analysis , Matching, Background subtraction in video, Localization of tumors, Measuring tissue volumes, Locate items in satellite images (roads, forests, etc.) ,Road traffic control systems, Locating objects in face recognition, iris recognition, agricultural imaging, and medicinal imaging. DIP addresses challenges and problems like that loss of image quality, to enhance degraded image.. The main DIP techniques are image compression, and segmentation are discussed. Digital Image Processing is a quickly evolving field with increasing applications in Science and Engineering. Modern digital technology has made it possible to operate multi-dimensional signals. Digital Image Processing has a wide range of applications.*

Introduction

Image processing is spreading in various fields. Image processing is a method which is commonly used to improve raw images which are received from various resources [1]. It is a technique to transform an image into digital form and implement certain actions on it, in order to create an improved image or to abstract valuable information from it. It is a kind of signal dispensation where image is an input and output is also an image or features related with image. The purpose of image processing is distributed into several groups which are given below. Visualization: Image processing is used to identify those objects which are not detectable. Image sharpening and restoration: In image processing, various techniques are applied on the picture to produce a better image. Image retrieval: By image processing user can detect only that portion of the picture which is relevant to the user. Pattern measurement: Numerous elements in an image are measured. Image Recognition: Substances in an image are recognized. Image processing use mathematical procedures for processing of images. Two methods used for processing of images are analog image processing and digital image processing

Keyword: Image, purpose, Application, image processing techniques

What is an Image

Image is define as a 2-dimensional function **(x,y)**, wherever x and y are spatial coordinates, and the amplitude of **F** at any pair of coordinates (x,y) is called the **intensity** of that image at that point. When x,y, and amplitude values of **F** are finite, we call it a **digital image**. or an image can be defined by a two-dimensional array specifically arranged in rows and columns. Digital Image is collected of a finite number of elements, each of which elements have a specific value at a particular location. These elements are referred to as picture elements, image elements, and pixels. A *Pixel* is most generally used to denote the elements of a Digital Image.

The above figure is an example of digital image that you are now seeing on your computer screen. But actually, this image is nothing but a two dimensional array of numbers ranging between 0 and 255

1)

Purpose of Image processing

The main purpose of the DIP is divided into following 5 groups:

1. **Visualization:** The objects which are not observable, they are observed.
2. **Image sharpening and restoration:** It is used for better image resolution.
3. **Image retrieval:** An image of interest can be seen
4. **Measurement of pattern:** In an image, all the objects are measured.
5. **Image Recognition:** Each object in an image can be distinguished.

Applications of Digital Image Processing

Some of the major fields in which digital image processing is widely used are mentioned below

- Image sharpening and restoration
- Medical field
- Remote sensing
- Transmission and encoding
- Machine/Robot vision
- Color processing
- Pattern recognition
- Video processing
- Microscopic Imaging

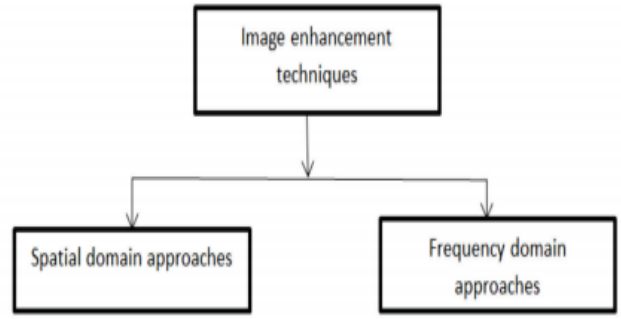
Different Types of Image Processing Techniques

There are six types of enhancement techniques.

1. Image enhancement
2. Image restoration
3. Image compression
4. Image segmentation
5. Image recognizing
6. Image smoothing

1. Image enhancement

Image enhancement techniques are mathematical techniques that are aimed at understanding improvement in the quality of a given image. The result is additional image that demonstrates certain features in a manner that is better in some sense as compared to their appearance in the original image. One may also derive or compute countless processed versions of the original image, each presenting a selected feature in an enhanced appearance. Simple image enhancement techniques are developed and applied in an ad hoc method. Advanced techniques that are improved with reference to certain specific requirements and objective criteria are also available.

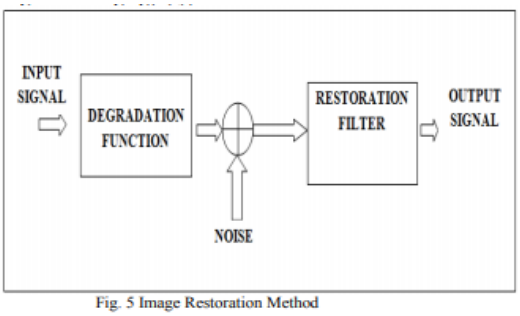


Spatial domain techniques are work with pixels. In this technique the values of pixels are altered to achieve the desired enhancement. It contains various techniques whose working directly dependent on the pixels of the images. Frequency domain methods are appropriate for the images which are based on frequency mechanisms and it works on the orthogonal conversion of the image rather than the image itself.

2. Image restoration

Restoring the clear image from the degraded or corrupted image is providing by the technique called image restoration. Corrupted/Blur pictures are due to noisy, blur images or camera misfocus. Blurring occurs due to creation of bandwidth reduction of an perfect image caused by imperfect image formation process. Thus the pictures will be restored into original quality by reducing the physical degradation.

Degradation model



1 Fig. 5 Image Restoration Method

3.Image compression

Image compression is a type of data compression useful to digital images, to reduce their cost for storage or transmission. Algorithms may take benefit of visual perception and the statistical properties of image data to provide greater results compared with generic data compression methods which are used for other digital data.[1]

Two types of compression

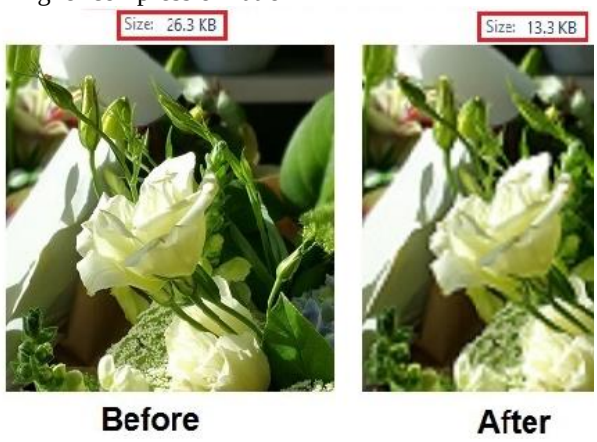
1. Lossless
2. Lossy

1.Lossless Compression: In image compression, there is no damage in information regarding image, during compression of a text file or program can be compressed without any faults and the application contains images stored in medical repository, text file compression, and technical drawings.

- No loss of information
- Extracting original data from compressed image.
- Lower compression ratio

2.Lossy Compression: Compression techniques that involves the loss of information included in used at low bit rates, and used in application streaming media and internet telephony.

- Loss of information.
- Perceptual loss of information reduced (controlled)
- Higher compression ratio



4. Image Segmentation

Image segmentation is a commonly used technique in digital image processing and study to partition an image into multiple parts or regions, often based on the characteristics of the pixels in the image. Image segmentation might involve separating foreground from background, or clustering regions of pixels based on similarities in color or shape.

Different methods of image segmentation

1. Threshold
2. Color based
3. Transform method
4. Texture method
5. Clustering

5.Image Recognition

Image recognition is the process of classifying and detecting an object or a feature in a digital image or video. This concept is used in numerous applications like systems for factory automation, toll booth monitoring, and security surveillance. Image recognition technique includes in recognizing/ identifying and detecting features such as objects in video or images. The recognition mechanism, images from the database are related with the current image, if the match is found then further execution of process will be carried out in real time application. It helps in verification and authorization process.

Method in image recognition

1. Pattern recognition-recognize several patterns of pixels in image.
2. Face recognition-focuses on detecting face in image
3. Optical character recognition- detects **text** and read it.

Fig. Face Recognition

6.Image Smoothing

Smoothing is often to reduce noise within an image. Image Smoothing is a key technology of image enhancement which can remove noise in image. So it is a necessary functional module in various image processing software. Image smoothing is a technique of improving the quality of images. . Image may contain noisy data such as, blur, speckles, stains, dots using this smoothing technique that acts as filter to remove the noisy data. It works Founded on the low pass filter, which helps in decreasing the great difference between pixel values by averaging nearby pixel value.

Smoothing operations

1. Linear filter
2. Non-Linear filter

Conclusion

This paper presents a various types of techniques of image processing such as image restoration, image enhancement, image recognition and image segmentation, image restoration. Image processing is used to enhance the quality of the picture that is taken from various resources. This paper discuss various image processing methods like as image representation, segmentation, compression, acquisition, image enhancement etc. These techniques are used in numerous areas. The method that we are choosing depends upon the application area.

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Honeypot: Concepts, Types and Working

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ABSTRACT*: In couple of decades number of attacks on IT association has increased. Among them small and medium sized organization's risk is higher because of lower safety architecture in their system. Attackers use SQL injection and XSS type of attacks to use the vulnerability of the system or the organization. A mechanism which is created to learn about the attackers' technique of attack and model and also used to get useful information about the intrusive action is Honeypot. Honeypots can be classified according to the level of communication as low-interaction, medium-interaction, high interaction and the purposed for which it is used as research honeypot and production honeypot. full study about the types of honeypot is included in this paper.*

I. INTRODUCTION

Attacks on websites and databases are growing day by day speedily. Among all of them sophisticated attacks are being increased radically, which affect small and medium sized company also. There are few features of these sophisticated attacks which involve high skilled attacker, also information about the target etc. So there must be some system to detect those attacks on the databases. To use honeypot for these systems special care should be given like after applying honeypot the system must look realistic and is capable for generate logs for all suspicious entries. From the basis on this idea we have formed this architecture which is useful to detect attacks and also generate logs for all entries in the database, from which we can find if there is any suspicious entry is occurred with wrong purpose.[1] Though hardware based honeypots are very costly and complex to install for medium and small sized companies, software based low-interaction honeypot are more suitable for that. According to the Lance Spritzer, Founder of Honeypot Technology, "A honeypot is an information system resources whose value lies in illegal of illicit use of that resources".[2] A honeypot can detect the behavior of the attacker or the intrusion information to observe and record the details of the attacker and create a log of malicious entries and examine level, purpose, tools and method used by the attacker so that proof can be obtained and further actions can be taken. [3] Honeypot technology and traditional security system combined can construct an active network security protection system.[4]

II . WHAT IS HONEYPOT?

A Honey pot is a computer system that is exactly set up to attract and "trap" people who attempt to enter other computer systems (This includes the hacker, cracker).It contains some interesting data or sometimes it behaves like a real operating system to the attacker to be searched or attacked. It is used as decoy. The intruder is intended to detect the Honeypot and try to breakdown into it. The purpose of a Honeypot is to detect and learn from attacks and usage that info to improve security. A network administrator gets information about the current threats on his network. Honeypot can be used to examine danger of the operating system or network. Also it can be used to observe activities of an individual which gained access to the Honeypot. Honeypots are a single tool to learn about the tactics of hackers.

III. HONEYPOT CLASSIFICATION

A. Based on level of interaction

It's classified into three types on the level of interaction:

1. Low-interaction honeypot
2. High-interaction honeypot
3. Medium-interaction honeypot

1)Low-Interaction Honeypot:

This type has limited level of communication with the external system. There is no operation system for attacker to interact with, but they implementer get to attract or detect attackers by using software to imitate features of a particular operating system and net services on a host operation system. Low-interactive honeypots are a safer and simple way to gather information.

Example-FTP

2)High-Interaction Honeypot

This is the most advanced honeypot.[7] This type of honeypot have very higher level of interaction with the invasive system. It give more sensible experience to the attackers and gathers more information about

intended attacks; this also involves very high risk of capturing of whole honeypot. High-interaction honeypot are most complex and time consuming to design and manage. High interactive honeypots are more useful in the cases, where we want to capture the details of vulnerabilities or exploits that are not yet known to the outside world. This honeypots are best in the case of "0-Day attacks". Ex: Honeynets: which are typically use for research purpose.[2][5][7]

3)Medium-Interaction Honeypot:

These are also known as mixed-interactive honeypots.[6] Medium-interaction honeypots are somewhat more sophisticated than low-interaction honeypots, but are less sophisticated than high-interaction honeypots. It provides the attacker with a batter illusion of the operation system so that more complex attacks can be logged and analyzed. Ex: Honeytrap: it dynamically creates port listeners based on TCP connection efforts extracted from a network interface stream, which agrees the handling of some unidentified attacks. [7]

Based on the purpose Honeypots can be classified based on the purpose as Research honeypot and Production honeypot.

- **Research Honeypot**:

Research honeypots are basically used for learning new method and tools of attacks.[8] Research honeypots are used to meet intelligence on the general threats organization may face, which gives the association a better protection against those threats. Its main goal is to gain info about the way in which the attacker progress and performs outline of attacks. Research honeypots are complex to make, deploy and manage. They are basically used by organizations like university, governments, the military and intelligence systems to learn more about threats. Research honeypots provide a strong platform to learning cyber-threats and forensic skills. [7]

- **Production Honeypot**:

Production honeypots are just aimed to protect the network.[8] Production honeypots are easy to build and deploy, as they require very less functionalities. They protect the system by detect attacks and giving alerts to administrator. It is typically used within an group environment to protect the organization. [7][8]

IV. SYSTEM DESIGN OHONEYPOT

A.System Architecture:

Overall system design of honeypot architecture is shown in Fig-1. Whole network is firstly protected by a firewall, then by a router and compartmented data layers are separated from network inside the organization and separate customers' or operations' network. Organization network is then protected by a mechanism called as honeynet, which is a network of computers contribution in honeypot architecture. For additional security and detection IDS is implemented in the system. Monitoring control system supports to manage the logs created by the honeynet and also screens all the incoming entries in the network.

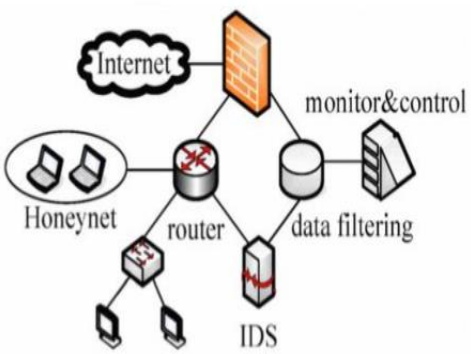

Figure 1: system design of the honeypot architecture.

A.Working

Honeypot is a system to collect intelligence. Honeypots are usually located behind the firewall. Honeypot mostly used to simulate a variety of services and holes, to induce the occurrence of various attacks, attack data. When an intruder goes to enter the system with a fake identity, the administrator system will be notified. According to (OWASP) Open Web Application Security Project some top attacks recorded were SQL injection and XSS.[9] When somebody tries to enter the system, a log is produced about all the entries. Even though the intruder succeed in entering the system and captures the data from the record, we can fool them by providing fake data, this is done by honeypot, but intruder will not be aware bout this fake information.. At the similar time the logs will be created, so that all the data about attacker are recorded like system IP, attack type, attack pattern, available footprints etc., and attack process for the evidence which can be used for further actions.

V. ADVANTAGES OF HONEYPOT

Honeypots have several distinct advantages [3][4]when compared to the current most commonly used security mechanisms.

• **Small Data Sets** - Honeypots one pay attention to the traffic that comes to them. They are not concerned with an overload of network traffic or defining whether packets are real or not. Therefore they only collect small quantities of information – there are no huge data logs or thousands of alerts a day. The data set can be small, but the information is of high value.

• **Minimal Resources** – Since they only capture bad action, they require minimal resources. A low end system may be used as a honeypot.

• **Simplicity** – They are very simple and flexible .There are no difficult algorithms to develop, state tables or autographs to update and maintain. .

• **Discovery of new tools and strategies** – Honeypots capture anything that is thrown at them, which can include tools and tactics not used before.
.

VI. DISADVANTAGES OF HONEYPOT

Honeypots have several risks and drawbacks. Although few in number, it is these drawbacks [3][4] that prevent honeypots from totally replacing your current security mechanisms.

• **Limited Vision** – The only activity followed and captured by a honeypot is when the attacker directly interacts with them. Attacks against other parts of the system will not be captured if the honeypot is threatened also.

• **Discovery and Fingerprinting** – Fingerprinting is when an attacker can identify the true identity of a honeypot because it has certain expected characteristics or performances. A simple error such as a misspelled word in service emulation can act as a signature for a honeypot.

• **High level of Risk**- In case of High level interaction honeypots there is huge risk as it provides real operating system to be probed or attacked.

VII. FUTURE WORK

In this paper I have provided a brief overview of what honeypots are, and what they are used for. I have discussed the different types of honeypots such as manufacture honeypots, research honeypots, low level interaction honeypot, medium level interaction honeypot, and high level interaction honeypot. For illustration, the level of interaction of your honeypot depends on what you want to use it for. Honeypots are a relatively new technology that is becoming increasingly popular, and will become even more so as commercial solutions develop available that are easy to use and manage because they can be used to collect information on attackers and other threats, I believe they can prove a useful tool in digital forensics investigations. Honeypot frameworks available till now are not up-to-date and have not been developed completely. So the framework can be developed up to the middle level interaction honeypot.

VIII. CONCLUSION

The paper provides a brief overview of honeypot and their usage. Different types of honeypot such as production honeypot, research honeypot, low level Interaction honeypot, medium level Interaction honeypot and high level Interaction honeypots are discussed with examples. The honeypots is relatively a new technology and has good scope for future work. Honeypot can be used with other well recognized security tools such as IDS or Firewalls to make them more effective.

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Effect of Decision on Emotions

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Abstract:
The knowledge of emotion has a powerful effect on daily-life decision making. In emotional viewpoint,work has taken a more complete view, identifying positives as well as negative effects of emotions in the context of making decisions. Advancements in technology, particularly in studying how our brains work, have made it possible to expand our understanding of how emotions influence our judgment and choice selection.

Keywords:
affect, mood, appraisal, tendency, judgment, choice, behavioral ,economics, influence.

Introduction:
Although emotions may influence decisions through multiple mechanisms,
considerable evidence reveals that effects occur via changes in (1) content of thought, (2) depth of thought, and (3) content of implicit goals three mechanisms summarized within the Appraisal Tendency Framework. Making a decision always requires cognitive resources and self-control. However, when cognitive capacity is weak, which we have labeled "cognition reduction," emotion may over whom reason and become more sailent in our decision making.

How are decisions effected by emotion?
Emotions are created when the brain interprets what's going on around us through our memories, thoughts, and beliefs. This triggers how we feel, and behave. All our decisions are influenced by this process in some way.
Different emotions effect decisions in different ways. If you're feeling sad, you might be more willing to settle for things that aren't in your favor, such as not putting yourself forward for promotion, or remaining in an unhealthy relationship. But sadness can also make you more generous — research shows that unhappy people are more likely to be in favor of increasing benefits to welfare recipients than angry people, who are lacking in empathy.
Emotions can effect not just the nature of the decision, but the speed at which you make it. Anger can lead to impatience, and rash decision-making. If you're excited, you might make quick decisions without considering the implications, as you surf the wave of confidence, and optimism about the future. While if you feel afraid, your decisions may be clouded by uncertainty, and caution, and it might take you longer to choose.
What this means is that your gut feeling plays a huge part in our decision making process, but at times may be steering you wrong — it might lead to poor judgment, unconscious bias and recklessness, or risk-aversion. But are there ever occasions when we *should* pay attention to our gut instinct?
A visceral response to a situation could actually be a survival mechanism – the flash of fear felt by early humans who came face to face with a dangerous animal motivated them to RUN NOW! They wouldn't have survived if they stopped to think.
Similarly, if you get a 'bad feeling' in the pit of your stomach because of a particular situation or person, it could be your body's way of telling you it senses danger, based on your past experiences, and beliefs.
Of course, this reaction might be completely unfounded, but it might also serve to protect you from danger, or prevent you repeating past mistakes.
This points to one of the big advantages of instinctive decision-making – it's quick. If you're in a life, or death situation, you don't want to waste time working through the pros and cons.This is true at the other end of the spectrum too, when faced with a choice about something completely insignificant. We see this at play in stories of people putting their own lives at risk to save someone else, or when we choose how to break difficult news to a friend.
If you have a regular mindfulness, or journaling practice, you probably know yourself well, and enjoy a high level of self-awareness. You might be better off listening to your intuition when it comes to considering whether a romantic partner is right for you, or whether you should change careers.
Being in emotional balance, and knowing yourself at this deeper level means you can trust your instincts.
How can emotional intelligence help make good decisions?
Both emotion, and logic have helping us to make positive decisions. If we understand where our

emotions come from, and start to notice how they effect our thinking and behavior, we can practice managing our response, and learn to make better choices.

You can find out more about how to develop your emotional awareness in our guide to emotional intelligence. You'll soon feel confident in knowing when to listen to your emotions, and when to tune them out.

6 Steps for Making Ethical Decisions

Sometimes, you may feel that an action or behavior is wrong. At other times, you may observe or even know that a behavior is illegal. sometimes you may feel about a that evidence and a decision. These types of questions are ethical or moral implications.

This step process you help you make a thoughtful and responsible decision.

Create the facts in a situation

Make a decision the situation involves legal or ethical issues

Identify your options and possible situations

Evaluate your options

Choose the best option

Implement your decision

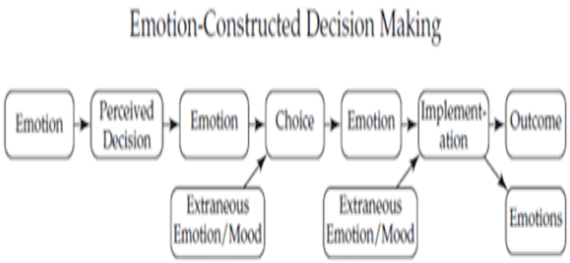

Fig:role of effect decision making

Decision making solutions must work to extend the positive benefits of both rational and emotional thought processes while providing approaches to attenuate and learn from mistakes. The flexible decision making model used by Decision Innovation enables improvements in decision making as we learn more about how our mind works.

Conclusion:

Emotion, decision-making, and social behavior that have been carefully built up and tested in neuro science over the last few decades could provide an additional assessment of social theories. This theory are assumptions and hypotheses about human recognition, emotion, and behavior that were incompatible with these insights. Decision making relies on the interaction of emotion and recognition and that whether emotion or recognition makes a more prominent role depends on specific decision contexts.

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A VIEW OF ARTIFICIAL INTELIGENCE IN NEURAL NETWORK

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ABSTRACT:-Artificial Neural Network is the main branch of Artificial intelligence and has been accepted as a new computing technology in computer science fields. This paper study Of Artificial inteligence and focus on new application Which usage Artificial Neural Network and Artificial intelligence(AI). A system of interconnected neurons forms neural networks which are of two types: a Biological Neural Network (interconnected nerve cells), and an Artificial Neural Network (ANNs)., it is proposed a schema of bionic neural network model based management system (ANN MS), pointed that the system component level (model) development of practical value, and discuss the basic uses of system: modeling classification, model mining, the detection and diagnoses.

KEYWORD:
Artificial intelligence, Neural Networks, Machine learning, Soft computing.

WHAT ARE ARTIFICIAL NEURAL NETWORKS USED FOR?

Artificial Neural Networks are used for a variety of tasks, a popular use is for classification. You can gather datasets of images for example of different breeds of dogs and then sequence a neural network on the images, then if you supply a new image of a dog it will give a statistical score on how closely the new image matches the model and then will output what breed of dog the image is. Neural Networks are also used in Self Driving cars, Character Recognition, Image Compression, Stock Market Prediction, and lots of other interesting applications.

STRUCTURE OF ARTIFICIAL NEURAL NETWORK:-

Generally, the working of a human brain by making the right connections is the idea behind ANNs. That was limited to use of silicon and wires as living neurons and dendrites.

Here, neurons, part of human brain. That was composed of 86 billion nerve cells. Also, connected to other thousands of cells by Axons. Although, there are various inputs from sensory organs. That was accepted by dendrites. As a result, it creates electric impulses. it is used to travel through the Artificial neural network. Therefore, to handle the different topics, neuron send a message to another neuron.

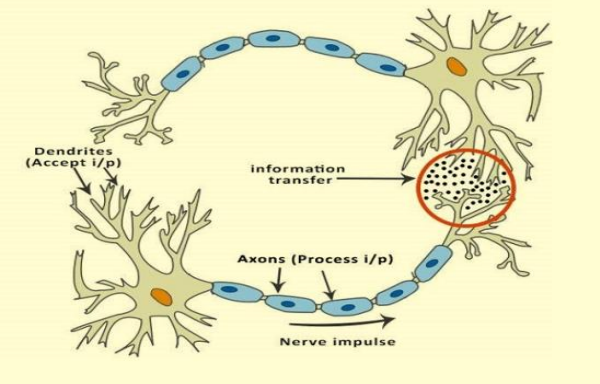
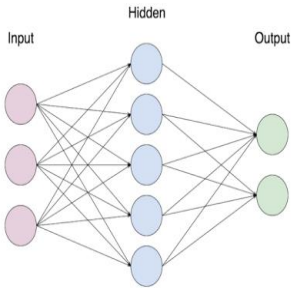


Fig:-Structure Of Neural Network

HOW DOES A NEURAL NETWORK LEARN



The simple example of a neural network

Artificial Neural Networks ability to study so quickly is what makes them so powerful and useful for a variety of tasks. But how do they learn? Information flows through a neural network in two different ways. When the model is learning (being trained) or operating normally (after being trained either being used or tested), patterns of information from the dataset are being fed into the network via the input neurons, which trigger the layers of hidden neurons, and these in turn arrive at the output neurons. This is called a feed forward network. Not all neurons "fire" all the time. Each neuron receives inputs from the

neurons to its left, and the inputs are multiplied by the weights of the connections they travel along. Every neuron adds up all the inputs it receives in this way and (this is the simplest neural network) if the sum is more than a certain threshold value, the neuron "fires" and triggers the neurons it's connected to (the neurons on its right).

For an artificial neural network to learn, it has to learn what it has done wrong and is doing right, this is called feedback. Feedback is how we learn what is wrong and right and this is also what an artificial neural network needs for it to learn. This is where you start to see similarities to the human brain. If you are learning to play a game like tennis you learn that if you hit the ball too hard it will go out of the court and you will lose the point, or if you don't hit the ball hard enough it won't go over the net but if you hit it perfectly it will go onto the other side in the court and if could win a point, this is a classic example of feedback where you lose the point or potentially gain a point. This is how we learn what we are doing correct or wrong and this is what a neural network needs to learn.

Neural networks learn things in exactly the same way as the brain, typically by a feedback process called back-propagation (this is sometimes shortened to "backprop"). This is where you compare the output of the network with the output it was meant to produce, and using the difference between the outputs to modify the weights of the connections between the neurons in the network, working from the output units through the hidden neurons to the input neurons going backward. Over time, back-propagation causes the network to learn by making the gap between the output and the intended output smaller to the point where the two exactly match, so the neural network learns the correct output.

NEED FOR NEURAL NETWORKS

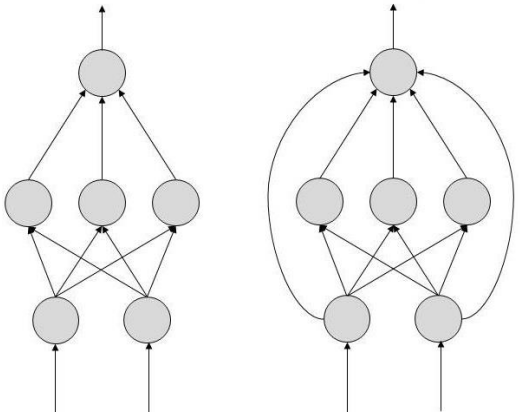
Neural networks have a remarkable ability to retrieve meaningful data from imprecise data, that is used in detecting trends and extract patterns which are difficult to understand either by computer or humans. A train NN can be made an "expert" in information that has been given to analyze and can be used for provide projections.

TYPES OF ARTIFICIAL NEURAL NETWORKS

There are two Artificial Neural Network topologies – **Feed Forward** and **Feedback.**

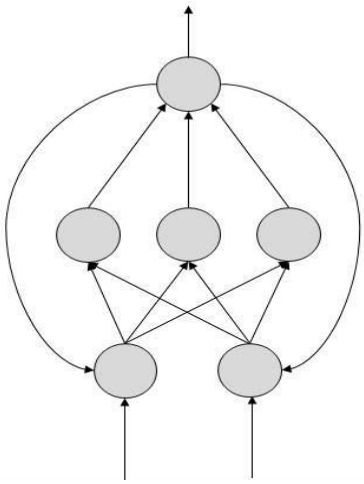
FEEDFORWARD ANN

In this ANN, the information flow is unidirectional. A unit send information to other unit from which it does not receive any information. There are no feedback loops. They are used in pattern generation/recognition/classification. They have fixed inputs and outputs.



FEEDBACK ANN

Here, feedback loops are allowed. They are used in content addressable memories.



WORKING OF ANNS

topologyfigure shown, each arrow represents a connection between two neurons and indicates the pathway for the flow of information. every connection has a weight, an integer number that controls the signal between the two neurons.

If the network creates a "good or desired" output, there is no need to adjust the weights.if the network creates a "poor or undesired" output or an error, then the system changes the weights in order to increase subsequent results.

STRATEGIES OF MACHINE LEARNING IN ANN

Artificial neural networks have the ability to study but they should be qualified. There are many learning strategies namely:

Supervised Learning : It involves a scholar. For example, the scholar gives examples while preaching for better understanding of the moral.ANN implements pattern recognition where it starts guessing while recognizing. Then, the train data patterns provide the ANN with the answers.

Unsupervised Learning : It come to action when there is no sample data set with known answers. Searching hidden pattern is one such example. The idea of clustering involves dividing the elements into sets of groups, is based unknown pattern that are carried out using existing data sets.

Reinforcement Learning: It is a strategy build based on observation. The ANN takes decision by considering its environment. If the observations are supposed to be negative, the network adjusts its data to make a different decision for next time.

APPLICATIONS OF ARTIFICIAL NEURAL NETWORKS (ANN)

identification of Image was the first area where neural networks were successfully applied, but the technology expanded to many areas such as,

1)Natural language processing, translation and language generation.
2)Drug discovery and development.
3)Stock market prediction.
4)Delivery driver route planning and optimization.
5)Chatbots.

LIMITATIONS OF ARTIFICIAL NEURAL NETWORKS (ANN)

1) ANN is not a every day life general purpose problem solver.
2) There is no structure methodology available in ANN.
3) There is no single standardized example for ANN development.
4) The Output Quality of an ANN may be changeable.
5) Many ANN Systems does not explain how they solve problems.
6) Black box Nature
7) Greater computational burden.
8) Proneness to over fitting.
9) Empirical nature of model development.

ADVANTAGES OF NEURAL NETWORKS

1)Storing information on the entire network: Information such as in traditional programming is stored on the entire network, not on a database. The disappearance of a few pieces of information in one place does not restrict the network from functioning.
2)Gradual corruption: A network slows over time and undergoes relative degradation. The network problem does not immediately corrode.
3)Ability to train machine: Artificial neural networks learn events and make decisions by commenting on similar events.
4) Parallel processing ability: Artificial neural networks have numerical strength that can perform more than one job at the same time.

DISADVANTAGES OF ARTIFICIAL NEURAL NETWORKS (ANN)

1)Hardware dependence: Artificial neural networks require processors with parallel processing power, by their structure. For the reason, the realization of the equipment is dependent.
2)Unexplained functioning of the network: This is the most important problem of ANN. When ANN gives a probing solution, it does not give a clue as to why and how. This reduces trust in the network.
3)Assurance of proper network structure: There is no specific rule for determining the structure of artificial neural networks. The proper network structure is achieved through experience and trial and error.
4)The duration of the network is unidentified: The network is reduced to a certain value of the error on the sample means that the training has been completed. This value does not give us optimum results

CONCLUSION

Neural network is a rich area of research which has the potential to capture perhaps a greater range of the operation of the brain than with only computational models. It should be noted that neural network do not perform magic, but can produce very exciting results if used intelligently, as this paper has attempted to explain some of its benefits, and the kind of task that a neural network excels at in computation.

Artificial neural networks have application in many regions as medical, business, agriculture, for prediction purpose, classification purpose and many others areas. By using artificial neural networks is that the results are more perfect, computable and errorless. Numbers of experiments are there which involves training to ANN, implementation, interpreting the neural networks and collecting of relevant data. Artificial Neural Networks can use treatment and prevent from lung cancer disease and also useful in other industrial area. Performance of ANN can be developed by using appropriate optimization technique as Ant colony Optimization.

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Computer Assisted learning in education: A Outline

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ABSTRACT: ***Computer assisted learning is a our future. In computer assisted learning several educational problems to be solve victimization of different tools to interactive and improve the learning methods functionally. Computer assisted learning are often utilized directly and indirectly all fields of education, ranging from TV/DVD, interactive boards, play-learn program for preschool youngsters. CAL is developed by combining knowledge from all fields of education/learning, human computer interaction (HCI) and psychological feature.***

Classical education is replaced by virtual education, on-line class room; distance education and exams are conducted by online for rapid analysis. Use of visual content and software technology make the education more additional and interactive. Computer assisted learning as the tutoring, learning, and interacting method expedited through the employment of computers. The main edge/advantage that CAL has over education strategies is additional interaction. Now use of CAL learning will attract the student rapidly.

Introduction

CAL has often the use of the computer base application and technology for many circumstances. In early days CAL are used to replace traditional method instead of software program or series of program. Computer Assisted learning can be defines in various subject like Mathematics, Geography, History, Commerce and Science through software program, CD/DVD, power point presentation, Packages etc. It can be include all type of computer Enhance learning. "Computer Assisted Learning or Computer Aided Learning is defined as learning

through computers with subject wise learning packages/materials" ....Mifflin.

Types of Tools Used in CAL

Multiple Choice Questions: Mainly used for computer based online tests, this exercise is used to assess a student's understanding and learning capabilities they have been taught. It is used for computer base test.

Computer base worksheet: it is used for understanding of whole lesson to ask some question that student answer these question.

Visual learning: using of some computer base software such as YouTube lectures by animation, CD/DVD learning kits, power point presentation, LCD projector, 2D and 3D video etc. Visual learning makes it much more real to the learner, so they remember it much longer. Student can be seeing fully concentration of videos rather than book reading.

Fill in the blanks: the student is required to type text in blanks where as some of the words are missing and to provide suitable words to solve the exercise. This type of test can be easily done within a few minutes and can be created with inexpensive software.

Crossword puzzles: using of cross word puzzle student improves their IQ for better learning and also remembers the word easily.

Games: - Educational games are more interact and make interest in learning. Using of the games more and more student attract in leaning habits.

Google e content: using of Google class room students search the e-content lectures that help in their difficult situations and better understand

Listening: - Computer replace by tape recorders. Computer system attach with speakers or headphones. Student attentively listen the recording playing on computer.

Virtual class Rooms: - Some mega cities of institution create virtual class room for better learning

with full concentration of students. In virtual class room some expertise person lectures can be organized to improve the learning power of student.

Internet search: Student can search their topic by using their own language. On using internet various content can be search using of search engines.

Simulation: Simulation offers flexibility and control. In simulation, the particular feature of the computer as a rapid calculating and data processing machine is used to its best advantage.

Advantages of CAL

CAL provides several advantages to the education sector.

Self-Paced/ Self-Directed Learning: Since the students have control over the CAL process, they can be decide on their pace of learning. Students will study as speedly or as slowly as they like through a course

Improved Computer Skill: student interacting with computers, students who are not computer-literate will be compelled to develop/improve their computer skills and it also gives them a sense of collaboration when once or a lot of students have to share a computer.

Visualization: A student becomes more alert when a computer-based learning/test is going on. Students are motivated visually by multimedia materials and listening is supported by seeing. It can be boosts students' natural way of learning.

Learning Efficiency: With CAL, students are better able to pick up ideas or skills faster and with less eff ort and also retain what they have learned longer.

Stimulation: Humans are multi-sensory beings as we are able to receive and proceed information. "According to Fletcher (1990), people remember 20% of what they hear, 40% of what they have seen and heard and 75% of what they see, hear and do". Computers encourage learning as they promote enthusiasm and supply stimulating surrounding.

Crossword: - Using cross word it improves their vocabulary and learning capacity with fun.

Virtual class room: Using of the virtual class room student can learn without teacher and can improve their learning capability.

Disadvantages of CAL

CAL cannot full fill the student's expectation. The objective and teaching can be decided by author and teacher may be differing.

CAL is expensive other than traditional or ordinary learning.

Computer learning are based on virtual reality so some science subject like Chemistry, biology , physics student can miss hand experiment when they get on laboratory.

CAL require highly expertise teacher but efficient and expertise teacher are rare in our country.

Conclusion:-

CAL is efficient and more power full in now day as the fast growth of educational competition. Use of CAL student can easily understood the learning and it can remember long time. The use of audio visual facilities it can better under stood than traditional learning. Student can also ware about computer literacy by using of computer tools. Using of kindergarten software and games children can easily remember and understood the learning than traditional learning.

Most of country can use CAL in their educational institute such as EDUCOMP, kindergarten, software packages, CD/DVD for improve student ability in study.

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Segmentation of Ear Images using Thresholding Techniques

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Abstract

Image Segmentation is very important part of Image Processing. The first step in Image Analysis and Pattern Recognition is Image Segmentation. The process of Image Segmentation refers to the partition of an image into different regions to retrieve information about the objects in the image based on the homogeneity or discontinuity of certain characteristics like color, intensity or texture. Thresholding is the simplest method of segmentation image. Generally Thresholding can be used to create binary images from a grayscale image. The pixels are categorized depending on their intensity value. Image binarization is the process which subdivide the pixel values into two groups, black as background and white as foreground. Thresholding can be divided into global thresholding and local thresholding. This work present efficient implementation of Local Adaptive Thresholding and global thresholding by using Otsu's method and give details comparison between both techniques using correlation coefficient.

Keywords: Adaptive thresholding, Otsu's global thresholding, correlation coefficient

1. Introduction

Image thresholding is a effective, way of subdividing an image into a foreground and background. This image analysis technique is a type of image segmentation that isolates objects by converting grayscale images into binary images The gray levels of pixels residing to the object are entirely different from the gray levels of the pixels residing to the background, in many applications of image processing. Thresholding becomes then categorized a simple but effective tool to separate those foreground objects from the background. We can subdivide the pixels in the image into two major 3) calculate the average gray level values mean1 and mean2 for the pixels in regions G11 and G22.

groups, according to their gray-level. These gray-levels may serve as "locators" to differentiate between background and objects is considering as foreground in the image [1]

2. Thresholding

In image processing, segmentation is often the first step to pre-process images to extract objects of interest for further analysis. Thresholding is very important technique for image segmentation. One discernible way to extract the objects from the background is to select a threshold T that separate these modes. Then any image point(x1,y1) at which f(x1,y1)>T is called an object (or foreground) point; otherwise the point is called background point. The binary image should encompass all of the fundamental information about the position and shape of the objects of interest (foreground). The benefit of obtaining first a binary image is that it decreases the complexity of the data and simplifies the process of recognition and classification. The most common way to change a gray level image to a binary image is to select a single threshold value (T). Then all the gray level values below this T will be classified as black (0), and those above T will be white (1).[3]. The choice of these methods can be manual or automatic i.e. can be based on proper knowledge or information of image features.

2.1 Global Thresholding

In the global threholding, the intensity value of the input image should have two peak values which correspond to the signals from surroundings and objects. It tells the degree of intensity separation between two peaks in an image[5]. Global thresholding, using an appropriate threshold T:

$g(x1,y1) = 1$, if $f(x1, y1) > T$

0, if $f(x1, y1) \leq T$

Basic Global Thresholding includes[6]:

1) choose an first estimation for T

2) fragment the image using T. This will construct two groups of pixels. G11 consisting of all pixels with gray level values >T and G22 consisting of pixels with values ≤T.

4) calculate a new threshold value T= (1/2) (mean1 +mean2)

5) Repeat steps 2 through 4 until dissimilarity in T in successive iterations is smaller than a predefined parameter T.

2.2 Local Thresholding

If the threshold depends on local characteristics of some image regions (e.g., the local average gray value), the thresholding is called local. If the local thresholds are selected separately for each pixel (or groups of pixels), the thresholding is called dynamic or adaptive. In which the threshold value varies over the image as a function of local image properties, can produce the solution in these cases.

1. Image f is split into subimages .
2. A threshold is determined independently in each subimage
3. If a threshold cannot be determined in some subimage, it can be interpolated from thresholds determined in neighboring subimages.
4. Each subimage is then get with respect to its local threshold.

Sr.No.	Original Image	Local (Adaptive) Thresholding	Global Thresholding using Otsu's method	Correlation between Global thresholding image and local thresholding image
1				0.31
2				0.29
3				0.3
4				0.15
5				0.3
6				0.36
7				0.09
8				0.23
9				0.16
10				0.31

Table 1 Result of Images applying Local and Global thresholding with correlation coefficient

3. Analysis

In this work we had took 10 images . Apply the Local adaptive thresholding and Global thresholding using Otsu's method. Then we calculate the correlation between images. The results are shown in above table. The problem with thresholding is that we consider only the intensity, not any relationships between the pixels. There is no convince that the pixels identified by the thresholding process are contiguous. We can easily encompass additional pixels that aren't part of the desired region, and we can just as easily miss isolated pixels within the region (especially near the boundaries of the region). The first problem is when we use thresholding, we typically have to play with it, sometimes losing too much of the region and sometimes getting too many additional background pixels and the second problem with global thresholding is that changes in illumination across the scene may cause some parts to be brighter and some parts darkened in ways that have nothing to do with the objects in the image. We can deal, at least in part, with such uneven radiance by determining thresholds locally. [6]

4. Conclusion & future work

In this paper describes local Adaptive Threshold and Global Threshold using Otsu's method. In this paper we have compare those two thresholding techniques. From the results shown in above table we conclude that result of local adaptive thresholding is better than Global Threshold using Otsu's method. We will take more images in future and the result will forward for classification.

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Recommender System Using Data Mining Techniques

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Abstract:
Extracting sequential patterns plays a vital role in recommender systems. In this paper, researcher introduced an idea of collaborative research using sequential pattern mining.The main objectives of this research paper is to develop web based application for college library that provide access for e-contents (e-books, e-journals, e-magazines etc.) for the students and teachers, to develop a recommender system that recommends relevant information to the students and teachers while searching through web contents. Finally, Obtain clusters of students and teachers who follow the same navigational patterns for recommending collaborative research work.

Keywords : Data Mining, Sequence Patterns, clustering

1. Introduction:

Data mining is a process of discovering useful patterns or knowledge from data sources (databases, texts, images, the Web, etc.). There are many data mining task. Some of the common ones are:

1.1 **Supervised learning (or Classification)**

Classification is to build a model that can classify a class of objects so as to predict the classification or missing attribute value of future objects (whose class may not be known). It includes two stage processes. In the first stage, using training data set, a model is constructed. The model is to describe the characteristics of a set of data classes or concepts. This means that data classes or concepts are predefined, this stage is also known as supervised learning (i.e., which class the training sample belongs to is provided). In the second stage, the model is used to predict the classes of future objects or data.

1.2 Unsupervised learning (or Clustering) In clustering, objects are grouped together based on their similarities. Similarities between objects are defined by similarity functions, usually similarities are quantitatively specified as distance or other measures by corresponding domain experts.

1.3 Association rule mining

To find all co-occurrence relationship among data items is called association rule mining. Two types of association can be found using association rule mining: (i) intra-transaction association (association among items within same transaction) [1], [2].and (ii) inter-transaction (association among items in different transactions) [3], [4], [5], [6], [7]. To analyze web navigational patterns, inter-transaction association is used. Inter-transaction association means sequential pattern mining. For example, a subsequence such as first visit to the content of C language, then C++ language, and then Java language if it occurs frequently in web navigational history database, is a frequent sequence pattern.

Sequential Data Mining was first introduced by Rakesh Agrawal and Ramakrishna Srikant in 1995. Sequential pattern mining is to detect patterns in a database comprised of sequences of item sets. The context of market basket analysis was firstly introduced in this paper. It aimed to retrieve frequent patterns in the sequence of product purchased by customers through time order transaction. Sequential pattern mining are used in Telecommunication, Network detection, DNA research, Web log analysis, customer purchase behavior analysis, medical record analysis etc. applications.

Sequential pattern have been used to developed recommender system based on previously observed patterns, help in making predictions, detect events and making decisions. The development of a recommender system is one of the applications of

sequential pattern mining. The knowledge of successive web navigational patterns in web documents can be identified by using several pattern mining algorithms. The extraction of such sequential patterns can be used effectively to recommend the relevant information to students/teachers. By clustering of students/teachers with similar web navigational patterns can be useful to recommend for collaborative research work. This paper is organized as follows: Section-2 present literature review. Section-3 presents methodology used for experiment, Section-4 concludes the paper.

2. Literature review:

Agrawal and Srikant [3] introduced apriori based GSP algorithm to discover sequential pattern, a sequence which occurs frequently in a sequence database. The algorithms [3, 4, 5, 6] discover sequential patterns, demonstrate inter-transaction association rules.

Pie et al. [7] introduced use of constraints to discover sequential patterns.

Joshi et al. [22] proposed an algorithm for the estimation of a time period of 2-sequences. This is a one-pass algorithm. This algorithm estimate a time period between sequential events and generates a list of sensible patterns that results into inter-transaction association rule. This algorithm avoids the use of pre-specified window.

Huang et al. [10] proposed a sequential pattern mining based collaborative system. This system predict the customer's time variant buying pattern in e-commerce environment.

3. Methodology:

This section presents all about propose experimental details in 2 subsections namely dataset and algorithms.

3.1 Dataset

For experiment, a dataset will be created by maintaining web server log file by developing web based application. Translate web server log file into a database by preprocessing techniques of data mining.

3.2 Algorithm:

The following are the basic steps to implement an approach:

1. At first stage, web based application will develop that facilitates the users to visit e-content, e-books, e-magazines available in library.
2. Obtain sequential navigation sequences where user sequences is a time order set of visits by developing an algorithm by estimating a time period among a set of 2-sequence patterns [9].
3. Recommend relevant information to the user (student/teacher) from sequence database.
4. Data mining tool like WEKA can be use for clustering. Client/Server architecture can be well suited for these systems.

4. Conclusion:

Once user (student/teacher) visit to a particular e-content, the predicted recommendations will be provided by the propose approach using sequential database. Clustering of students and teachers who follow the same navigational patterns can be useful for recommending collaborative research work.

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ICT: The Best Tool in Teaching Language and Literature

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Abstract

Information Communication Technology includes the use of computers, laptops, mobiles, projectors, audio-video presentations, slides, documentaries etc. It is useful in teaching learning process. It expands the students' ability to acquire knowledge, enhance perception and facilitates competency of skills. Traditional way of teaching is now accompanied with innovative methods and ICT based teaching-learning process. Teachers use ICT in the classroom to exchange information, ideas, message and knowledge. ICT based teaching covers software materials such as Graphics, Models, objects, specimens, slides, Transparencies, audio and video tapes, over head projectors whose benefits and usefulness would reach the students by none other than an effective and efficient teacher. There are also interactive smart boards in the place of traditional chalk or white boards in the classroom. These flat screen monitors join the hands with the Universal knowledge. In coming days, even in the remotest parts of the country, computers and internet will be available for the teachers and students. The present paper will discuss the use of ICT based learning which would enhance Language competency and transforms the essence of literary genre in the effective way. It will elaborate in detail the various methods of ICT use in teaching Language and Literature.

Keywords: ICT, technology, smart boards, Language competency, essence of Literature

Introduction

ICT is a friendly tool in all walks of life. Especially, in teaching where there is dignity, respect, and novelty along with responsibility and expectations. Teaching is an art and it is possible only if the teacher is dedicated, knowledgeable passionate and the most important friendly user of ICT. It is used to help people communicate with each other across geographical boundaries and give unseen experience. To achieve the goal of teaching, the teacher must adopt effective teaching methods in education. The teacher has many options to choose from different teaching methods designed specifically for teaching and learning. ICT is an innovative way to design, deliver, facilitate and manage instruction for learners of all ages. It is the considered implementation of appropriate tools, techniques, or processes that facilitate the application of senses, memory and cognition to enhance teaching practices and improve learning outcomes. There are various types of technologies currently used in classrooms. They are:

Laptop and Tablets

Laptop is known as notebook. It is portable computer that you can take with you and use in different environment. With a laptop or tablet in the classroom, teachers are able to demonstrate a new lesson, present new material, illustrate how to use new programs, and show new websites, screening live poetry, drama or novel in an innovative form. It is useful in learning any new language to the students also literature based topics are easily grasped and builds up creative atmosphere in the classroom.

Smart phones

Smartphone are readily available for all. Smartphone are now almost integral to everyday modern life. They can be used to enhance the experience in the classroom by audio- video experience. Teacher can demonstrate various live examples with the use of Smartphone.

Smart board

Smart board provides touch control of computer applications. This enhances the experience

in the classroom by showing anything that can be on a computer screen. This not only aids in visual learning, but it is interactive so the students can draw, write or manipulate images on the interactive whiteboard.

Why to use ICT in classroom?

"Teachers' professional development depends on the use of ICT-supported learning through providing them with skills and competencies to use ICT for their professional learning and teaching. Also, other tools such as computer conferencing, curriculum-authoring tools and learning management systems are useful in promoting teachers' use of ICT with students with special needs". (Istenic Starcic and Bagon, 202). The response to the basic question is very interesting. It is easy to access the course material. Instructors can post the course material or important information on a course website, which means students, can study at a time and location they prefer and can obtain the study material very quickly. Secondly, students get motivation from the use of ICT. Computer-based instruction can give instant feedback to students and explain correct answers. Learning material can be used for long distance learning and are accessible to a wider audience. It makes the subjects easier to learn. Many different types of educational software are designed and developed to help children or teenagers to learn specific subjects. Examples include pre-school software, computer simulators, and graphics software. With proper structuring it can become easier to monitor and maintain student work while also quickly gauging modifications to the instruction necessary to enhance student learning.

Let's use ICT in the classroom teaching

"The introduction of word processors to classrooms has helped teachers and pupils to produce work that is of a high presentational quality and which is scaffolded by presentation templates, spellcheckers and grammar checkers. Computer-based class work can be accessed by students through a variety of different input devices". (Sheehy 57) When students are learning through technology, they are themselves looking for information on the Internet. They make their own decisions regarding the information i.e. whether it is relevant or irrelevant. They have control over how to use or present this information. Thus, one of the main benefits of using technology for classrooms is that unlike a teacher-led classroom, where students passively receive whatever information the teacher is providing, in tech savvy classrooms, students are active participants. It is observed that Internet is just a world passing around notes in a classroom. By using the Internet technology, obtaining information on all kinds of subjects has become very easy. A student sitting in his classroom can learn how people in a small village in Africa live life. Thus, Internet is a kind of library which is at the disposal of a student with just a click. A student can acquire in-depth knowledge on any subject using this vast resource. The importance of technology in the classroom can be gauged from the fact that it offers an experience to students similar to the working environment that one sees in offices. In technology savvy classrooms, a teacher acts as a facilitator who sets project goals for the students and provides them with the necessary resources and guidelines to reach those goals. The student himself makes decisions with regards to the design choices, the information he wants to use and display, the resources that he will use. Moreover, these days, students themselves are very tech savvy and may sometimes even know more than the teacher himself. So, there is a constant exchange of information between the students and the teachers. Such an environment prepares a student to work in business organizations in the future.

Researchers have shown that there is great importance of integrating technology in the classroom. When students are taught through slide shows or by showing films, it makes the lessons very easy and interesting for them. It helps in their learning, at the same time motivates them to attend school every day. Thus, another importance of technology in schools is that it brings down the drop-out rates. Using computers on a daily basis helps the students in developing an understanding of the various computer tools and soft ware's. This kind of education prepares the students and makes it easier for them to learn about the various software applications in future. More information is available on why is technology so important today. This very well defines the importance of computers in the classroom. Looking at the importance of technology in the classroom, it can be said that it indeed is the need of the hour. Some people might be reluctant to this change and usage of technology among children, but they will have to come around sooner or later, owing to the positive effects of technology on society.

ICT is the best tool in teaching Language and Literature

Learning materials inspired and delivered by modern technology increases value to a teaching environment in which contact hours are limited. But balancing between the potential of technology and the careful grooming and attention students

sometimes require is critical. Technologically inspired teaching materials should create a 'cognitive apprenticeship' and use storytelling to convey messages in powerful, attention getting ways. They should help develop underlying thought processes such as critical thinking, analysis, and problem solving. Technology can do other things as well. New materials delivered via the Internet that help with the repetition necessary for developing reading, writing, and listening in English can eliminate drudgery for educators and can be entertaining. Many courses can combine old and new technologies and thus create a more effective and dynamic classroom. The successful combination of old and new is blending the delivery of class materials and creating "rich-text materials". Blending delivery is delivering educational materials in multiple means, including textbook, online Learning Management Systems, the Internet, the Intranet, and CD ROM. Rich-text materials are those that combine multimedia such as print, audio, and video into one well thought out and designed package. With careful consideration, each educational technology can be used for what it does best. That is because both blending and creating rich-text maximize the affordances of a technological medium: what the medium offers, what it provides, what it furnishes, and what it invites. For example, paper offers several common affordances. Paper is thin, light, porous, opaque and flexible. That means you can write on it, fold it and bind it.

Digital technology offers several unique affordances too. It is dynamic and can manage large amounts of information. That means you can create interactivity and dimensionality and can simultaneously appeal to more senses than paper. Because of complexities and the need for expertise, educators should not be expected to create solutions on their own. While they should be familiar with the technology and the software that powers it, they are not full-fledged technicians and should not be expected to be. Because of workload, lack of dedicated time, and occasional technological intimidation, educators should partnered with others in "production cells" to author rich-text material and to determine means of delivery. Some who have had success in integrating multimedia into course structures have found that these production cells should include a content expert, an instructional designer, and a software expert. The content expert (teacher) develops the objectives, thinks about the skill set and knowledge, and the values and ethics. Developing rich-text materials and identifying suitable means of delivery is part of a organic procedure that moves from a specific list of recommendations, to design, to testing, to finished product. Creation requires identification of key course concepts first; then considering how those concepts can be best communicated. This is vital because knowing something is quite different that different than communicating it. After concepts come examples and determining which elements teach which concept the best. Practicing the course one semester beforehand is helpful because developing rich-text and making them available for delivery in multiple ways is labor intensive. Getting from inspiration to creation to finished product involves several steps. A technological inventory looking at who has done what, who is planning what, and who would like to do what across the campus is a good beginning. This will help identify working groups. Creating a strategic plan with a timeline that is based upon an understanding of technical requirements, materials requirements, the pedagogy, and the students and their needs is very much part of the process of invention as well.

Conclusion

ICT use enhances the delivery and presentation of classroom materials. It benefits to students and teachers as well. If designed carefully, students will find that these materials engaging and intuitive and those they combine methods that help them learn best. Educators will find that these materials help them with their educational tasks and can help develop an organic, continually growing resource library for others to use. Because students find them more attractive, rich-text materials facilitate self-paced individualized instruction and remove repetitive and redundant tasks from the classroom.

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Detection of Lexical Units of C-Language Using Speech Recognition System

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Abstract: People may take advantages of computer in terms of program development. But for a physically disabled person or blind person, there are scarce chances of using these capabilities. Speech is a prime communication mechanism for a human being. It transmits a message through a series of sound units. Speech usually generates the sound waves modulated by the vocal tract. This study is the prime stage for a generation of programming environment with the help of speech. In this study, we take the syntax and lexical units of the C programming language. Here we collect the speech signals of lexical units of programming language. We maintain the speech database of these units. Here we proposed a new method to process these signals using a combination of Mel Frequency Cepstral Coefficients (MFCC), Principal Component Analysis, and Support Vector Machine. In our previous study, we use MFCC and SVM, which gives us the accuracy of 78.94%. Now, this newly proposed method provides us with an accuracy of 83.13%.

Keywords: Speech, Lexical Units, Mel Frequency Cepstral Coefficients, Support Vector Machine

1 Introduction

Speech Recognition is the process of converting a speech signal to a sequence of words, with the help of a computer program. It is also known as Automatic Speech Recognition (ASR) [1]. Speech is the most common form of human communication [2, 3]. Due to Speech recognition technology, it is possible for us to work on a computer using human voice commands [4]. It allows the computer to understand human languages [5]. Speech recognition techniques are used to develop systems for speech input to machine [6]. Applications based on spoken interfaces are more crucial. They allow the user to interact with a computer as if it were a conversational partner. Speech Processing is a study of the speech signal and the processing method of these signals [7, 8, 9]. It can be classified into various categories, i.e. Speaker Recognition, Speech Coding, Speech Enhancement, Speech Synthesis, Voice analysis, and Speech Recognition [10, 11, 12]. Speech Signal processing is referred to the acquisition, manipulation, storage, transfer, and output vocal utterances by a computer [13]. The main applications are the recognition syntheses and Compression of human speeches[6]. In this paper, we processed the speech signal of different lexical units of c language. The next section of the paper explains the experimental setup

2 Methodology

2.1 Dataset

We are interested in providing a vocal command line interface which will do most of the activities directly.
e.g.

1) start program

```
#include <stdio.h>
#include<stdlib.h>
main(int argc, char *argv)
{

}
```

2) declare a integer

```
#include <stdio.h>
#include<stdlib.h>
main(int argc, char *argv)
{
int a;
}
```

3) print a

```
#include <stdio.h>
#include<stdlib.h>
main(int argc, char *argv)
{
int a;
printf("%d",a);
}
```

In this manner, we design a command manual collect data the speech data. Following table consist of some the important keyword of c language and our interface.

Table 1. Important keywords necessary for action

int	float	char	Do	While
For	Switch	If	Else	Main
Symbol	Goto	Auto	Struct	Union
Start	End	Input	Output	

Here we select sample size of 10 subject with multiple alteration of each word as command.

The training database contains recorded speech utterances of number of lexical units of uttered by ten different users. Each word is uttered 10 times by each user. Hundred utterances of each word IS used to train the system. The important keywords which are used for creation data base are mentioned in table 1.

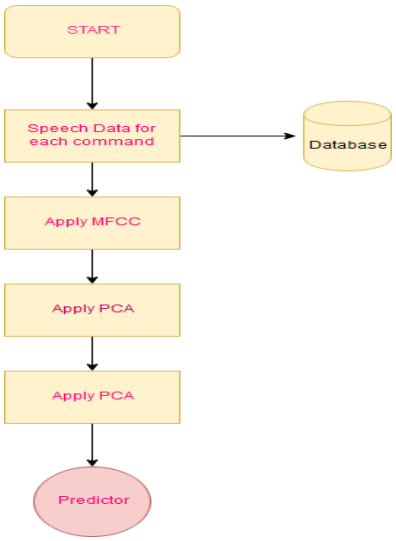

Fig. 1. Model for processing of database

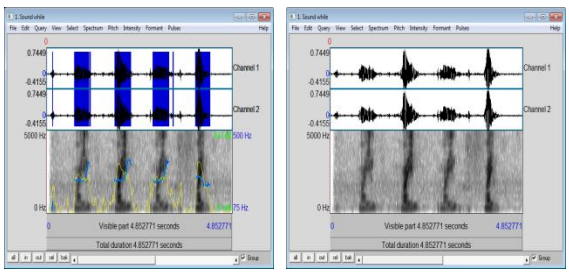

Figure 2. a) Speech signal for the word while b) Pitch analysis for the Speech signal of word while

2.2 Principal Component Analysis

Principal Component Analysis creates new set of variables called as principal component. Each new variable is combination of original variable. The principal component is chosen so that it would describe available variances. So it eliminates the redundancy in data.

2.3 Support Vector Machine

Support vector machine can be used to classify speech signal. This is supervised learning method used for classification. Here we usually separate data into training and testing sets. Each instance in the training set contains one target value and several attributes. The goal of SVM is to predict the target value.

3.Result and Discussion

The features are extracted by MFCC. These features are tested by using PCA and SVM and we get offline recognition rate as follows.

Table 2. Average recognition ate using PCA and SVM

Subject	SVM (% Accuracy)	PCA+ SVM (% Accuracy)
Subject 1	85.25	90.15
Subject 2	77.34	79.41
Subject 3	82.67	87.23
Subject 4	74.34	74.90
Subject 5	80.78	90.56
Subject 6	79.45	84.56
Subject 7	78.89	85.96
Subject 8	77.56	80.20
Subject 9	70.89	75.96
Subject 10	81.89	82.37
Average	78.94	83.13

Conclusion

In this paper we explained the system developed or speech recognition system to recognize the lexical units of C language. Lexical units are the basic constructs of any language. Here, initially we consider the 19 lexical units. This system is developed in using python . We construct two

speech databases one for training and one for testing. Both databases have sufficient number of utterances of lexical words. We apply MFCC and then combination of PCA &SVM and the corresponding results are displayed in table 2. Table list average recognition rate of all 10 users. Using SVM is 78.94%. We improve this result to 83.13 using combination of PCA and LDA.

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The Study of Hyper Speed Signaling

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ABSTRACT: ***This paper focuses on hyper speed signaling paradigm, which helps network administrator to work with Flash-like superpowers. The hyper speed signaling relates to use of optimal (hyper speed) paths for command and control traffic and suboptimal (slower) paths for all other traffic to implement sophisticated network service differentiation and defensive techniques. A reaction time window is created to guarantee that packets sent along hyper speed paths can arrive sufficiently in advance of malicious traffic to alert network devices and initiate defensive actions. The defense techniques supported by hyper speed signaling constitute distributed filtering, teleporting packets, quarantining network devices, tagging and tracing suspicious packets, projecting holographic network topologies and transfiguring networks. The paper also discusses the principal challenges involved in implementing hyper speed signaling in MPLS networks.***

Keywords— ATM, ISR, MPLS, Omnipresence, Precognition, VPN etc.

I. INTRODUCTION

In military mail services security is more precious factor. The ability to deploy Paul-Revere like sentinel messages could help to improve defensive postures. These sentinel messages could out run malicious traffic. This suspicious traffic can be slowed down slightly to enable sentinel messages to carry out their task. Travelling by speed more than light is not possible but the "Hyper Speed" can be created by slowing down all other paths. This paper highlights that Hyper Speed Signaling uses optimal paths (hyper speed) for higher priority traffic and suboptimal (slower) paths for other traffic.

Hyper speed signaling provides teleporting of packets, teleporting in which matter gets converted into minute particles or energy at one point and recreated in original form at another, quarantining network devices means isolating data transmissions to prevent viruses, worms or other malware attack. It gives tagging and tracking of suspicious packets that result in mitigation efforts. It also projects holographic topologies and transfigure networks. This paper describes the hyper speed signaling paradigm, including its core capabilities and implementation requirements for MPLS networks. Ranging from distributed filtering and teleportation to quarantining and network holography, are highlighted.

II. HYPER SPEED SIGNALLING

Hyper Speed Signaling uses optimal paths (hyper speed) for higher priority traffic and other is sent along suboptimal (slower) paths. In general one or more hyper speed paths may exist and multiple slower paths between two nodes are available. Distinction between optimal and suboptimal path is that different reaction windows available for a hyper speed path compared to slower paths. These different windows provide varying amount of time to accomplish defensive actions (depends upon nature of priority) e.g. suspicious data could be sent along slowest paths.

Hyper speed paths need not be reserved only for command and control traffic. Certain time-critical traffic, such as interactive video and voice communications, could also be sent along faster, and possibly, hyper speed paths. Consequently, a suboptimal path should incorporate the smallest delay necessary to obtain the desired reaction time window. Different reaction windows are available for a hyper speed path compared to different slower paths. These different windows provide varying amount of time to accomplish defensive actions (depends upon nature of priority) e.g. suspicious data could be sent along slowest paths.

III. CORE CAPABILITIES

Precognition is provided by hyper speed signaling. Precognition is nothing but advance warning about attack. This implements sophisticated network defense techniques. The advance warning

provided by Hyper Speed Signaling enables a network to employ "precognition", and react to an attack before it reaches the target.

Precognition strongly relates to defensive actions. One of the capabilities provided by Hyper Speed Signaling is that network administrator can identify a threat, or target packet arrives at a node under attack. There are two ways for identifying threats, first is to track multiple target packets and correlate information about all target packets, regardless of their locations in the network. Second way uses multiple hyper speed ways, one for each target packet under observation.

Network administrator can send a hyper speed signal to any node in the network before target packet arrives, referred as "Omnipresence". Omnipresence with respect to multiple paths has two versions: Stronger, there is only one flash and this flash arrives before all packets under consideration arrive at their destination; Weaker, multiple flashes, one for each packet.

Another core capability is the opportunity to collect intelligence, conduct surveillance of the network, and inspect the network. These actions are referred as Intelligence, Surveillance, and Reconnaissance (ISR). Intelligence is high level planning in nature; it involves the integration of time-sensitive information from all sources into accurate, concise and objective reports related to the threat situation. Reconnaissance, which is tactical in nature, refers to an effort or a mission to acquire information about a target, possibly a one-time effort.

Surveillance lies between intelligence and reconnaissance. It refers to the systematic observation of a targeted area or group, usually over an extended time. The scope and speed of ISR capabilities depends on connectivity of nodes in network via hyper speed paths and reaction time windows offered by paths. Tagging provides identifying suspicious packets, projecting holographic network topologies and transfiguring network, which means reshaping a network, to adapt environment and context.

IV. MPLS

Circuit switching and packet switching are two paradigms of transporting traffic across network. Circuit switching provides low latency and high Quality of Service (QoS), e.g. frame relay, ATM. IP in OSI is packet switched. Service providers give network with flexibility of IP and speed of Circuit switching. Packet switching connects heterogeneous networks to enhance QoS and flexibility. In MPLS (Multi Protocol Label Switching)

Overlay model is used. ATM switches are unknown to IP routing and IP routers are unknown to ATM infrastructure. ATM network presented in virtual topology and IP is used to route traffic across this network. IP routing control paradigm uses forwarding mechanism. IP network have hierarchical model because of Classless Inter Domain Routing (CIDR). IP addresses consist of network prefix followed by host id. IP node forwards packets according to the most specific, e.g. "longest match", route identified by destination address.

For MPLS, more general forwarding mechanism is used called "Label Switching". In MPLS connected oriented nodes are directly peered with connectionless technologies by transforming ATM switches to IP routers. ATM switches directly participate in IP routing protocols (RIP and OSPF) to construct label switched path (LSP). LSPs are implemented in ATM switches as virtual circuit that enables existing ATM technology to support MPLS forwarding mechanism. Within MPLS core, label switching depends on packet label to select LSP. Any algorithm that constructs LSP and specify labels can be used to control MPLS network. Hyper Speed enables distributed filtering, teleporting packets, quarantining network devices, tagging and tracking suspicious packets, projecting holographic network topologies and transfiguring networks.

A. Label Switching

Connectionless IP routing is transformed into Connection oriented by overlaying Network layer function with Data Link layer function. Label Switching resolves the limitations that presents in the circuit Switching. IP address is converted into Labels according to the class and type of services like categories and priori-ties. An intermediate router rely on the labels for further routing of destined IP packets with appropriate label. This technique is used in MPLS. An MPLS frame uses various Data link frames like Frame Relay, Ethernet and ATM. Since MPLS utilizes Label Switching and prop up multiple protocols, it is called as Multi Protocol Label switching.

B. Label

A label in MPLS is utilized as the routing code like STD code in circuit switch. It identifies the path a packet should traverse in the MPLS domain. Label is encapsulated in a Data link layer. Thus new layer is formed in between Network layer and Data link layer in the OSI model. The new layer is known as MPLS SHIM layer.

The shim is consists of 32 bits out of which 20 bits are allocated to the label also called label stack, 3-bits are experimental bits generally used for specifying class of service. One bit is kept reserved for bottom of stack bit and is set if no label come after. 8-bits are utilized for time-to-live (TTL) used in the same way like IP [3]

C. Label Distribution

A forwarding algorithm alone is not sufficient to implement an MPLS network. The individual nodes need to know the network topology that make informed forwarding decisions. Because

MPLS is not tied to a particular paradigm, any routing protocol capable of carrying MPLS labels can be used to build MPLS LSPs. Such protocols include:

- **Label Distribution Protocol (LDP):** This protocol is designed to build aggregate LSPs based on IP routing information gathered by a traditional IP routing protocol such as RIP [1].

- **Resource Reservation Protocol (RRP):** Traffic Engineering (RSVPTE): This protocol incorporates extensions to RSVP in order to construct LSP tunnels along requested paths with varying QoS. RSVPTE is commonly used for traffic engineering (TE) in MPLS networks [2].

- **Multiprotocol Extension to Border Gateway Protocol 4 (MPBGP):** This protocol extends BGP, and generalizes distributed gateway addresses and carries labels. It is commonly used to build VPNs [4].

V. HYPER SPEED DEFENSE ON DIFFERENT NETWORKS

A. Hyper speed Defense On Local Area Networks (LAN)

The same hyper speed communication process discussed may be applied to a LAN. Hyper speed signals are identified by reserving a special set of MAC addresses using fields in 802.1q (VLAN) headers or using 802. 1p (Ethernet QoS), depending on the technologies supported by Ethernet switches 26. To implement the hyper speed communications, most Ethernet switches 26 would require specialized software. Implemented in a similar manner to hyper speed communications, queue priority is implemented by programming Ethernet switches 26 to forward hyper speed frames ahead of all other frames in the memory of Ethernet switches 26. Ethernet switches 26 supporting 802. 1p are already equipped for queue priority. Implementing delay variation includes programming Ethernet switches 26 to place non-hyper speed frames in a queue where the frames wait for a fixed period-of-time.

Route variation is implemented in several ways. One approach is to modify the Spanning Tree Protocol to calculate two spanning trees. The example in figs. 1A and 1B depicts two spanning trees in Ethernet LAN 28. A non-optimal spanning tree used by non- hyper speed frames is illustrated in fig. 1A. fig. 1B illustrates the minimum spanning tree, which is used by hyper speed frames. Lines 27 depict the Ethernet links. Dashed lines 27A indicate that the link has been selected as part of the spanning tree. The approach for implementing route variation is limited because the reaction time window provided by the maximum spanning tree compared to that provided by the minimum spanning tree may not be sufficient to implement defensive actions. This problem is resolved by also applying the delay variation technique to obtain the desired reaction time window.

Alternatively, implementing route variation involves programming Ethernet switches 26 to store the loop count in an unused Ethernet header field, and to send frames in loops a fixed number of times. Another alternative employs Virtual LAN (VLAN) 28 hopping. This alternative is also applicable to enterprise networks.

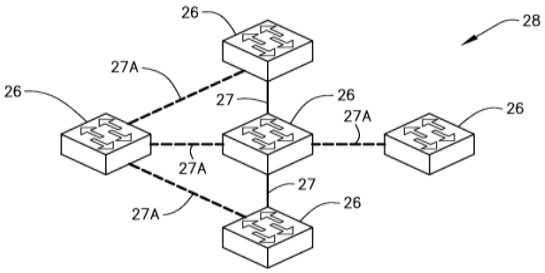

Fig. 1A.

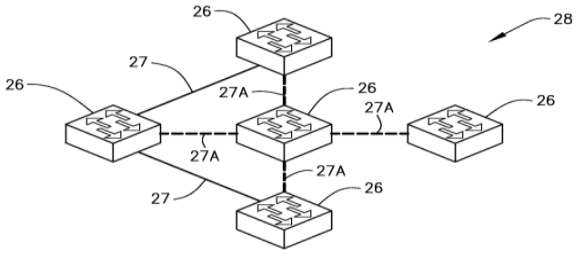

Fig. 1B.

B. Hyper speed Defense on Service Provider Networks

Referring to fig. 2, network 10, is illustrated as having nodes 12. Nodes 12 are represented as A-F. In this case network 10 is a service provider network 10. Node 12 A-F representations are associated with routers 14A- 14F. Links 16 are the connections between nodes 12. In network 10, as illustrated, node 12A is the ingress node, and node 12F is the egress node. Node 12A is also referred to in fig. 2 as the source or origination node. Node 12F is also referred to as the termination node or destination node. Route 18 is the sequence of links 16 that an electronic signal travels between an origination or source node 12A, and the intervening nodes 12B and 12C until it reaches a termination or destination node 12F. fig. 2 illustrates route 18 as three links 16 between nodes 12 marked as A-B-C-F, which are also routers 14A, 14B, 14C and 14F.

Similarly, nodes 12D and 12E are also routers 14D and 14E. Path 20 includes links 16 and queues associated with nodes 12. Path 20 is illustrated in fig. 2 as three links 16 between and including nodes 12 marked as A-B-C-F, which are also routers 14A, 14B, 14C and 14F. The dashed line on fig. 2 represents path 20. The path time is the sum of the delay times imposed by the constituent links 16 and queues comprising path 20. Network 10 illustrated in fig. 2 is representative of a multiprotocol label

switching (MPLS) provider network. MPLS is an ideal technology for implementing hyper speed signaling because it has built-in identification and service differentiation technologies. Labels in MPLS act like circuit identifiers in asynchronous transfer mode (ATM) to designate paths 20 taken by packets in the core of network 10.

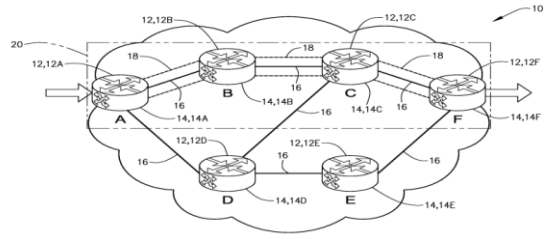

Fig.2 MPLS network

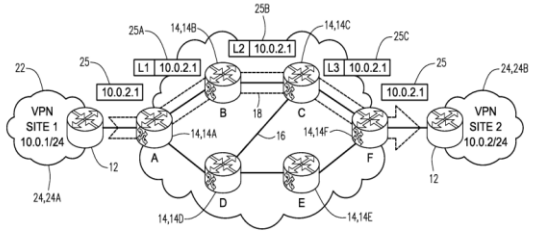

Fig.3 VPN

Virtual private network (VPN) 22, consisting of two sites 24, is connected via network 10 as illustrated in fig. 3. VPN 22 in fig. 3 is a prior art illustration as part of a VPN service provider. An unlabeled internet protocol (IP) packet 25 travelling from site 24A to site 24B enters network 10 at router 14A. Router 14A is referred to as label edge router (LER) 14A because it resides at the edge of an MPLS domain. LER 14A examines the destination IP address, consults its IP routing table, applies a Label LI thereto, and forwards packet 25 to router 14B. Router 14B is referred to as label switching router (LSR) 14B because it resides within the MPLS domain. LSR 14B is positioned to receive labelled IP packet 25 and detects Label LI . Using the Label LI, LSR 14B immediately identifies the path for packet 25, replaces Label LI with Label L2, and forwards packet 25 to LSR 14C. LSR 14C functions in a manner similar to LSR 14B, applies Label L3, and forwards packet 25 to LER 14F. LER 14F recognizes that packet 25 has reached the destination network, removes the label, and forwards the unlabeled IP packet 25 to site 24B.

Using fig. 3 as an example, hyper speed routing in MPLS uses labels to distinguish hyper speed packets 25 from non-hyper speed packets 25. MPLS-capable routers 14 are equipped with quality of service (QoS) and traffic shaping features. LSRs 14 are configured to give hyper speed packets 25 the highest priority based on the packet label. Likewise, LSRs are configured to delay hyper speed packets 25 for a fixed period-of-time in forwarding queues. A non-limiting example of a delayed period-of-time is about 50 milliseconds. Because the label dictates the QoS and path 20, non-hyper speed packets 25 can be redirected along circuitous routes 18 by constructing the corresponding paths 20 using non-hyper speed labels. The labels corresponding to optimal routes 18 are reserved for hyper speed packets 25.

C. Hyper speed Defense on Enterprise Networks

Referring to fig. 4, enterprise network is illustrated. Because enterprise networks 30 are composed of LANs 28 using IP, the techniques for implementing hyper speed signaling in LANs 28 are also applicable to enterprise networks 30. However, the protocols that support enterprise networks 30, such as IP, are manipulated to enable hyper speed signaling in enterprise networks 30. Larger enterprise networks 30 may apply the same service differentiation techniques used by service providers. Depending upon the size of enterprise network 30, by way of a non-limiting example, and either singly or in combination, the protocols used include, IP, MPLS, as well as other older and newer protocols.

The type of service (ToS) field or an IP option can be used to distinguish hyper speed packets 25 from other packets 25. The features of routers 14 of enterprise network 30 determine particular service differentiation techniques available. If routers 14 have the proper features, the queue priority and delay variation techniques are implemented by configuring routers 14 to give priority to hyper speed packets 25 and to delay non- hyper speed packets 25 in queues.

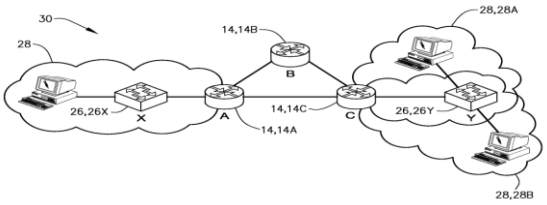

Fig. 4 Enterprise Network

Route variation is implemented by manipulating routing protocols (e.g., routing information protocol (RIP) and open shortest path first (OSPF)), or by applying a specialized hyper speed routing protocol such as Ac protocol, which is discussed in detail here in below. fig. 4 illustrates enterprise network 30 consisting of three LANs 28 connected by three IP routers 14. Two LANS 28A and 28B are both VLANs 28. To implement route variation, the routing table at router 14A must be manipulated, or router 14A must be programmed to send ordinary packets 25 to a next hop that does not correspond to the hyper speed path. Thus, hyper speed packets travelling from LAN 28A to VLAN 28B follow the optimal hop sequence identified by X-A-C-Y. Non-hyper speed packets 25 follow the hop sequence identified by X-A-B-C-Y. Hop sequence X-

A-C-Y represents Ethernet switch 26X to router 14A to router 14C to Ethernet switch 26Y. Similarly, hop sequence X-A-B-C-Y represents Ethernet switch 26X to router 14A to router 14B to router 14C to Ethernet switch 26Y. [0068] In the case of enterprise networks 30 employing VLANs 28, Ethernet switches 26 are programmed to permit VLAN 28 hopping. Referring to fig. 4, hyper speed packets 25 travelling from VLAN 28B to VLAN 28C hop via Ethernet switch 26Y without visiting router 14C. On the other hand, non-hyper speed packets 25 travel via the sequence of Y-C-Y, visiting router 14C as expected. The sequence of Y-C-Y represents packet travel from VLAN 28B to Ethernet switch 26Y to router 14C to Ethernet switch 26Y to VLAN 28C. Enterprise networks 30 may contain VPNs 22. The implementation of hyper speed signalling in enterprise networks 30 with VPNs 22 that span multiple geographic locations may require the cooperation of one or more service providers.

D. Hyper speed Defense on Internet

When using hyper speed defense on internet, internet protocols require modification of the software in routers 14 and Ethernet switches 26. However, an altered protocol can be wrapped between service provider networks, LANs 28 and enterprise networks 30. Other switches used with computer communications, such as ATM switches, fiber optics, etc., are understood to be used in place of, or in combination with Ethernet switches 26. Hyper speed packets 25 in the Internet are identified using ToS or optional IP fields. Since the Internet is composed of service provider networks 10, hyper speed signalling implementations for service provider networks 10 are employed. The same is true of LANs 28 and enterprise networks 30. Enterprise networks, LANs, and participating providers perform hyper speed routing without the cooperation of non-participating providers. Non-participating providers behave in the standard way while participating networks treat the non-participating providers as if they were links among the participating networks.

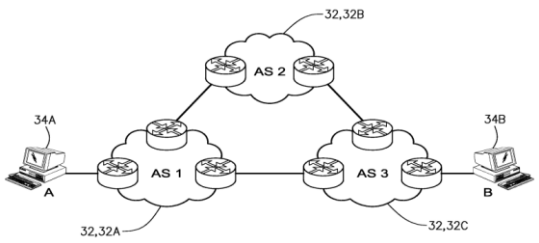

Fig. 5 Internet

Cooperating service providers can also manipulate the Border Gateway Protocol (BGP) to create optimal and suboptimal paths 20 without

advertising the optimal (hyper speed) paths 20 to non-cooperating service providers. fig. 5 illustrates three autonomous systems (AS) 32 with Client 34A connected to AS 32A and Client 34B connected to AS 32C. Hyper speed packets 25 travelling from Client 34A to Client 34B would follow the AS 32 sequence of AS 32A to AS 32C, while non-hyper speed packets 25 would follow the AS 32 sequence of AS 32A to AS 32B to AS 32C.

VI. CONCLUSIONS

MPLS has emerged as a mainstay for transporting large volumes of traffic over a wide array of networks. Indeed, much of the world's enterprise traffic already depends on MPLS-based infrastructures to deliver reliable voice, video and application services. A continuing attack on the MPLS infrastructure could cripple corporate, national and even global operations. As attacks on computer and telecommunications networks become more prolific and more insidious, it will be increasingly important to deploy novel strategies that give the advantage to network defenders.

Hyper speed signaling is a promising defensive technology that could combat current and future threats. Hyper speed signaling does not require electrons to move faster than the laws of physics permit; instead, malicious traffic is slowed down ever so slightly to endow defensive capabilities that are seemingly magical. The hallmark of good engineering is making the right trade-off. Intentionally slowing down network traffic may appear to be counterintuitive, but the defensive advantages gained by hyper speed signaling may well outweigh the costs.

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Image Classification using Convolution Neural Network

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Abstract: Classification plays an important role in image processing and pattern recognition. This paper shows the used of ResNet-50 convolution neural network for image classification using the algorithmR_Image_Classification. For experimentationthree different types of image dataset is selected from ImageNet dataset. The sample dataset is divided into 30% for training and 70% for validation. Accuracy is considered for measured.The result shows that ResNet-50pre-trained convolution neural network gives satisfactory results for image classification.

Keywords: ResNet-50, Convolution Neural Network, ImageNet

1. Introduction

The classification is a process of assigning class labels to the images (objects) based on the extracted features and the relationships among the features. Classification is a mandatory step in optical character recognition that groups the individual items depending on the similarity of item and group properties. It is also used to assigns class label to the unknown object. The classification is divided into two types as Supervised classification and Unsupervised classification. In most of the application due to large image dataset it is very difficult to classify the images. So, a network is required which is a trained-on sample database. ResNet-50 is the pretrained convolution neural network (CNN) on ImageNet dataset [1,2].
Krishana et. al [3] used AlexNet as a deep learning tool for image classification. Bhandare et. al. [4] discussed the used of convolution neural network for speech recognition and text classification.

2. Proposed Architecture

Fig.1 shows the proposed architecture for image classification using convolution neural networks on three categories of sample database as Airplane, Ferry and Laptop. Each category consists of 67 images.

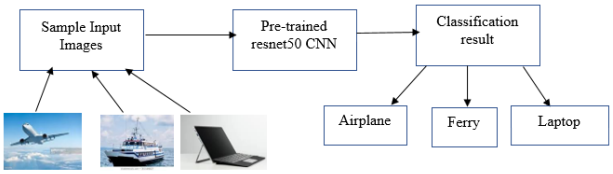

Fig.1 : Proposed Architecture for Image Classification

3. ResNet-50

ResNet-50 is a convolutional neural network that is trained on more than a million images from the ImageNet database [1]. The network is 50 layers deep and can classify images into 1000 object categories, such as keyboard, mouse, pencil, and many animals.

3.1) Working of ResNet-50

For classification of images using ResNet-50 following algorithm R_Image_Classification is used.

Algorithm:R_Image_Classification Input_Images, Labeled Images)

Step 1) [Read the input image fullpath and sample datasets into outputfolder and rootfolder variable using fullfile function]
Step 2) [Stored the categories of images into category variable.]
Step 3) [Stored image and its category level into variable imds using ImageDataStrore Function.]
Step 4) [count the number of images from each category. If the number of images in each categoriesis not equal then do the following:
4.1) if image1_db, image2_db and image3_db is not equal do

Find the min number of image_db from three database image and store it into mincnt.

Update all images of three categories = mincnt using SplitEachLabel function.

4.2) else

Find image located in imds database with their respective class label (Fig.2)

Step 5) [Load the pre-trained CNN ResNet50. Its architecture is shown in Fig.3.]

Net = resnet50()

Step 6) [Split the dataset into training and testing and augmented both the training and testing image datastore.]

Step 7) [use activation function for obtaining the features form training and testing samples.]

Step 8) [Prepared the multiclass classification using fitcecoc function.]

Step 9) [Predict the class label and measure the accuracy.]

Fig. 2: Images of sample Dataset

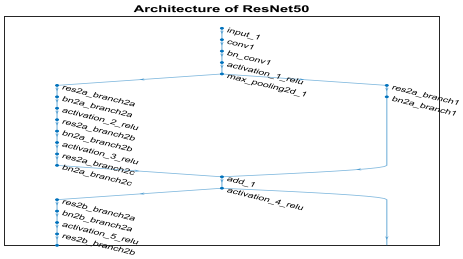

Fig 3: Architecture of ResNet-50

4) Results and Discussion

By applying the mentioned algorithm (R_Image_Classification) on sample dataset, it is identified that using ResNet-50 the accuracy of testing samples is 98%.

5) Conclusion

The ResNet-50 convolution neural network give satisfactory accuracy on sample database for image classification. In future this network is tested on different dataset with different training and testing percentage.

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A Comparative Study of Audio Steganography Techniques

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ABSTRACT: *In era of digital communication, to enforce data security new technique has been proposed is Steganography. Audio steganography is one of the security technique in which any type of data can be hidden in audio. The technique is so powerful since anybody else cannot easily detect the error in audio. In this paper a comparative study has done on various techniques in audio steganography.*

Keywords:Audio Steganography, Stego-audio, LSB,PSNR, MSE

1. Introduction:

"Steganography" is a Greek origin word which means "hidden writing". Steganography word is classified into two parts: Steganos which means "secret or covered" (where you want to hide the secret messages) and the graphic which means "writing" (text). However, in the hiding information the meaning of Steganography is hiding text or secret messages into another media file such as image, text, audio, and video.

Audio steganography is the technique in which hiding information inside audio signals or hiding secret audio file in cover file. There are number of types of audio files available like WAV file (.wav) and MPEG layer 3 file (mp3) etc. In audio Steganography, secret message is embedded into inside audio signal which results from slender shifting of the binary sequence of the equivalent audio file. Audio Steganography methods can embed messages like texts, Images, small audio clips in WAV, AU, and even MP3 sound files. There are some methods like LSB coding, spread spectrum, Phase coding, Echo hiding which are being used for audio Steganography [3, 4, 5].

2. Basic terms for Steganography:

- **Cover-object** - The original object where the message has to be embedded.
- **Stego-message** - Secret message, cover text and cover image that has to be embedded in the cover object.
- **Stego object** - The cover object, once the message has been hidden or embedded.
- **Stego Key**- The secret code to be shared between Sender and receiver to embed and retrieve the message.
- **Embedding algorithm**: It is the way or the idea that is often used to embed the secret information in the cover message. [3]

3. Types of Steganography:

1. **Image Steganography:** - For hiding the secret message into carrier image, which is then converted into stego image.
2. **Text Steganography:** - In this, the message that is to be sent is rooted firstly in a text file by formatting. The format it based on line-shift coding, word-shift coding, feature coding etc. Reformatting of the text destroys the rooted content hence the technique is not robust.
3. **Audio Steganography:**-The secret message is embedded into unused audio bits as every file contains some unused bits or unused area of bits where secret message can be hided.
4. **Video Steganography:** - Video steganography divides the video into audio and image frames where embedding is performed in the audio file.

4. Audio Steganography:

Audio Steganography is the most relevant for Information Security Media. Important authentication is embedded in digital sound. In Audio Steganography, the vulnerability of the Human Auditory System (HAS) is used to hide information in the audio. In earlier years, several Information hiding algorithms are proposed as well as implemented. All these algorithms exploit the characteristics of the human auditory system (HAS) for hiding information in a transparent manner [6].

In this type of steganography we can embed secret messages into digital sound in audio steganography. It is more complex process as compare to embedding messages in other media. This steganography method can embed messages in WAV, AU And even MP3 sound files [7].

5. Basic Model of Audio Steganography:

The model for steganography is shown in Fig 1. Message is the data that the senderwishes to remain it confidential. Message can be plain text, image, audio or any type of file.Password is known as a stego-key,using the stego key the receiver can extract the messagefrom cover file if receiver knows stego key. The cover-file with the secret information is known as a stego-file.[1][2]

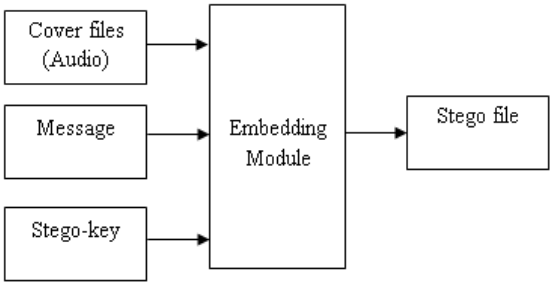

Fig. 1 Basic Audio Stegnography Model

The components of steganographic system are:

Emb Message: The message to be embedded.

Cover: The data in which emb will be embedded.

Stego file: A modified version of cover that contains the embedded message emb.

Stego-Key: Additional secret data that is needed for the embedding and extracting processes and must be known to both, the sender and the recipient.

6. Audio Steganography Techniques:

There are different methods through which audio steganography explored:

- Least Significant Bit (LSB) Coding
- Echo Data Hiding
- Phase Encoding
- Spread Spectrum
- Parity Coding

Least Significant Bit (LSB) Coding: This method is used by pitch period prediction is conducted during low bit speech encoding. Thus, maintaining synchronization between information hiding and speech encoding. Sampling technique followed by Quantization converts analog audio signal to digital binary sequence.

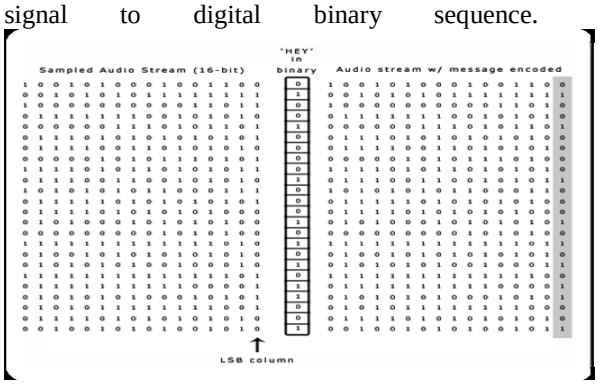

Fig.2. LSB coding example

In this technique LSB of binary sequence of each sample of digitized audio file is replaced with binary equivalent of secret message.

Echo Data Hiding: In echo hiding, information is embedded in a sound file by introducing an echo into the discrete signal. Like the spread spectrum method, it too provides advantages in that it allows for a high data transmission rate and provides superior robustness when compared to the noise inducing methods. If only one echo was produced from the original signal, only one bit of information could be encoded. Therefore, the original signal is broken down into blocks before the encoding process begins. Once the encoding process is completed, the blocks are concatenated back together to create the final signal.

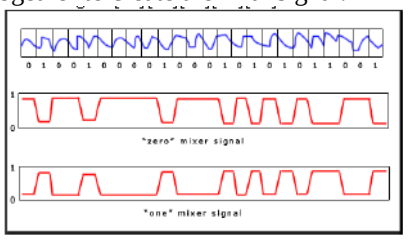

Fig. 3. Data Hiding

One offset value represents a binary one, and a second offset value represents a binary zero.

Phase Encoding: In this method, stream file splits audio into blocks and embed whole secret sequence into phase spectrum of the first block. Human Auditory System (HAS) can't recognize the phase change in audio signal as easy it can recognize noise in the signal. The phase coding method exploits this fact.

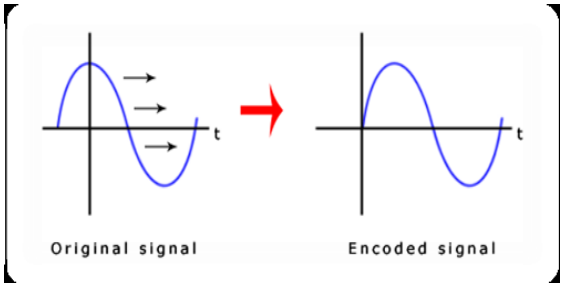

Fig.4. Phase coding Method

This technique encodes the secret message bits as phase shifts in the phase spectrum of a digital

signal, achieving an inaudible encoding in terms of signal-to- noise ratio.

Spread Spectrum: One particular method of spread spectrum encoding is DSSS (Direct Sequence Spread Spectrum) which spread steganography by multiplying it by certain pseudorandom sequence. In the context of audio steganography, the basic spread spectrum (SS) method attempts to spread secret information across the audio signals frequency spectrum as much as possible. This is analogous to a system using an implementation of the LSB coding that randomly spreads the message bits over the entire sound file. However, unlike LSB coding, the SS method spreads the secret message over the sound files frequency spectrum, using a code that is independent of the actual signal. As a result, the final signal occupies a bandwidth in excess of what is actually required for transmission.

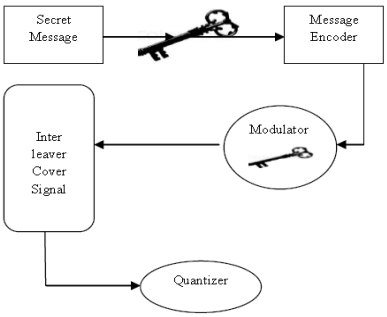

Fig.5. Spread Spectrum

Parity Coding: Instead of breaking a signal down into individual samples, the parity coding method breaks a signal down into separate regions of samples and encodes each bit from the secret message in a sample region's parity bit. If the parity bit of a selected region does not match the secret bit to be encoded, the process flips the LSB of one of the samples in the region. Thus, the sender has more of a choice in encoding the secret bit, and the signal can be changed in a more unobtrusive fashion.

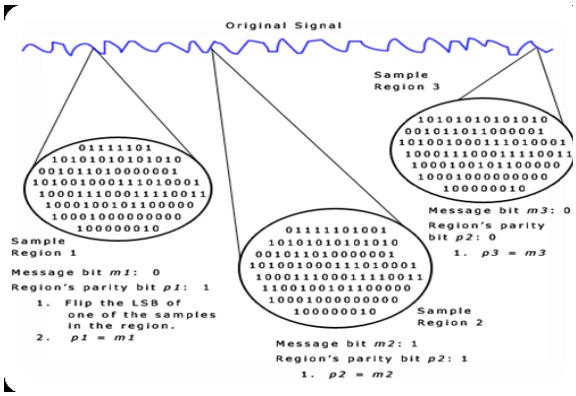

Fig. 5: Parity Coding Method

7. Comparison Of Audio Steganography Techniques:

In this section, we represent several Audio Stegnography Techniques along with their descriptions, features, disadvantages:

Sr. No	Audio Stegnography Techniques	Description	Advantages	Disadvantages	Hiding Rate
1	Least Significant Bit (LSB) Coding	Digital audio file is changed with binary correspondent of private content.	Simple and easy way of hiding Information with high bit rate. i.e. Huge amount of data to be encrypted.	Easy to extract and to destroy	16 Kbps
2	Echo Data Hiding	Confidential message is inserted into covert audio signal like an echo.	Difficult to determine.	Low data security and less data capability.	40-50 Bps
3	Phase Encoding	Change primary audio fragment phase with a reference phase that signifies secret message.	Robust against signal processing	Operation Low data transmission rate, only used for minor data	333 Bps
4	Parity Coding	Decompose a signal into distinct trials and embeds each bit of the hidden message	More robustness	Loss of embedded information	320bps
5	Spread Spectrum	Spread the information overall signal frequencies.	Provides better robustness and increase transparency.	Susceptible to time scale variation & requires more bandwidth.	20 Bps

Table 1: Comparison of audio steganography

Conclusion:

The message signal is transmitted with utmost security and can be retrieved without any loss in transmission in this method. So in this paper comparative study of different audio steganography techniques and their approaches is presented. The different techniques on the basis of some parameters like strengths, weaknesses, Embedding technique, hiding rate have been discussed in the Table 1 given above. There is a large variety of different techniques with their own advantages and disadvantages. We surveyed various types of audio steganography techniques in this paper.

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DATA ANALYTICS AND IOT FOR PRECISE AGRICULTURE

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Abstract:
The backbone of the Indian economy is agriculture. The India is a country where out of a billion populations, 70% of the population lives in the rural areas. Where 40% of the country's manpower and agriculture could be a main job associated an influencer of the Indian economy. Big Data analytics and IOT technology performs a important role inthe feasibleness study of preciseness agriculture of vital role in growing agriculture activities is precise agriculture. This paper discusses anautomatic prediction that analyze the huge info units of Indian agricultural records withtheutilization of huge knowlwdge analytics. Massive data analytics is that the procedure of inspecting large quantity of facts comes from type of resources like sensors facts, forecasting, and social media info with kind of codes to search out the hidden patterns, unknown correlations and conjointly helpful precious information for agriculture.

Keywords: Data Analytics, IOT, precise, GPS, GIS, BD

INTRODUCTION

In the previous couple of years several applications are being established using the recent technologies like Internet-of-Things, Big Data [5], cloud and mobile computing. Currently, the world is moving on towards the smart world designs like smart agriculture, smart homes, smart phones etc. The term big data indicates to huge amount of data that is complex to analyze. Big data examples such as location maps, investigative reports, data gathered from numerous sensors located at various locations, changes in climates and detailed weather reports, political surveys about upcoming elections, and so on.

Agriculture plays a vital role in associate Indian economy according to the majority of the Indian populations. Due to the inadequate conservation, the crop turn into damaged which causes a big loss of farmer. To overcome this loss smart Agriculture concept was introduced. To enhance the crop production, precision agriculture is used with advanced technologies. It provides data around different environmental aspects which helps to monitor the system. Monitoring environmental factors are insufficient and not complete solution to improve the produce of the crops.

Figure-1: Data Analytics and Smart Agriculture.

Various other aspects also affect the productivity to the huge level. These aspects include an attack of insects and pests which can be controlled by sprinkling the appropriate insecticide and pesticides for the crop. Also the birds and other wild animals steal the crops at the harvesting stage. So, the farmers face several issues during the farming and harvesting stage. The solutions for all the issues are to take care of all factors and develop an integrated system which contains technologies as IoT, data Analytics for smart Agriculture shown in Figure-1 and Figure-2.

Figure-2: IoT and Smart Agriculture.

DATA ANALYTICS

The conventional database system has insufficient storage for the data collected from the IoT sensors. Cloud based data storage and IoT together plays an vital role in the smart agriculture. Sensors are the primary source of collecting data on a large scale in the IoT world. The analytics tools are used to analyzed data and transformed to meaningful information. The data analytics helps in weather conditions analysis, livestock conditions, and crop conditions. The data collected controls the technological advances and thus making better decisions.

The IoT devices are helpful to know the real-time status of the crops by capturing the data from sensors. Predictive analytics used to get an insight to make improved decisions related to harvesting. The analysis helps the farmers to know forthcoming weather conditions and harvesting of crops. IoT in the Agriculture supports the farmers to maintain the superiority of crops and fertility of the land, thus improving the product volume and quality.

Michael [6] discuss that the size of data varies with the context which means there is a solid connection between the dataset and users' own experiences. As per Kaisler [7], big data is large and heterogeneous making it difficult to store in regular relational databases. This data can either be structured (stored in relational databases) or unstructured to be used for analysis.

PRECISION AGRICULTURE WITH DATA ANALYTICS AND IOT

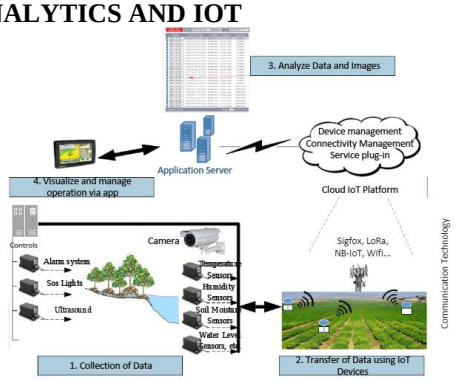

Figure-3: Precision Agriculture with Data Analytics and IOT.

Precision Agriculture is a Crop Management System. This relies on observation, measurement, and response to various inbound and outbound requirements in agricultural fields. The one of the component of smart agriculture is generally the database where all collections of data from numerous sensors and resources are gathered, stored, analyzed, tested knowledge. This provides bridge between production and quality and quantity harvest. Data consumed by obtaining and importing statistics from the multiple sensors for real time use or storage in a database ensures instant action and less damage to the crops. Thus Data Analytics and IoT for and retrieved for further actions obtained from IoT. This database offer Big Data on Crops, Soil and Climate. Crop data includes Crop stress, Statuses on crop tissue nutrients, Crop population, Weed patches, Fungal or insect infestation, Crop yield. Soil data includes Physical condition, Soil texture, Structure, Moisture, Nutrients and more. Climate data includes Humidity, Rainfall, Wind speed, Temperature.

The Devices which puts the smartness in smart agriculture to make up the network includes various things as follows:

Global Positioning Systems (GPS) with accuracy

Geographical Information Systems (GIS)

Remote sensing technologies like data sensors, cameras, data transmitters, RADARS, drones, and other connected devices

Cloud architecture

The IoT, in which devices are able to communicating with each other and deliver real-time updates and notifications to farmers on crop statuses, moisture content, water levels, crop yield, and many more. And various technologies like Data Analytics, Machine Learning, and Big Data for the entire process and setup to make sense.

CHALLENGES

Numerous challenges exist in precision agriculture with data analytics and IoT. Dynamic nature and efficient routing are discussed here.

Dynamic Nature

The dynamic nature of spatially distributed devices and objects especially with the availability of 4G-LTE (long term evolution) services around the globe is One of the biggest challenges for Data Analytics. Also, the presence of navigation services such as Google Maps has started a new era of GPS (Global Positioning System)-based communications. Thus, highly dynamic nature of data requires developing real-time solutions in order to track the mobile devices [6].

Efficient routing

Another vital challenge is to efficiently provide the route to the Spatial Big Data [2][4][5]. It means routing the traffic patterns generated by the movements of objects such as tractors, drones, sensors and humans from one location to another.

Such type of data is highly random and quite difficult to manage. Another angle on routing is to handle the amount of big data generated by modern day networks such as clouds, software defined networks [3] and MANETs [1].

CONCLUSION

Data Analytics and IoT enabled agriculture has helped to provide modern technological solutions to time

precise agriculture plays a vital role in growing agriculture activities.

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Overview of Phishing

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Abstract
Phishing is one of the type of cyber crime. Phishers represent themselves as respected companies (the target) to acquire customer accounts, information, or access privileges.Through the classification techniques just described, we can identify specific phishing groups.In this paper we describe the overview of phishing and its types.

Keywords
Introduction, Types of Phishing attack, Conclusion.

INTRODUCTION

The incidence of phishing e-mails that attempt to steal a consumer's user name and password by imitating e-mail from a legitimate financial institution. The term *phishing* comes from the fact that cyber-attackers are fishing for data; the *ph* is derived from the refined techniques they employ, to distinguish their activities from the more simplistic *fishing*.

Over the last few years, online banking, including online bill paying, has become very popular as more financial institutions begin to offer free online services.With the increase in online fraud and identity theft, financial crimes have changed from direct attacks to indirect attacks—in other words, rather than robbing a bank at gunpoint, the criminals target the bank's customers.This type of indirect attack significantly impacts the financial institutions themselves because their inability to adequately protect their customer assets tarnishes their reputations and overall trust.

Phishing has actually been around for over 24 years, starting with America Online (AOL) back in 1995.There were programs that automated the process of phishing for accounts and credit card information.

Phishing is one of the type of cyber crime. Phishers represent themselves as respected companies (the target) to acquire customer accounts, information, or access privileges.Through the classification techniques just described, we can identify specific phishing groups.The key items for identification include:

- Bulk-mailing tool identification and features
- Mailing habits, including, but not limited to, their specific patterns and schedules
- Types of systems used for sending the spam (e-mail origination host)
- Types of systems used for hosting the phishing server
- Layout of the hostile phishing server, including the use of HTML, JS,PHP, and other scripts.

Phishing, also known as *carding* or *brand spoofing.* It is the act of sending a forged e-mail (using a bulk mailer) to a recipient, falsely mimicking a legitimate establishment in an attempt to scam the recipient into revealing private information such as credit card numbers or bank account passwords.The e-mail, in most cases, will tell the user to visit a Web site to fill in the private information.To gain our trust, this Web site is designed to look like the site of the establishment the scammer is impersonating. The site isn't really the site of the legitimate organization, and it will then proceed to steal our private information for monetary gain.Thus the word *phishing* is obviously a variation of the word *fishing* in that these

scammers set out “hooks” in hopes that they will get a few “bites” from their victims.

TYPES OF PHISHING ATTACK

The three most popular phishing attack methods employed by phishers today are all considered man-in-the-middle (MITM) attacks. They are

Impersonation Attack

The impersonation type of phish is the most common method and is simple, effective,and fast.The typical approach is to mirror the target first.There are a couple of quick ways to perform a mirror,but since we are basing our attack on actual profiles of specific phishers,this example uses the same technique as a phisher:a Web mirroring tool distributed with most Linux and BSD platforms called wget (www.gnu.org/software/wget/wget.html),which is,once again, simple to use and effective.It’s so simple,in fact,you can probably guess what the mirror command would be for wget?

Forwarding Attack

In forward attck the standard approach is to collect the data and forward the victim to the real site.This is one of the more sophisticated types of phishing attack since there is no collection Web page,no images,and the only server involved has just a redirect script.The user is prompted for his or her information within the e-mail itself. This phishing style is popular with eBay,PayPal,and e-retail companies such as Amazon.These companies are more likely to e-mail us regarding possible benefits and new services offered,so it would make more sense to imitate the approach that is more comfortable to customers of e-retail.Phishers take advantage of e-retail because those businesses are more likely to put out newsletters and they send more marketing information to their customers on a regular basis.Throwing a phishing e-mail in there once in a while might not raise customer suspicions.e-Retail targets have more ROI due to the flexibility of possible ventures they could employ to lure victims.

This method is sophisticated but streamlined and I’ve personally observed it to be used by phishing groups that prefer hacking rather than illegitimately purchasing a server.This technique makes it easy for the hacker to have just one file to point at anywhere it’s available via the Internet.Later on,we will demonstrate how this technique,as well as the popup,can be extended,thus eliminating the need for a hostile server to be purchased or compromised.

Popup Attack

In the popup attack method,we will set up our phishing server to introduce a popup window while redirecting the victim to the actual target.This approach is the most uncommon type of attack because popup blockers are widely used and included by default in most browsers on the market,thus lowering the success rate of this method.For our case,we’ll disable our popup blocker to demonstrate this technique.We will not be using the MITM POST technique, but that doesn’t mean we can’t.The popup is a more creative approach,since essentially we’re using JavaScript to open an evil window capturing the victim’s information and actually placing the legitimate site behind it.This adds to the illusion of authenticity,and since we are not performing the MITM technique, detection becomes more difficult.

The early instances of phishing that began in 2003.A specific phishing group,dubbed the Delaware Phishing Group, after Secure Science tracked a particular phisher to Tybouts Corner,Delaware demonstrated this specific approach and its effectiveness.

CONCLUSION

There are many types of attack in phishing. We can prevent from these attacks by using different technique. In Future we can analyse different anti phishing techniques and work on to improve the performance of these techniques for the solution of phishing attack.

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A Study on online food delivery Applications in Bhusawal City

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ABSTRACT ***Now a day the internet is most developing technology which has power to develop any business with itself. Recently netizen's review says that online food delivery services are most speedily developing business. Coz it helps to consumer to order food from various places with comparing cost, taste review from other consumers, verity of food from being at home. On the other side it provides plenty of jobs and part time jobs. The online food delivery services which really shows a noticeable improvement in restaurant business. The main objective of the research paper is to study impact of online food delivery services on restaurant business, jobs, and satisfaction of customer in developing cities like Bhusawal.***

Keywords: Online buying, Ordering food, Food application

Introduction

The research paper presented is to find and understand the use of online application and e-commerce system in newly trending food delivery business.As per mention in topic we observed that the online food delivery business is growing up day by day in Bhusawal city. Basically Bhusawal city is a tahsile place but well known for most of central government staff that belongs to central railway, ordnance factory and also to power sector. And more over the city is also on developing path of infrastructure, it means 75% people are job oriented and 25 % people are involved in business. The research is mainly focused on people who use online delivery application for ordering food. With the help of these applications it's easy to order ready to eat food with wasting much time which can be utilised in office work or business meetings.

Now even it's easy to order different kind food from different restaurant with their speciality at same time same place. These services provide plenty of jobs for jobless and part time job opportunity college students. This research is to study taste and psychology of customer ordering from application coz the Bhusawal city mostly consist service class family people. So the research is also helpful for the restaurant owners to avail the taste and dishes to public which are trending in general and normally ordered dishes. The research is also needful for people who are interested to start up new restaurant business to get ready customer review base regarding taste, approximate cost ,and services.

OBJECTIVES

- To identify the food delivery application in bhusawal city.
- To study market share of food delivery application.
- To rank ordering food apps based on consumer preference
- To know the impact of on-line food delivery on restaurant business
- To study comparison of on-line food delivery services and regular restaurant services.

RESEARCH METHODOLOGY

The study was based on market survey data. The required information was collected by interview schedule to the selected restaurants and through journals, articles etc.,

1.To find food delivery application in bhusawal city. Choose four restaurants in city and conduct a survey of a one week to collect this information. Daily

orders and hourly orders information collect from restaurants

1. Collected data from restaurants are prepared in such a way that to finding out to market share of food delivery application.
2. As per the conducted survey rank the food delivery application based on market share, day wise number of orders and peak hours.

REVIEW OF LITERATURE

- Dr.N.Sumathi, S. Josphin (2017)7, in their study enables online food ordering system is one of the largest services for fast food restaurants. This is made possible to use of easy electronic payments system, and also useful for making easy payments for credit card consumer. In this study saying about to reduce the long queues of consumer at the counter ordering for food and also reduce the workload of employees.
- Rekha priyadharshini (2017)8, in her study examined about India fast food business is growing due to changing of consumer preferences and the largest youth population. The World Wide Journal of Multidisciplinary Research and Development. Indian fast food industry has 40% growth year after year. The most top chains are planning an aggressive expansion in semi urban areas and also most popular in tier2 & tier3 cities. The international fast food chains have to change this business model completely, to adapt to Indian preferences.
- For presentation and flowchart of process we use "**RESEARCH METHODOLOGY IN SOCIAL SCIENCE"** written by Ansandhu singh published by Himalya publishing. And another is **"RESEARCH METHODOLOGY"**written by R. Panneerselvam published by PHLlearning private limited Delhi 110092
- For costumer review we visited official website of on-line food delivery services provider like **ZOMATO(WWW.ZOMATO.COM)** and **SWIGGY(WWW.SWIGGY.COM)**.

MARKET SURVEY

Market survey is the survey research and analysis of the market for a particular product/service which includes the investigation into customer inclinations. A study of various customer capabilities such as investment attributes and buying potential. Market surveys are tools to directly collect information from the target audience to understand their characteristics, expectations, and requirements.

Purpose of Market Survey

- Gain critical customer feedback
- Understand customer inclination towards purchasing products
- Enhance existing products and services
- Make well-informed business decisions

Importance of Market Survey

There are 5 factors that depict the importance of a market survey.

1. Understanding the demand and supply chain of the target market

2. Developing well-thought marketing plans

3. Figure out customer expectations and needs

4. Accurate launch of new products

5. Obtain information about customer demographics

In this research market survey conducted for collecting details about their food online order in a particular day, for a one week. For this data collection select following four restaurants:

1. Italian Pizza,
2. Sai fast food,
3. Khandesh Hotels,
4. Amrut Dosa

In data collection following points consider;

1. Online food delivery service
2. Number of orders each service
3. Day wise food order
4. Number of orders in peak hours

As per above four points consider and data collected from each restaurant

DATA ANALYSIS

- To know business improvisation preview we visited online food provider point.

1.most of the customer for snacks and café are visit in relax and comfort time of holiday they ordered pizza n pasta with cold coffee or milk shakes so now

its totally easy to maintain comfort zone for us with the help of on-line food delivery **"Prabhat ice crème parlor and Italian pizza point onwer "(Pro. Kanti Jangale)**

1. premium parties family get together business meet when lunch or dinner is required so now coz of food delivery app its easy to attend maximum program and meetings "**owner of premier hotel (Pro. Shri. Dhanraj Falak).**
2. Mostly service class women normally use food delivery application to order food and now its easy to deliver hot n fresh food for lunch at office or at home for dinner when the work pressure is high. South and north Indian **"Amrut dosa and pawbhaji centre (Pro.hrishikesh kheda)"**

Collected information prepare in three different categories

1. Day wise orders
2. Number of order in peak hours
3. Market share

And then prepare a pie chart, Bar chart and line chart to show the graphical representation.

1. Day wise orders

As per survey whole week (day wise) orders data collected and prepare table.

Day wise Number of Orders		
Week Days	**Zomato**	**Swiggy**
Monday	66	61
Tuesday	43	29
Wednesday	51	46
Thursday	56	47
Friday	65	62
Saturday	91	84
Sunday	123	101
Total Orders	**495**	**430**

Table No. 1 Day wise order summary

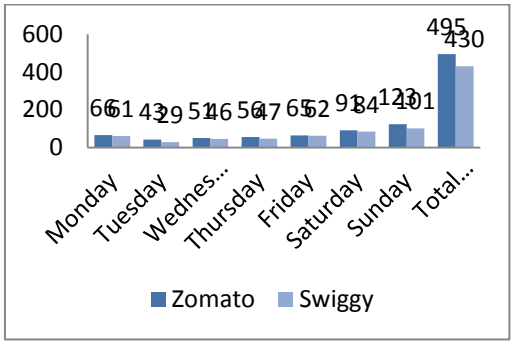


Chart No.1 Chart shows day wise number of order

After preparation of bar chart of day wise number of orders in each online food delivery services, we saw that Zomato food delivery service has more number of orders as compare to Swiggy service.

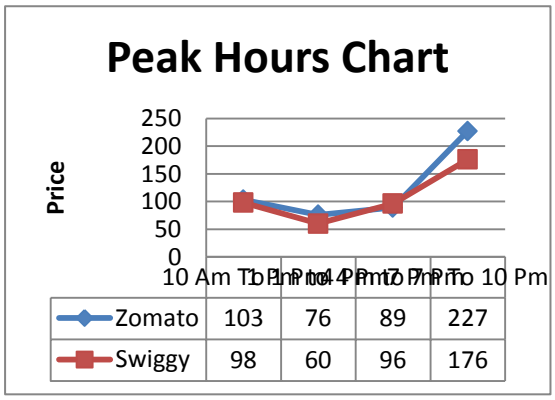
2Number of order in peak hours

As per survey whole week (Peak Hours Time Slots wise) orders data collected and prepare table.

Peak Hours Time Slots		
Timings	**Zomato**	**Swiggy**
10 Am To 1 Pm	103	98
1 Pm to 4 Pm	76	60
4 Pm to 7 Pm	89	96
7 Pm To 10 Pm	227	176

Table No.2 Shows Peak Hours Time Slots orders

Chart No. 2 Peak H



our Time Slot Chart

After preparation of chart of peak hours orders in each online food delivery services, we saw that Zomato food delivery service has more number of orders as compare to Swiggy service.

2. Market share

As per the conducted survey of total order calculate as on each service and prepare market share chart.

Market Share Chart	
Zomato	53.51
Swiggy	46.49

Table No.3 Market share chart

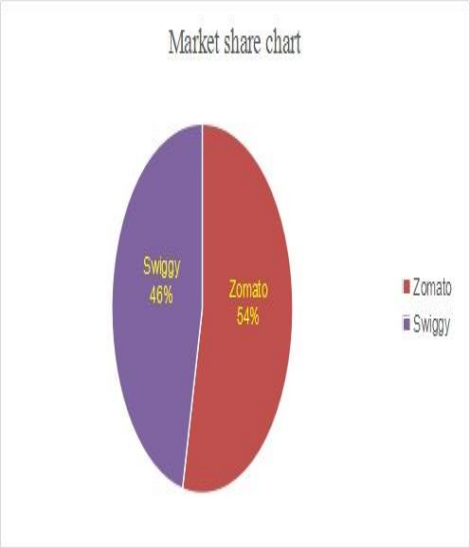


Chart No. 3 Shows the market share percentage of each service

FINDINGS

1.The above study clearly reveals the order of preference the online ordering food give in purchaofany product or services availed. 1.Companies gives the time limit to customer for daily food.

2.When the company can not give services at proper time they will given some attractive offers to customers

3.The table clearly states the mindset of the buyers when it comes to online purchase. The majority of the respondents are mainly they prefer a swiggy to order a food.

4. In both the case of buyers the first preference was given for the purchase of ordering food through swiggy in online whereas the final ranking was given for enjoy foods and others.

CONCLUSION-

1.The comfort zone of costumer is completely satisfied by using the food delivery services.

2.Online food ordering apps nowadays become fast moving in India, people do not find adequate time to go for ordering food, because of fast pace of life

3.The internet has become a major source in the digital era where online food ordering has gained significance not only by the entrepreneurs but also among the consumer.

4.One the other side some service provider also offer festival discount , special offer for regular costumers which ultimately beneficial to trio that is restaurant owner, service provider and finally customer.

5. But on the contradictory side it is annoying for the class who is completely unaware of new smart phone technology . It is difficult for them to connect and use with food delivery services because it is only useful for smart mobile phone holder.

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Study of Consumer Buying Behaviour Of Cinema Audience Through E-Commerce In North Maharashtra.

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Abstract:

The aim of this research paper is to determine consumer buying behavior of cinema audience. In previous life stage all audience buying ticket of cinemas at the box office of cinema houses. Early stage of evaluation of cinema industry ,all films are released as the print form. But after evaluation it goes to digital form from print as well as ticketing system take place of manual system.Here ,we study the evaluation and buying behavior of audience.

Introduction:

North Maharashtra includes three districts of Maharashtra i.e. Jalgaon, Dhule, Nandurbar. Early life of cinema industry, only single screen are run by the owners. But now a days, as per requirement of industry and potential of industry ,multiplexes are entered in the market to attract the audience. In single screen trading run the single movie in various time models. But multiplexes gives to variety of flim to audience .audiance have to choice to choose to like what they want to watch in out root. Generally multiplexes have more screen in a single priming and audience can choose to time slot the cinemas.

Objective of the Study:

1. To analysis the online ticketing system used by theatre (single screen) & multiplex.
2. To study of consumer buying behavior about online ticketing as well as off-line ticketing(box office ticketing).
3. To analyze the changes in market condition of film industry
4. To study about cinema theatre collection through online ticketing portals.
5. To analyze box office collection and impact of e-ticketing.

Review of literature:

We take a review of various type of literature such as cine –magazines , magazines which are informative about film industry and collection, review of release films ,second run film and online as well as printed journals.

Research Methodology:

Tn this research primary and secondary data is collected as follows:

1.Primary Data:

Primary data is directly collected from field. We have asked the questions to public who are audience of cinema houses, multiplexes, theatres etc. this can be done to learn people's knowledge, their opinion and attitude towards the cinemas and e-booking.

2.Secondary Data:

Secondary data has been taken from books, websites, cinema houses, multiplexes & e-booking portals etc.

Research instrument :

Questionnaire method:

We have used questionnaire method as a research instrument. This include open ended and close ended questions.

Sample Size: **Total Audience :600**

200 audiences per district of north Maharashtra.

Data analysis:

As per our sample size we have taken 600 audience for this research paper.

Single Screen V/s Multiplex Audience

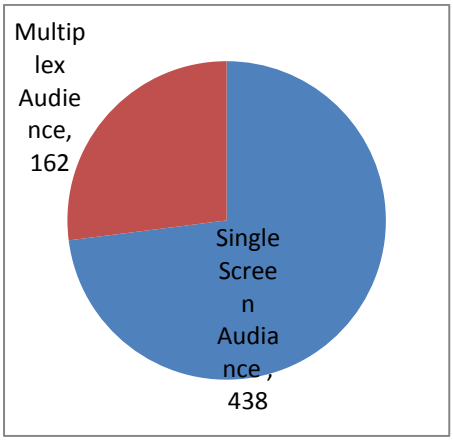
In this research in 600 audience 438 audience goes in single screen and 162 audience goes in multiplex. It is because of there are only four multiplexes and 31 single screens in north Maharashtra.

Multiplexes as follows

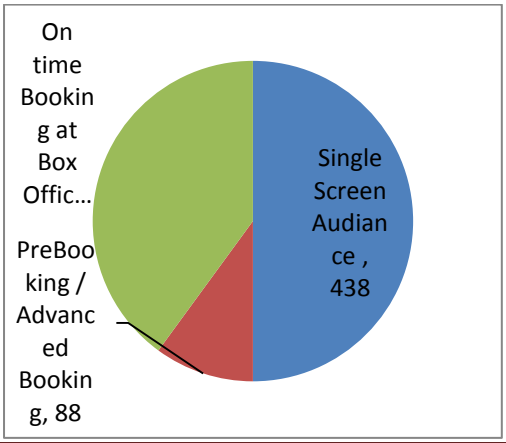
1. Nandurbar :- Miraj Multiplex NBC
2. Dhule :- Carnival Cinemas (Manohar)
3. Jalgaon :- INOX Khandesh Central
4. Jalgaon :- PVR Cinemas

Multiplexes cover only four locations so they have less audience compare to single screen.

Single Screen Audiance	438
Multiplex Audience	162
Total Audience	600

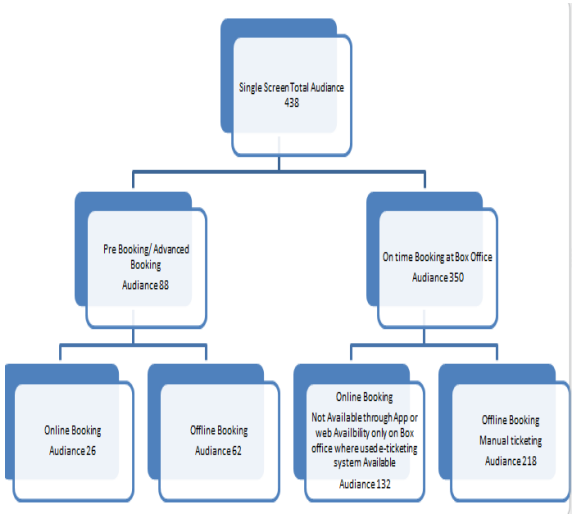


Single Screen Audiance	438
PreBooking / Advanced Booking	88
On time Booking at Box Office	350

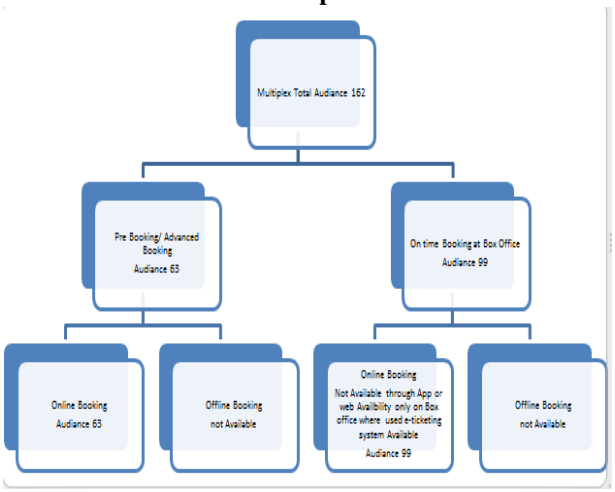


As per research in the audience of single screen there are two major parts frist is the audience who book tickets in advanced there are 88 audience and another general audience 350 who purchase tickets on site / at box office of theater

Tree chart of Single screen Audiance



Tree chart of Multiplex Audience



As per the Another point of View

In single screen, there are mixed audience which are youth and general audience. But mostly general audience preferred single screen. Youth like to watch movie at multiplexes. It means that in audience of multiplexes, the number of youth is greater than any other audience.

Online ticketing portals:

1.Book my show: It is one of the famous portal for e-booking of tickets. This app is Windows base and Android base. So mostly, youth prefer book my show portal for ticket booking.

2.PayTM: It is also the famous app. At the time of d-monitization,this app captured the market and mostly people use it for ticket booking.

3.Ticket new: It is also famous portal for e-booking.

4.Amozon .in: It is also the famous app for e-booking.

Online Ticketing Systems for Single screen as well as Multiplexes

IMPACT EXCHANGE

E-ticketing system at box office UFO ticketing platform (Integrated Media PACT) is a first of its kind settlement platform, launched by Valuable Technologies Ltd (VTL) aiming to install computerized ticketing system with VSAT connectivity in theatres to make the sales data accessible real time to all stakeholders in the film industry.

This will institute transparency and honesty in recording and declaration of ticket sales with the result that UFO ticketing platform equipped cinemas will begin to build the confidence of distributors for movie releases in these theatres, and the government would start to realize higher revenues because of the transparency of the system.

The Company in its role as a settlement exchange is mediating the transaction between the exhibition centers on the one hand, and the government and the distributors on the other hand, in consideration of a nominal settlement fee to be paid by the distributors and the government and with a small equipment fee from the exhibitors.

VISTA Ticketing : It is also E-ticketing system used in cinemas. which do online booking at the cinema houses (at theater Box office)

Findings:

1. Consumer buying behavior changes as per their requirement.

2. Big banner films positively affected pre-booking/ Advanced Booking and online booking.

3. Single screen is struggling to get profit for maintaining their cinema houses.

4. Multiplex is bearing losses at off-season time.

5. Single screen's total figure goes lower day by day.

Conclusion:

1. Single screen wants to change their strategy of ticketing

2. When e ticketing portal gives discount and offers, consumers rush to e booking

3. This research highlights the consumer behavior and human psychology about cine-medias and using of e-commerce Medias for e-booking of tickets for watching movies.

4. This research shows the increasing path of using e-commerce medias for e-ticketing.

5. This research helps theatre business for increasing their audience in cinemas by attracting customers in theatres through different schemes for e-ticketing.

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E-Commerce or Internet Marketing: A Business Review from Indian Context

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BASPONC, Bhusawal

ABSTRACT: ***This paper covenant the conceptual information of seek engine marketing (SEM) or e-trade, cutting-edge and future components of e-commerce in Indian context. This paper speak approximately the top motivator factors of purchasing online. The present enhance could be a treasured addition to researcher and academicians; and useful idea for practitioners, advertisers, and entrepreneurs.***

KEYWORDS: SEM, ONLINE MARKETING OR E-COMMERCE, PAY-PER-CLICK (PPC)

I. INTRODUCTION:

A technology plays **a** significant role in improving the quality of services provided by the business units. One of the technologies which really brought information revolution in the people is Internet Technology and is correctly regard as the third signal of revolution after agricultural and industrial revolution. The critical edge for business today is e-Commerce. The effects of e-commerce are already appear in all area of business, from customer service to new product design. It make possible new types of information base business processes for reaching and interact with customers like online advertising and marketing, online order taking and online customer service etc. It can also reduce cost in managing orders and interact with a wide range of suppliers and trading associates, areas that usually add significant expenses to the cost of products and services. Businesses are more and more using the Internet for commercial behaviors. The ever-present nature of the Internet and its wide global access has made it an extremely successful mode of contact between businesses and customers.The growth of Internet technology has massive possible as it reduces the costs of product and service delivery and extends geographical boundaries in bringing buyers and sellers together.Electronic commerce, commonly known as e-commerce or ecommerce, consists of the buying and selling of products or services over electronic system like internet and different computer network. Purpose is the technology for e-commerce as it offers easier ways to access companies and those at very low cost n order to carry out day-to-day business transactions. Search engine marketing (SEM) is a form of web advertise that companies use to support their products and services on search engine results pages (SERPs). SEM is listening carefully on the effective use of search engine advertisements that appear on the SERP. SEM which allows firm to mark consumers by insertion ads on search engines has established to be an effective audience purchase policy. Unlike traditional online advertising, advertisers pay only when users actually click on an ad when successfully implemented, SEM can produce fixed traffic levels and remarkable return on investment (ROI).

The most online advertising campaign have two main objectives: brand development and direct response. select an appropriate marketing channel ultimately depends on which strategy will provide the greatest ROI. Firm that offer products and services through the Web clearly place to gain from Internet advertising because their probable customers are already online. Non web-based companies may prefer online marketing in order to increase publicity and support brand.SEM allows companies to closely track their ROI from an audience purchase position. SEM deliver ads to users who are already searching for the products or services that an advertiser is offering, meaning that theoretically, they are only receiving eligible transfer. Unlike traditional banner ads, advertisers are charged based on the number of clicks they receive, not on the number of impressions (number of times an ad appears). Also, many marketing campaign put a great deal of importance on branding. PPC ads can be very useful in terms of driving home a brand name because they appear along with search results for thousands of different search terms. SEM is a form of Internet marketing that involve the promotion of websites by increasing their visibility in SERP through optimization (both on-page and off-page) as well as through advertising (paid placements, contextual advertising, and paid inclusions).

This paper deals the conceptual knowledge of search engine marketing or e-commerce, current and future aspects of e-commerce in Indian context. This paper discussed about the top motivator factors of shopping online. The present development would be a valuable addition to researcher and academicians; and useful theory for practitioners, advertisers, and entrepreneurs. The further research areas are; the quality of sponsored ad text, ad position, Search Engine Optimization (SEO), PageRank, yellow pages, bid management etc

II. TYPES OF E-COMMERCE:

It defined the following types of e-commerce:

(i) **B2B E-Commerce:** company doing business with each other such as manufacturers selling to distributors and wholesalers selling to retailers. Pricing is base on amount of order and is regularly exchangeable.

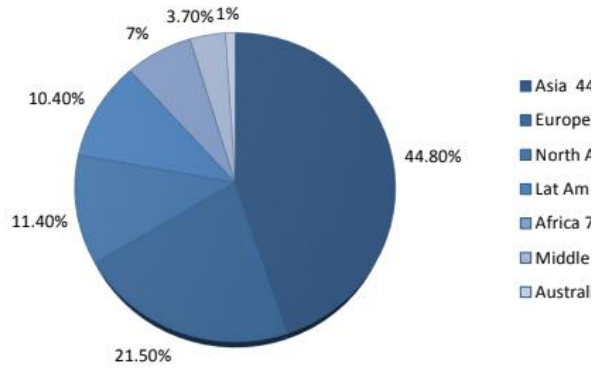
(ii) **B2C E-Commerce:** Businesses advertise to the general community usually through cataloes utilizing shopping cart software. By cash volume, B2B takes the prize, however B2C is really what the average Joe has in mind with regard to ecommerce as a whole. for example indiatimes.com.

(iii**) C2C E-Commerce:** There are several sites present free classifieds, auctions, and forum where individuals can buy and sell thanks to online payment systems like PayPal where people can send and receive money online with simplicity. eBay's sale examine is a big example of where customer-to customer business take place every day.

(iv) **Others:** G2G (Government-to-Government), G2E (Government-to-Employee), G2B (Government-to-Business), B2G (Business-to-Government).

III. E-COMMERCE IN INDIA:

The internetworldstates.com shows that Asia has 44.8% internet users in the world spread by world regions.



Source: Internet World Stats – www.internetworldstates.com/stats.htm

Many countries in Asia are taking benefit of Ecommerce through opening of economies, which is necessary for promote competition and distribution of Internet technology. Large sufficient to have a dangerous collection of 10 to 20 million users to be able to make an impact on e-commerce and e-governance. India will have 30 to 70 million Internet user which will equivalent, if not better, many of the industrial countries. Internet market will then become more significant in India. With the fast increase of internet, Ecommerce, is set to play a very important role in the 21st century, the new opportunities that will be thrown open, will be accessible to both large corporations and small companies.

IV.SHOPPERS IN METROPOLITAN INDIA

It establish that, currently, shoppers in city India are driving eCommerce: These consumers are mainly buying travel, consumer electronics, and books online. And even though payments per online buyer remains low, some 59% of online consumers in metropolitan India already make purchases online at least monthly.

V.SHOPPERS IN NON-METROPOLITAN INDIA

Consumers in nonmetropolitan areas will also help increase growth; unlike online consumers in cities, they are more likely to shop online for goods that are unavailable at local stores. It estimated that ecommerce retailers in India are expanding their offerings to the online population outside metropolitan India and are investing heavily in the infrastructure to support these cities.10 Online kit retailer Myntra.com is already considering order for its products outside metropolitan India: 50% of its sales are outside India's 10 biggest cities. To expand their achieve, for example, multiple retailers are building warehouses outside central locations; testing shipping option that work in country areas; offer payment options like cash on delivery (COD) that provide options for the unbanked; and subsequently marketing these to semi-urban and rural consumers least be as many e-Commerce players in India as there are in China.There will be at least 10-20 winning, large and rising e-Commerce companies in India over the next few years!. I think the successful companies of tomorrow are going to look unlike from the ones that are on the top now. There's going to be 100-200 million new e-Commerce customers that are going to be up for grab in the next few years. A different way to look at it is that in 80% of the e-Commerce shopper of 2016 still are available to be nabbed by e-Commerce sites. And they're going to come from primarily two categories: I) Tier-2 and Tier-3 cities as the logistics and connectivity there get better and II) young people that get jobs/pocket-money and start shopping online.

VI. MAJOR SEARCH ENGINES IN THE MARKET:

By different search engines, means that search engines, portal, and websites who have alliance and who implore bid for paid placement from a single source are treat as one search engine. For example, by successfully order for a paid link with approach exposes a supplier to interchange from several websites, including MSN, Yahoo!, AltaVista, InfoSpace, AlltheWeb and NetZero.

There are various search engines by comfortable/issue such as Baidu (Chinese, Japanese), Bing, Blekko, Google, Sogou (Chinese), Soso.com (Chinese), Volunia, WireDoo, Yahoo!, Yandex (Russian), Yebol, and Yodao (Chinese). with PPC providers, Google AdWords, Yahoo! Search Marketing, and Microsoft adCenter are the three major network operator, and all three activate.

VII. THE ADVANTAGES AND DISADVANTAGES OF INTERNET MARKETING

The Internet can supply suitable in order to customers because of its capability for moment statement, and its accessibility 24 hours a day, 7 days a week. On-line marketing offers more choices and flexibility and, at the same time, eliminates huge inventories, storage costs, utilities, space rental, *etc*.. People tend to associate Internet marketing with direct marketing because company participating in online marketing usually reduced the supply sequence and reduced payment and in service costs. The capability to supply as both a transaction average and a physical delivery medium for certain commodities is a exclusive feature of Internet marketing. Such advantages can be best realized by companies that provide digital products/services such as software, music, news, consulting services, online ticketing and reservations, telemedicine, insurance, banking, stock brokerage, tax, and other financial service industries. Using the Internet as the delivery channel can reduce not only the delivery charge significantly, but also ensure immediate delivery of products/services.

Moreover, Internet investigate becomes an more and more important tool during the purchasing process; more marketers are considering the return too. It's a win-win condition. Marketing department are investing more into online marketing today because it's:

- Attractive to a major section of the demographics for most customer profile. It can successfully reach the aim customer.
- Faster and less expensive to carry out direct marketing campaigns
- Successes are exclusive and repeatable
- Open 24-hours a day
- Cost-effective, in the long run.

Disadvantages:

There is no real face-to-face contact involved in the Internet communication. For the types of products that rely heavily on build personal relationship between buyers and sellers such as the selling of life assurance, and the type of products that requires e- Service, Science and Technology.

Top Motivator Factors for shopping online

- Cash back guarantee
- Cash on delivery
- Fast delivery
- Substantial discounts compared to retail
- Access to branded products

While internet marketing cannot permit prospective buyers to touch, or smell or taste or 'try on' the products, However a analysis of consumers of cosmetics products shows that email marketing can be used to interest a consumer to visit a store to try a product or to speak with sales representatives.Some of the disadvantages of e-Marketing are reliability on technology, Security, privacy issue, Maintenance costs due to a regularly growing environment, Higher transparency of pricing and increased price competition, and worldwide competition through globalization.

VIII. TOP MOTIVATORS FOR SHOPPING ONLINE

Times of India has published that top motivators for shopping online which include cash back guarantee, cash on delivery, fast delivery, substantial discounts compared to retail, and access to branded products, while barriers include inability to touch and try products before purchase, fear of faulty products, apprehension of posting personal and financial details online and inability to bargain. (See Figure 8.1).

Figure 8.1. Top Motivator Factors for Shopping Online

IX. CONCLUSIONS AND RECOMMENDATIONS

This paper deals the theoretical knowledge of search engine marketing or e-commerce, current and future aspects of e-commerce in Indian context. This paper discuss about the top motivator factors of

shopping online. The current development would be a valuable addition to researcher and academicians; and Marketing are reliability on technology, Security, privacy issues, Maintenance costs due to a constantly evolving environment, Higher simplicity of pricing and increased price competition, and worldwide competition through globalization. While considering the abovementioned limitations; advertisers and end-users can effectively use this modern platform to make life easier and faster. In the next 3 to 5 years, India will have 30 to 70 million Internet users which will identical, if not better, many of the developed countries. Internet market will then become more significant in India. With the quick expansion of internet, Ecommerce, is set to play a very important role in the 21st century, the new opportunities that will be thrown open, will be available to both large corporation and e- Service, Science and Technology. Small companies explained that Ecommerce encapsulate many of the dynamics of 21st century of India. The potential huge and intelligence and energy of the entrepreneurs in the sector is impressive. The further research areas in ecommerce are; the quality of sponsor ad text, ad position, Search Engine Optimization (SEO), Page Rank, yellow pages, and bid management etc.

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E- Banking, Mobile Banking and its effects on Financial Institution

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Abstract: - The paper is about the recent developments in the e-commerce sector. Net Banking, Mobile Banking are the most important tools for online financial transactions. It is the demand of the era to use these tools for financial transactions. It is beneficial to users, financial institutions and also to the economy of the nation.

Introduction:-

The technology has changed the nature of the business transactions in miraculous manner. The technology we are using today was just beyond the thinking of the common man before several years. Now-a-days technology becomes the part of our day-today life. We can purchase a paper pin and even a car with the help of technology. The technology has transformed the whole world in a super market.

Now-a-days, Computers and internet are the basic components for business transactions. All the transactions can be performed in electronic mode through telecommunication channels. India has the third largest telecommunication network in the world. The transactions like payment if electricity bills, transfer of funds, cheque book request, bank statement, online shopping, bus and railway ticket booking and lots of other transactions can easily performed through the computers and internet. We do not need to wait in a bank queue, not to go to shopping mall, even need not to carry a single rupee in your pocket for such transactions. Really, technology has changed the life style of the common man.

Objectives of the Research: -

a. To study the impact of Net banking and Mobile banking on Financial institution.

b. To study recent trends in Net Banking and Mobiles banking.

E-Commerce: -

The process of buying and selling the goods and services through the internet and other computer networks is called as e-commerce. The data is changed interchangeably in the electronic form. It is the revolutionary change in the field of business transaction. It has opened the door of international market for domestic and foreign companies. They can spread their business world wide even sitting in a very small office. With the help of nternet and computer the whole world is connected and become a global hub.

Now, the question arises that what is Net Banking and what is Mobile banking? What are the differences in those? A short snapshot is given below: -

Net banking: -

Net banking is a facility given by a financial institution to its customers to perform financial transaction in a secure manner. Bank provides the Login ID, Login Password and Transaction password to its customers to make the financial transactions secure. An account in the electronic form is opened by using login ID and passwords. The above said transactions can easily be made through it.

Mobile Banking: -

Another part that is Mobile Banking means all the financial transactions can be performed by using mobile. It is a recent development in this sector. One need not to visit to the cyber café or internet connected computer for making transactions. He can make all the transactions even he is in journey by using his mobile phone without the internet connectivity.

Role of Financial Institution: -

Financial institutions are the institutions which provide financial services to its members and clients. Those are institutions that accept the deposits and provide the loan, e.g. bank, credit societies, building societies, trusts etc. Also there are insurance companies, brokers, investment funds and underwriters are there who provides the financial services.

They work like blood vessels in the economy of the nation. They have tremendous importance in the economy.

Impact of Net Banking, Mobile Banking on Financial Institution: -

This is the era of computerization. Every field is associated with the computers and internet. Even from a general store to the space station, the use of computer and internet is become so common. Then, how the financial institutions can be an exception to it? Use of Computer and internet has drastically changed the working environment of the financial institutions. The transactions are performed at a very high speed. A fund can be transferred any where in the world within the amazingly short period. Money can be withdraw from anywhere during 24x7.

Financial institutions have to upgrade themselves to cope-up with the speed of the economy and advancement in technological sector. Now-a-days almost all the nationalised and private sector bank are interconnected with core banking facilities.

The banks have to invest huge capital for such up gradation. It is the need of the time to get computerised and be global. The banks have to mould themselves into new shape. They have to train and develop their employees even by accepting their oppose to it. Banks have successfully implemented the core banking system, mobile banking system also internet banking system very effectively.

According to a survey it is found that 7% of the bank account holders are using the internet banking. The ration in the year 2007 was just 1%, a very short period, it has reached up to 7%, in the year 2011. At the end of 2010, only 1% of the bank account holder were registered as a Mobile banking customer. The growth is quiet good but not best. It has huge opportunities to increase the number of customers and the use of Internet Banking and Mobile Banking. Banks have to promote the people to use the internet and mobile banking. We will see ahead the benefits of using Net Banking and Mobile Banking in deep.

Benefits of Net Banking and Mobile Banking: -

01. Reduced Load to financial institutions: - The employees of the financial institutions need not to work hard and not to maintain all the record manually. All the transactions performed through the net and mobile banking are recorded in electronic form, bank just has to verify it and record it systematically. It takes very short time.

Also there are fewer loads for deposit and withdrawal customers. As the ATMs are available very easily, most of the withdrawals are done through ATM and fund can be transferred through net banking.

02. Credit Money Creation: - Net banking helps to create credit money. As the cash is transferred electronically, there is no need to carry the currency of the nation. Therefore currency can be used for long time.

03. Faster Transactions: - As the transactions are done through internet, the speed of the transaction is very high. There is no need to maintain hard copy of each transaction. All the information is saved in electronic form in the computer database.

04. Huge Collection of funds: - By providing the mobile banking services, bank can earn a handsome amount. As the number of customers increase, the income will also increase.

05. Better Services: - By using secure sites and providing high level of security, bank can ensure the customer about the services of the bank. Also they can make aggressive advertisement of their product on internet.

06. Broader Market: - A Survey shows that due to increase in use of internet banking users, there is sudden decrease in the number of branch banking. By using internet banking, any one can transfer the fund therefore, no need to open the branch physically everywhere.

07. Cost saving: - Due to limited expansion of the branches, it is also a cost savings for the banks. The need not to appoint the new staff for that branch even not to spent the huge amount on infrastructure. Also, there is less rush in the bank as the transactions are through the internet, requirement of staff will be lower. In short, it is very cost effective for the financial institutions.

08. Incentives: - Banks can attract the customers by giving some incentive on use of mobile and internet banking. It will increase the numbers of transaction through internet banking and mobile banking as well as the income of the financial institutions.

09. Security: - The transactions are performed through secure websites and highly confidential login and passwords. Therefore, the transactions through Net Banking are getting more popular.

10. Easy to access: - India has the third largest telecommunication network in the world. The user of Net Banking and Mobile banking can access the internet and telephone from any where and perform their transactions.

Limitations of Net Banking and Mobile Banking: -

01. Huge Investment: - The bank has to invest huge amount to provide the facility of Internet Banking and Mobile Banking. It is very costly to update and manage the web site and transactions thereon.

02. Security: - All the transactions are done by using the internet. It is so risk because the website can be hack by the hackers and data can be misused. Though the Login ID and Passwords are provided to the users, those may be hack or even get lost by the user and in such case it is very risky, hacker misuse that.

03. Training and Development of Employees: - The employee sometime are not giving positive response to the change in the organization and sometimes conflict can be happen between staff and management. The banks have to update their employees about the regular technological changes and orientation programmes, training and development seminars, workshops have to arrange regularly, and it proves lengthy and sometimes costly also.

04. Technological Advancement: - The bank has to transform itself into changing technological environment, it proves so costly and time consuming.

05. Technical Expert Team: - For maintenance of the internet and mobile banking services, the banks have to appoint technical expert team. As the experts are rare, they charge high cost to retain in the industry. So, it also becomes costly.

Conclusion: -

Technology has opened the doors of the progress of the economy. We have to cope with the speed of the world economy. If we want our country to be called as 'Developed Country', then we will have to implement the facilities like Net and Mobile Banking. Though they look very small but they are the symbol of progressing nation. The Government of India should have to take the initiative to promote these schemes as the credit money creation is the main advantage for economy as well as the currency of the nation will retain for ling time

Suggestion: -

Every coin has two sides, but we have to accept the change considering the advantages and progress of the economy. The effects of above limitations can be minimised by using some effective tools.

1. Though the investment is high but it is for one time. Once the investment is made, it needs not to do repeatedly. The expenditure are for one time only and can give benefit for long time, it is a Capital Expenditure.

2. By using cryptography applications like encryption and decryption and different algorithm, the security threat can be minimised. Also the customer awareness must be increased about using the Net and Mobile Banking facilities.

3. Training and development expenditure should not be treat as expenditure whereas it is to be treated as investment for the development of the organization. Skilled employees are the real assets of the organization. Organizations should motivate their employees to get trained and should provide opportunities to get promoted or even getting bonus.

4. Technological advancement and technical experts expenses are the expenses of 'Capital' in nature. The best staff appointed for maintainance, will provide best output and superb services and ultimately it results in increase in the customers and the deposit of the bank.

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Technology to Wisdom: Teaching Learning and Evaluation with ICT

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ABSTRACT: ***ICT has changed all systems including teaching learning and evaluation. It has changed the traditional classroom concept into a digital technological smart classroom. It has changed the way of teaching learning and evaluation process. It has changed the whole process of information communication as well as provided advanced and easy way to store, retrieve, manipulate, transmit or receive information electronically in a digital form. ICT has brought three types of outcomes like efficiency, extension and transformation in the field of teaching learning activity. It has proved to be a highly effective and motivational method of teaching learning process. ICT has moved teaching and evaluation beyond efficiency by significantly extending the horizons and educational value of an activity. It allows students to go beyond simply accessing information electronically and promotes learning in more personally meaningful and interesting ways. Along with their greater involvement in their own learning, students can engage authentically with the world.***

Key words: ICT, teaching learning, evaluation, quality education, online.

Introduction

The advancement in ICT has provided several innovative initiatives in the field of teaching learning and evaluation as well. "Evidence indicates today in most advanced countries, most investments are made in the area of information processing and ICT as a key instrument and within the area of education in the learning-teaching process." (Mostafa 680) With the use of ICT, the existing teaching learning and evaluation practices have become more efficient. The teachers and learners can extend new horizons and educational value. And they can transfer conceptions of a subject extensively to a larger group of academic space. At the same time, it has made so many things related to teaching learning process convenient. Dr. Datta Sawant rightly observes,

> ICT saves large amount of time, money and energy making the process of teaching-learning and evaluation more fascinating and all involving with a smoother application. In the country like India, we need to have abundance of resources and at the same time an expert teacher community to implement and to reach at the very rural outset where most of the illiterate population resides. And this target can only be accomplished through the impressive and active use of ICTs in education. (4)

The process of teaching-learning has become more student-centric and its set aim is to produce skilled work-force. The traditional approaches and methods of teaching- learning have witnessed a reformative transformation and its place is occupied by ICT tools such as online smart-boards, projectors, laptops, android systems, PCs, online lectures, tablets, cellular phones, e-readers, web resources and many other software and hardware devices. Education satellites also have made its stake in the process of teaching-learning and evaluation.

Teaching with ICT

Jillian Dellit, Director, Learning Federation Secretariat Australian Education System Officials Committee, Adelaide, South Australia rightly observes in regard to the role of ICT in teaching learning process:

> There are several levels on which ICTs can push the cognition boundaries. New media allow us to represent in rich and diverse ways. This is not simply a matter of learning styles although diverse learning

styles can be supported by ICT. New media enable us to traverse the boundaries of art, science, language and senses. They allow us to represent and simulate experience. ICT allows us to accelerate or decelerate processes for purposes of understanding. Just as an experiment allows us to reproduce, represent or test a pattern of activity in the physical world, multimedia allows us to concept to the learner in new ways. We can improve safely, for example, using technology (the difference between a flight simulator and learning in the air) so that the concepts are transferred, confidence is built through simulated experience and skills are developed, long before the risk has to be taken". (57)

It means that use of ICT has helped teachers and students to have high presentational quality in their work. They are provided with presentation templates, language, grammar and spellcheckers. A teacher can provide class work through a variety of different input devices like QWERTY and concept keyboards, voice-activated controls and touch screens and students can access it very easily and that too at their convenience.

The best cognitive understandings and practice can be captured and communicated by ICTs and applied to the task of growing minds in ways that improve the quality of learning for many, rather than few children. ICTs can give teachers access to great conceptualisers – inside and outside their own ranks – to assist them in planning and programming cognitive development. Best of all, the interactive capacity of ICTs provides more opportunities for students to engage as creators and manipulators in the learning process.

ICTs support teachers in bringing together aesthetic as well as scientific considerations, allowing overlying knowledge and meaning with skill and competence. "Teachers can, for example, enable students to design in ways that demonstrate perspectives difficult to create in classroom spaces, which reveal new ways of seeing; we can bring serious research more easily into creative writing or we can incorporate story treatments into science using multi-media to enrich and stimulate better learning outcomes". (Williams 1999).

Learning with ICT

With ICT the learners learn at different paces. They can work at their own speed and convenience. ICT has certainly enhanced "the quality of education and contributed to the cognitive, affective-social, and psychomotor domains of learning". (Volk 1) It has proved to be a highly effective and motivational method of learning. Although its use at the initial stage was limited as a social media tool only, now a day, its use is increasingly growing step by step for multifaceted and multilayered works of learning and presentation. The computer and other ICT devices are become as learning tools. Moreover, modern researches have stated that special attention is required when choosing the appropriate ICT tools to support the learning of different groups of learners. ICT has also directly affected the group of learners with special educational needs such as those of poor vision, hearing, language understanding problems. School/college-and leisure-related activities both affect students' ICT experience and knowledge, emotions, competencies, and attitudes related to ICT use.

There are many ICT devices that contribute greatly in teaching learning activity; they are software and symbols. Many programs exist which can automatically and effectively help in teaching learning projects; they are personality development program, communication skills software, language grammar software, speech software, morphing software and many more. Virtual worlds typically refer to immersive, computer-generated environments that give the illusion of being situated in three-dimensional space. Virtual worlds facilitate interactive chat which allows to communicate with each another synchronously. "There are several features that make these environments particularly relevant for people with learning disabilities". (Standen, Brown and Cromby 298)

Sheehy and Rix identified five key features of successful learning in inclusive classrooms. They are:

1) Prioritizing social engagement – social interaction is treated as an important means of knowledge development.
2) Presenting materials flexibly in a range of modalities – learning activities are presented in different ways (visual, auditory and kin aesthetic) to make subject knowledge accessible to a diverse range of learners.
3) Scaffolding student learning – learners' understanding is developed through planned scaffolding of the subject's cognitive and social content.
4) Providing authentic activities – teachers use activities which learners find meaningful and which educators consider appropriate to the curriculum area.

5) Participating in a pedagogic community – Teachers form links with others who have a shared view of how their students learn about particular curriculum area. This gives them a clearer understanding of how to teach a curriculum subject and an understanding of why they are doing so.

Along with the regular learning, 'On-Demand learning' has also been a trend being developed now a day as the concept of learning has been changing drastically; it has broken all boundaries of age, space, pace and resources. ICT has provided a greater facility to learn anytime, anything, anywhere.

Evaluation with ICT

ICT has bought several innovative initiatives in the field of examination and evaluation. Online examination makes the assessments and evaluation system learner centric as it can be conducted at the convenience of the system. ICT has made examination system more flexible and learner oriented. It enabled online and/ or on-demand examination system has become a need of time now. At higher education level, allowing students to appear in the examination as per their convenience and preparation would greatly enhance their performance. Allowing students to take more than two exams once-a-year would lead to a more learner-friendly system and would help in reducing the stress of the learners. Computer based concept mapping with automated scoring can be used for summative assessment of critical and creative thinking about complex relationships.

Now a day, ICT enabled examination On-Demand has become need of time. It is an urgent need to make the examination system also more flexible and learner friendly. It is possible by using the ICT in evaluation system. In India the National Institute of Open Schooling (NIOS) at school level and IGNOU at Higher education level have very successfully implemented the scheme of On-Demand Examination which is basically a blend of ICT with the traditional system of examination. In this scheme individualized question papers are generated online on-the-spot just few minutes before the examination. This comprehensive ICT enabled system of examination has a number of benefits to the students. It provides opportunity to the learners to appear in the examination whenever they feel prepared for examination after completing the minimum eligibility criteria. It also helps in reducing the possibility of malpractices in the examinations as each student may get different set of question paper. It helps in minimizing the fear of failure in the examination and thus saving the distance learner from frustration and depression. It may help in improving the pass percentage of students in the university by giving chance to really motivated and prepared students to appear in the examination. It can improve the reliability of examinations and make evaluation a continuous process. It can also reduce the load on the term end examinations of the University. And it can also measure student's feedback as to increase the level of performance as compared with students taking the same tests on paper.

The use of ICT in evaluation system provides the facility of "instant testing-instant result", the online examination and evaluation may be a viable solution. The higher education institutes, particularly the institutes holding entrance examinations have started using ICT for this purpose. The IGNOU has also developed a prototype of an online evaluation system called e-test. The back end operational strategy includes development of a multipurpose digital question bank, a portal for online registration, online generation of question paper, online evaluation and instant declaration of the result. For this purpose a specially designed multipurpose question bank having different types of questions are to be developed for different courses. The front end operational strategy includes online registration for e-test, instant generation of individualized & unique question papers, online examination and online instant evaluation and declaration of result.

This innovative scheme of online examination and evaluation is not only cost effective but highly learner friendly. Spontaneous generation of question paper online, immediate evaluation online and immediate transfer of student's data and their records to the Evaluation Division saves time. The possibility of malpractices and use of unfair means during conduct of exam and evaluation of answer sheets gets automatically solved. There is no possibility of leakage of question paper as the questions are generated instantaneously through random assortment and appear one by before the student,

Multipurpose Digital Question Bank is also one of the unique feature of online evaluation system. A good question bank can be prepared by a group of subject experts for the multiple use by the students, teachers and evaluators for effective teaching-learning and evaluation purposes. Using ICT, digital question banks can be developed more conveniently in a cost effective way. Digitization of question bank can also result in significant savings in time, effort and

financial resources required for setting the question papers and assignments. A digital question bank can have multipurpose utility in teaching-learning and evaluation and can be used by the students, teachers and the institutes. Such banks allow a great deal of flexibility into assessment practices and distance teaching. The advantage of digital question bank is that the questions which work out well in practice can be reused in a number of different situations.

Conclusion

To conclude, the use ICTs have changed the overall teaching scenario. Use of ICT can qualitatively improve cognition by conceptualising more creatively teachers' knowledge and by tailoring learning resources to meet the particular needs of the students at every stage of his or her education. in the same way, use of ICT as a prosthetic does not merely solve learners' problems and remove all learning barriers, but also focuses on what the learner lacks, and highlights how ICT can add entertaining and effective learning experience. And also the use of ICT has brought drastic changes in examination and evaluation system at any level of educational institutes as to overcome the shortcomings of the traditional system of examination. Many examining bodies are already using the ICT for both academic and administrative purposes in the field of examination and evaluation. But need is to intensify this effort in a collaborative manner.

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Teaching English Literature with ICT

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Abstract: *Since ICT has been healed as an incredible tool of teaching learning, it has reached to almost all spheres of life and education, it has revolutionised in the field of teaching learning literature as well. Teaching literature with ICT has become more interesting, impressive and effective now a day. Certainly, use of ICT in a literature classroom helps expand the horizons of both teachers and students. It helps students address human values, ethics and develop a better human being. Along with developing all four language skills such as listening, speaking, reading and writing skill, it has also helped students develop life skills such as to appreciate other beliefs and culture and build critical thinking skills. ICT is being proved to be effective in helping literature teachers achieve goals beyond expectation. The present paper aims at addressing the issue of teaching learning literature with ICT by discussing the way ICT tools can be used in a literature classroom.*

Keywords: ICT, literature teaching, poetry, drama, prose, living experience.

Introduction: Generally, teaching learning literature is underestimated as not being a vital class or useful in today's mechanical busy world. It has been proved during the course of time that merely science, math or commerce may not make one successful and happy in life. Literature too has proved to be vital in making life excel. It's true that art and literature develop one with the faculties of feelings, emotions and passion which is very vital and essential to lead a happy, peaceful and successful life appreciating the worth of life. Literature is that important area of teaching learning which provides one an opportunity to think outside the box, strengthens our minds and encourages growth. And therefore, it is worth to focus more on literature teaching to students equal to any other subjects of science and commerce as well. Since literature is made up of the variety of genres like poems, novels, plays, short stories, it is not focused seriously in the classroom and ignored as subjective course to be read by students at home. Actually, genres of literature consist of the elements like feelings, emotions, passions, music, actions and dialogues. And therefore, these are skipped as abstract. Many a times, due to the lack of resources, time, expertise and environment, these elements are not generally focused during the actual teaching of English literature.

ICT, that has proved to be a powerful tool for adapting teaching learning inside and outside traditional classroom, can resolve the problem by using optimally ICT in the English language and literature classroom. This innovative teaching strategy can surely make teaching English literature more interesting, more energetic and more lively and that too with less efforts on the part of teachers. Bibha Devi rightly observes,

> The role of technology is significant in language teaching, especially in English language teaching. The use of technology enables English language teachers to make the learning experience motivation for learners by providing them enjoyable activities. In addition, use of various multimedia tools helps learners use various learning styles and develop creativity and critical thinking. They make them acquire and practice the language skills. Some of them also promote collaborative learning. They provide automatic examples of the target language and culture." (6).

It is not so much difficult to become familiar with ICT-based teaching learning tools. There are so many instructional strategies and facilities available at one's fingertips in regard to the use of ICT. There are so many applications and facilities that can be used to facilitate the literature classroom. One tech tool that literature teachers will find extremely useful is the Kindle or its App, which is adaptable to iPhones and tablets. *PoetryDaily* helps literature/poetry students read, understand, and discuss works and also helps them understand the genre in general. *SparkNotes* offers the opportunity for students to read general analyses of great works in literature, character

overviews, and book summaries. *PocketFiction* provides access to a vast array of unique literature, the ability to read others' works and review and rate them, and the ability to bookmark favorites. *GoodReads* assists students and teachers in locating books that they enjoy and allows them to share this literature with others. As teachers, let's try to understand and learn to use ICT devices into the flat and dreary teaching of English literature in the classroom, covering different genres of English literature like poetry, prose and drama.

Teaching Poetry with ICT: Poetry can be taught in the classroom as a recitation art with the help of ICT by using VCD or internet. A poem can be taught by playing the devices for visuals (images), audio (sound) and background music to feel the melody of the poem. The standard recitation of the poem by native speaker of English language may be taught used for teaching students the correct way of recitation of the poem. Students and teacher's voice also can be recorded for the purpose of evaluation so as to improve their ability of reciting the poem. The combined effect of the 'visual' and 'hearing' would make students experience what is being taught. The themes, images and movement of the poem can be discussed through different slides which are innovative and effective.

Teaching Drama with ICT: Drama is usually called a play as it is meant to be performed rather than read. Since drama is meant to be acted out in front of an audience, it's hard to fully appreciate it by looking only at pages of text. While teaching, drama is the one given the least time in most classrooms. It is only read the same way one reads a novel. Students can understand drama best when they will be exposed to the play's movie adoption or are encouraged to perform out scenes passionately in classes. Audio of instrumental music related to the drama to be taught may be used for playing background music to create different moods of the drama. PPT of natural scenes related to the drama may be used by preparing background scenery to present different seasons of the drama. It can become a pleasurable activity with use of ICT. A teacher can use as many resources as he/she has available at hand. A good kind of power point presentation, different types of online resources can be used while teaching plays. One may use pictures, images from Google search. YouTube videos, lectures delivered by experts can be played, or can have an online workshop or webinar on the same topic. This creates an interest among students and causes to change their habits of learning. Use of ICT would "accomplish the dual function of literature to edify and give pleasure. For instance, BBC has a great collection of Shakespeare's plays which can be integrated in the library." (Jain 51)

Teaching Prose with ICT: The most typical varieties of prose are novels and short stories, biographies, autobiography while other types include letters, diaries, journals, and non-fiction. Prose can be taught in the classroom as a reading art with the help of ICT. Movie adaptation or documentary of the novel to be taught may be used for showing it to students to make them understand it in a better way. Slide shows and presentations can be used to teach themes, characterization, historical context, narration. YouTube can be used up to certain extent for various purposes.

Videos of various stages related to a short story to be taught may be used for presenting its different stages to narrate it. A Digital Board having moving-text may be used for reading comfortably the long text of prose in large font size to avoid stress on eyes occurring due to the small font size of the printed text. E-newspapers/e-magazines/e-journals may be downloaded for providing them to students to inculcate in them the habit of reading varieties of prose published in them without carrying heavy printed text books. Blogs of various eminent authors of English may be used for teaching students the latest articles to make them aware of the contemporary trends in writing.

Conclusion

To conclude, the use of ICT increases the scope of teaching literature as well. It provides quality learning materials and creating autonomy of learning. The use of ICT in the teaching of English literature can make it interesting for students, teachers, and research scholars. Thus, ICT is a fitting platform of convergence for living experience of literature. It can also underline the importance of the literary genres as well. It can also "bridge the digital divide" (Jain 52) between diversified population of India and help building up human resource.

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ICT and ELT Teachers in Yemen and India: A Comparative Study

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Abstract: *Development of Information Communication Technology (ICT) has brought new avenues to reframe of the language learning mechanism. On the contrary note, ICT has also brought new challenges to language learners as well as teachers. ICT is widely noticed in all areas of curriculum. Yet, most teachers would acknowledge, there is still much more to do to make effective and efficient use of the technology. ICT has initiated new possibilities into the classroom. Whereas, ICT Based Teaching is not famous in teaching ESP in Yemen, it dominates the teaching of the ESP in India. The classroom and the curriculum are based in the ICT in India. The language laboratory which is equipped with computers is the environment to teach ESP as well as the course book is soft copy version.*

Keywords: ESP, ELT, ICT-Based Teaching,

ICT stands for Information and Communication Technology. It is defined as the "diverse sets of technological tools and resources used to communicate and to create, disseminate, store and manage information" (M. P. Mishra as cited in N. G. Pachpande 41). The development of ICT has brought new avenues to reframe the language learning mechanism. On the contrary note ICT has brought new challenges to language learners as well as teachers. ICT is widely used in all areas of the curriculum. Yet, most teachers would acknowledge, there is still much more to do to make effective and efficient use of the technology. English language is not an exception, the development of Information and Communication Technologies in English is seen as a progression, a gradual evolution, rather than a dramatic leap.

A gale of change is blowing in the English Language Teaching. This changing reaches all components of the teaching/learning process from curriculum to teacher, student and classroom. Now a day's ICT has initiated new possibilities into curriculum, English course books are provided with CDs and DVDs. These CDs and DVDs are used to introduce conversations, grammatical structures, vocabulary and pronunciation. The development in ELT materials facilitates teaching and learning foreign language. However, these advanced materials require a well-qualified teacher to introduce it well with its equipment. In the other words, ELT teacher in these days has not to be only a professional in the foreign language; he has to be also professional in using electronic aids such as computer and internet to select additional materials for his students. Furthermore, teacher needs to develop his abilities in both language and technology to update the fast development in the knowledge regime.

Teacher now uses new tools in his classroom, such as computer, digital screen, LCD projector, CDs and recorders as well as new materials such as movies and authentic conversation. This changing in equipments and materials requires a teacher with new mind. Today, the traditional teacher has no place with his stick in foreign language classrooms. The place demands the teacher to enter the classroom with laptop and smart phone. B. Patil states that the teacher needs to perform a number of roles to face the challenges of the 21st. These roles are as follow: "Make difficult thing easy, adopting a participative approach, planning the teaching and pursuing to see whether it is achieving the desired result. "Plan your work and do your plan" are apt in this context, taking appropriate decisions considering all factors as the dealing are with human beings who have complex feelings, ambitions, desires, habits and idiosyncrasies, major of teaching/learning process. As a manager the teacher should possess effective communication skills to transect communication effectively. As a manager the 21st century teacher should be aware of the latest innovations, researches and experiences in the field of education. The teacher has to identify and utilize the appropriate teaching, learning strategies, methods, teaching facilities, teaching aids, and teacher as promoter of the educational system." (30)

The teacher now uses the PPT to introduce his lesson. Consequently, the lesson preparation stage is totally different from the traditional one. Instead of using notebook, he uses computer as well as the lesson producing stage itself is changed. The teacher today may use LCD projector and TV screen instead of board. The teacher is no longer the only source of

the information. Students can get the update information from websites and this is another challenge for the ELT teacher. Therefore, the teacher should update his knowledge to keep his position in the ELT classroom as one of the sources of information. Punjabi introduces the objective of ICT in teacher education as follows:

- ICT is a gateway to the world of information to keep teacher educator regularly updated.
- To make teacher educator innovative and aware of current trends in instructional and evaluation methodologies.
- To feel the teacher educator empowered while dealing with larger masses with dissemination of ideas.
- To make the teacher educator a facilitator who can interrelate technology with human, pedagogical, social, financial, ethical, scientific issues and their deep understanding. (48)

The students are the corner stone in the teaching learning process. They move to independent stage in getting information. They are sometimes in advance stage in using the ICT devices rather than their teacher. All types of information are available on the websites within only few seconds students can access to the website anytime and anywhere. U. Bari states that "educational programmes gave through the web (electronic media) motivated the students to learn and sustain their interests in the process of learning" (32). Moreover, ICT leads to change the style of learning. The student can listen to lecture from his home. However, the development of technology has sometimes negative impact on the students. They spend a lot of their time in playing computer games and do not take the benefit of the knowledge on websites. Therefore, the teacher has to provide his students with required and useful websites that will help them in their learning. He can design electronic-based home work to benefit the students. Sunilkumar argues that "it is necessary to study how students' brain work to enhance the learning" (94).

Now a day, classroom is being influenced by the use of the ICT in the educational programme. Traditional classrooms are only equipped with chair and board are no longer applicable to teach foreign language. At present, virtual classrooms are required to teach/learn foreign language. Virtual classroom is equipped with computer, internet, data show and digital screen. V. Bhusari describes virtual classroom as "a teaching and learning environment located within a computer-mediated communication system. It is an online learning environment that contains all course materials. It provides opportunity for teaching and learning even beyond the physical limits of the traditional classroom walls" (38). Virtual classroom can be described as an electronic environment which depends on computer and internet as the main tools of the teaching/learning activities. In the other words, virtual classroom helps web-based teaching /learning in which teachers and learners can communicate with each other without physical presence is required in the traditional classroom. The virtual classroom enhances the student centric-learning and gives the flexibility of learning with facilities such as online calendars, online grading books, examinations, emails, instant messages, chat rooms, board and file transfers are available to the learners.

This development in the teaching learning process demands improving of the ELT methodologies. Traditional methodologies are no longer applicable to the teaching of foreign language in the 21st century unless they make use of the modern technologies. Dived Sausa as cited in Sunilkumar states that, "Yesterday methods will work for yesterday's students. But the student brain today is quite different from that of student of 15 years ago" (94). ELT teachers now days, depend on the modern technologies to introduce their foreign language lessons. They use computer as the main device in the classroom and power point (PPT) instead of using board and marker.

In the early stages of teaching/learning foreign language, teacher uses ICT to introduce his lesson. ICT Based Teaching enables the teacher to make his teaching more interesting and authentic. For example, the teacher who uses Direct Method in the ICT Based Teaching, when he teaches new vocabulary, he will use a CD which contains the picture of the new word with the native speaker pronunciation of the words. To do this he will use computer and data show so he will save time and effort and language teaching will be made more interesting and authentic. The role of the teacher in the Direct Method in ICT Based Teaching is totally different from the role of the teacher in Traditional Direct Method (TDM). The teacher in the TDM does all the works by himself. He brings real objects of the new words or pictures. He pronounces these words and then asks the student about the new vocabulary. What is this? The students answer; this is a pen and so on. When teacher uses the ICT Based Teaching, he will only bring CD which includes the entire activity of the lesson. He can offer the new vocabulary by introducing a picture of that word with native speakers' voice.

To teach four skills, teacher used authentic materials such as movie, conversation, newspapers. To teach listening, he can use recorder and turn on the conversation on the CD and ask his students to listen carefully. If the students are familiar with the content of the conversation, he will ask them to answer the questions in the CD. If the student finds the conversation difficult to understand the teacher would remove the difficulty by repeating the conversation in his own voice. To develop speaking skills the teacher can display on the data show some pictures which could be used as a basis for conversation or storytelling. Reading skills may be learnt by using internet. The teacher can access some websites of national and international papers or magazines and give the student the chance to choose the paper or magazine to select a topic from them to introduce in the classroom. This work may be done in groups or

individuals. After that the teacher may ask her/his students to write their notes about the topic they discuss and then write the topic in their own language.

The teacher just needs to switch on his laptop to start his lesson. However, the CD can introduce typical English lesson, the teacher still be the master of the teaching/learning process. Since the teaching/learning process is a living process, it requires the teacher to demonstrate it. He is the only one in the classroom to decide whether the student understood the activity or not, whether there is a need to repeat the work again or not and sometimes he could explain the point to remove the difficulty. Student themselves will keep a good arrangement in the classroom.

In the higher stages of education programme, ICT Based Teaching plays an important role to enhance the education. It enables the teacher and students to update their knowledge with the new issues in different disciplines. Therefore, ICT Based Teaching solves the problems of the shortage of the teaching materials especially in rural areas. Only by access to the different website teachers and students could get the information they are looking for. Thus, the ELT teachers become a course designer. Consequently, the teacher must be analyst to choose the materials that meet their students' needs. The door becomes open wide in front of the teacher to improve her/his work. He can use a variety of activity to make her/his teaching fruitful and interesting. These activities may include different learning games and songs. Immediately, he can access to the applications that introduce different types of language games to select the suitable one for her/his student. Furthermore, he can design his own activity by the help of the computer. Such as: asking the students to go to the website to read about the topic he chooses to be the homework.

In higher education ICT Based Teaching introduces a new thinking and facilities. The strategies of higher education are influenced too. The thinking is now how to reach the higher education facilities to each area in the country even in the in developing countries such as Yemen. Students of rural areas, by using the ICT be able to complete their higher education from their native places. They can do all the admission procedures from their home. They do not need to travel to the capital cities for admission. Their opportunities to complete their higher education are increased. Online universities in some countries like, IGNOU Indian Grading National Open University in India, offer these facilities. Therefore, their chance is increased not only to complete their higher education in their country, but they can study in some universities abroad.

ICT Based Teaching becomes common in the higher education. The teacher uses the PPT to introduce her/his lecture. He designs electronic based activity such as language games, dialogues and movies. The teacher also asks her/his students to do their homework online and send it by email. In the other words, all the classroom activities can be electronic based. Diagnostic testing is another benefit of ICT Based Teaching in the higher education. The diagnostic testing is totally different of the traditional testing in tools, design and correction. The computer is the only tool the students use to answer the questions. They don't use pen or paper. In this type of testing closed-questions are used rather than open-questions. The teacher presents his questions with the answers to upload in the computer. Therefore, the student can get feedback at seconds of finishing the exam. Consequently, this type of testing saves the effort and time. N. Pachpande mentions some of the advantages of computer based tests as follow:

- Computer based tests required the computer systems and software.
- It saves available times of teacher and student.
- The students can use the data available on school websites at anywhere.
- Computer based testing are entertaining and motivated for students.
- Students get the feedback immediately after completion of test.
- It is economical as compared to paper pen test. (41)

Web-Based Learning is one of the crucial applications of ICT. By accessing to the websites the students can get the information they looking for. Today knowledge becomes available on the students' hands especially, in the rural areas, where the big libraries are not available. The learners of the country side by the help of ICT can get all the types of the information in different disciplines like the students of the capital cities. Therefore, the crowded in the central universities will be reduced, since the information becomes available at the student home.

E-learning is an advanced application of the ICT in teaching/learning process. It is the use of the online in the educational programme. Wadhwan states that "e-learning is a broad term like online learning or online education which general refers to the web-based learning. E. learning plays an important role in the improving of distance learning but sometimes they are used as a synonymous terms" (52). In the age of globalization, e. learning will replace the outdated traditional education programme. Wadhwan introduces the application of the e. learning in the various types of ELT methodologies used in higher education as follow:

- Multimedia is highly useful in research, teaching and learning.
- In research, review of related and earlier studies can be done through various research engines.
- Panel discussions, presentations by learners and teachers, submissions of assignments, feedback from students.
- Recording for future, workshops, multiple choice tests.
- Guest lecture from distant university experts.
- Remedial teaching, training the absentees, disseminating instructions.
- Easy evaluation methods, online objective test, text-based projects, experimentations.

- E-merging learning workshops etc are some of the easy tasks where e. learning can take place.
- Hypermedia, interactive multimedia, multimedia presentations, virtual reality community.
- Personal information management programme, departmental information management programme.
- Documentation of teaching materials, etc. will also enhance applications in higher educational system. (52-53)

Thus, e-learning depends on different electronic tools such as internet, EduSat, CDs and DVDs, which enable the student to study at any time and in anywhere.

To conclude, ICT-based Teaching is still to be popular in teaching ESP in Yemen. However, it is clearly adopted in India. Classroom and curriculum based on ICT and computerized language laboratory create learning environment to teach ESP in India. Lecture method and Elective Approach mostly preferred to teach ESP in Yemen, in India ICT added to those two approaches. Students listened to ESP teachers to improve their listening skills in both Yemen and India. However, in India ICT is added to improve students' listening skills. The students get exposed to authentic materials from internet sources too. These materials assisted to develop learners' listening skills in India. Thus, Indian students do not encounter the same problem as the Yemeni students face.

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MOVING FROM TRADITIONAL LIBRARIES TO MODERN LIBRARIES: A REVIEW

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ABSTRACT: ***In this paper we have focus on the comparison between traditional library and modern library. We have reviewed few research papers and other available material to study the transformation of traditional libraries to the libraries of modern era. It is learned that traditional libraries faced many problems related to their services which were easily solved by the use of ICT in modern libraries which saves time of the library staff and the readers. Many advance and fast services have been introduced in the modern libraries to help each and every user/reader to get the information resource or other library service he/she needed. So it is the challenging to the modern library staff to be technically updated and fast enough to serve the readers of various ages and stages like children, women, old citizens, researchers, student and teachers, industries and organizations etc. Library staff along with their conventional work should adopt the new technology skills to stand and give better services in this modern age.***

KEYWORDS: Traditional library, Modern library

INTRODUCTION:

Libraries have a very old traditions and functions to support information society to develop culturally and academically strong society with the help of public, academic and special library systems. Libraries in earlier period were collecting information in different forms like clay tablets, papyrus and due to invention of paper knowledge spread in the form of books and thereafter manuscript libraries transformed into print media libraries. In above all cases, libraries provide a useful reference service to the users form the decades in the traditional as well as in the digital libraries. Moreover, libraries provide information as per the demands of users and the technology is used in the changing environment to support the different activities carried out in the libraries. However, as the roles and functions of the libraries goes on changing from traditional print media to digital, the information is now being made available on the desk top of users. Thus, major changes in the libraries have occurred due to adaptation and use of newer technologies [Pradeepkumar Chack et. Al., 2017].

Traditional libraries had printed books and manuscripts in their collection and are not shared with other libraries or readers. They had to visit the library for getting the books or documents needed on loan. But with the introduction of Xerox, computer printing and e-books they started sharing of the books and other documents with the other libraries readers. Large numbers of non-book materials were collected in the library, such as microforms, audiovisual aids etc. after the II World War. After introduction of computers in library several other documents like tapes, floppies, CDs etc were collected and shared with the libraries.

REVIEW OF LITERATURE:

Traditional library services are insufficient to meet the changing information needs and changing information seeking behavior of the users. Hence,

libraries have to offer digital resources to render qualitative, pin-pointed, exhaustive and expeditious services to the readers. The development of computers, communication technology and networking technology has led to the development of electronic devices that have transformed the traditional libraries into digital libraries [Seema Sood, 2014].

Traditional librarians differ from the digital librarians in the way they provide services. Traditional librarians provide services focusing on printed catalogs and books. Nowadays, librarians having conformed in the digital era are supposed be able to use the newest technology, to organize and diffuse data in a digital form, to manage digital material, to provide information services in a digital form, provide digital reference services, to anticipate how technology concerning the library can be improved in the future and so on. Academic librarians are supposed to have various technological skills in order to provide services to students. We will present the most important skills that librarians need to have according to us [Sofia Adamou, Lamprini Ntoka, 2017].

The library is the main information centre which can make use of the fat development IT for the benefits of mankind as a whole. The librarian's preference of IT should include all those technologies which are expected to be used in the library activities/ operations and other library services for collection, processing, storage, retrieval and dissemination of recorded information, the fast developing information technologies have showered almost every areas of application including libraries [. A. Vijayakumar & Sudhi S. Vijayan, 2011].

Information activities have undergone rapid transformations from conventional methods, consequent upon introduction of new technologies. This summarized with the help of a table [Kannappanawar, B.U, 2004].

Information Acivity	Conventional Method	New Technology
Generate, Originate	Writing, Typing	Word Processing, Text editing,haracter Recognition, voice Recognition
Preserve, Store	Manuscript, Paper-Print Media	ElectronicPublishing, Magnetic Storage,Videotext, Tele-text. Computer disk, ROM
Process	Classification, Cataloguing, Indexing	Electronic data processing, Artificialintelligence/ Expert systems.
Retrieval	Catalogues, Indexes	Database management system, Information retrieval off-line, On-line.
Disseminate/ Communicate	Lists, Bibliographies, Abstracts, Hard Copies	Electronic mail, Electronic document delivery, Computer conferencing
Destroy	Physical weeding	Magnetic erasers, Optical erasers, re-use the medium

COMPARISON OF TRADITIONAL LIBRARIES AND MODERN LIBRARIES:

I. Traditional and Modern Library Services:

1.The traditional libraries were located in temple, museum etc and are not well furnished. On the other hand now days the modern libraries are not only located in buildings but well furnished.

Traditional libraries provided services to the society and students of school, colleges etc. Modern libraries are servicing to the students, academies, laboratories, researchers.

2.,Traditional libraries were provides the books and magazines but modern libraries provides the books, Magazines, journals, e-journals, microfish, cards, CD, DVD, other e-resources etc.

3.Traditional libraries used the old manually written catalog card records. But modern libraries use the online catalogue cards.

4.Almost all library services were provided manually in traditional libraries but modern libraries are 50% to 80% automated.

5.Reference services in traditional libraries were manual. But modern libraries provide online databases and e-resources now days.

6.Since the catalogue and other records are maintained manually, they are less protected and

multiple copies were not possible. But in modern libraries we can make multiple copies of the records and other files and protect it on other computers or on cloud.

7.In traditional libraries the library staff need not be well educated so they are not so efficient in work but now days every modern library needs a well educated staff with the knowledge of computers and IT.

8.The traditional library services were more time consuming but now days the modern libraries provides fast services due to the use of computer and IT.

II. Traditional and Modern Library Staff Functions:

Traditional Library Staff Functions:

1.Library staff in traditional libraries performed functions in acquisition, cataloguing, classification, periodical section etc.

2.Acquire books, periodicals, journals from vendors.

3.Acquire quality of books in library keeping eye on the available budget.

4.Prepare budget for the purchasing of books & other materials in library.

5.Processing, cataloguing, classification of reading materials available in library

6.Provide reference service; information services, indexing and abstracting etc. .

Modern Library Staff Functions:

1. Identify the user's needs and get the information resources for them.
2. Provide easy access of reading materials to users from available e-resources.
3. Subscribe e-resources, online journals etc for certain users.
4. Provide computer, internet or wi-fi facility to users.
5. Make automatization of the library by using suitable library software
6. Keep update with the latest technology and modern age.
7. Provide OPAC service to readers
8. Take backups of the important data and information needed by readers time to time.
9. Develop and update a library website to serve and stay connected with online users.
10. Provide CAS, SDI services to the readers.
11. To develop multidisciplinary skills, technical knowledge and human skills like usability and adaptability etc.

Ultimately we can say that,

Traditional Libraries	Modern Libraries
Libraries focus was on books	Libraries focus is now on readers /users
Libraries was used for getting information	Libraries are being used for creating and sharing information
Libraries were used as silent study space	Libraries are being used for Interactive learning
Libraries were all about finding information	Libraries are about evaluating and using information
Modern libraries provide seamless access i.e. "access to anyone" "anytime" and "anywhere". Today's libraries are being described as places to get unrestricted access to information irrespective of format [S A Rajput, 2017].	

CONCLUSION:

We have reviewed in this paper the path from traditional libraries to the modern age libraries. We found that what problems the traditional library staff had faced and how the modern librarians overcome those problems by the use of computer and ICT and other online services.

It is a severe need of the few old libraries to adopt the new technology and services to better stand with the other modern and well developed libraries so that they will also grow rapidly and serve the library users more efficiently. The library staff should also keep the vision of the traditional libraries in their mind and settle with the changes in society and technology.

Modern libraries cannot replace the traditional libraries fully but it can add new in the services provided by traditional libraries. The modern library will help in spreading of information to the globe.

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Study of E-library and Traditional library services

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ABSTRACT: ***Traditional data and Digital data and completely different with each other. Traditionally the maintenance of library is very critical. To protect the old books and keep it in shelf for long time is very difficult. Electronic copy of book and material is very easy to maintain and store. Accessing books electronically helps to researchers, students and readers since OPAC type of services. Due to advanced search method the material or topic from e-book is much and more fast. E-library becomes more popular due to its innovative services and lot of benefits to users. Number of Internet users are more than traditional library users since the digitization becomes more popular. Big Data is one of the new concept in library world and service for bid data are easily available on cloud***.

Keywords : *Big Data, OPAC, Digital Library*

Introduction :

Computerisation in traditional library was very less due to innovative Software. There was the software at that time with very less security services to databases. Book record was maintained using card system and was time consuming. Issue and return services of library was maintained in registers or by performing simple entry using database software. Today's picture is totally different there are lot of technologies are used for maintaining library. Library is available in web site. A user can interact library using web site. Online registration can be done using online method.

In the age of information technology, and the information communication technology(ICT) plays very important role in the development of libraries and also helps to improve the quality of library services .

Development and Maintenance of electronic library services is one of the major current challenges for the faculty of library and science. Digital information is stored in networked resources which can be editable as well as accessible in huge form. The electronic data is stored in various formats to provide service to end users. Over the last decade a growing the numbers of libraries adopted e-services to provide their users with electronics access like e-mail, web, mobile phone to wide range of services. E-service promises the cost saving, time consumption, increasing the operational efficiencies and improves the services for users.

Rapid advancement of Information Science which is the part of Library science is continuously growing. All the Libraries are transforming in digital and innovative versions. Information collection, Information retrieval and Information processing becomes the part of everybody's routine life. Today, Digital Version of book, reading material, banking information, court information etc are necessary and important document

The term Digital Library is used differently, there are so many ways to use digital library. The range of its applications is available in wide range as follows.

i. Users can directly access all the rare material of library like scanned document, images, digital video , printed text etc.
ii. Complete data sets for all subjects ,Software libraries or multimedia work often referred as digital library.
iii. Collection of book CD/DVD , interactive video, Sound recorded presentation those contain complete book.
iv. Library catalogue ,educational movies, Databases accessible through internet

Characteristics of Digital Libraries

A digital library promises a one-step, equal and timely access to a vast amount of various resources in a shared mode in a given specialty uplifting traditional barriers of time and space. Digital libraries have the following characteristics associated with them:

i. Digital libraries are also contributes traditional libraries and include both electronic (digital) as well as print and other (e.g. Graphics, audio, video, animation, etc.) material;
ii. Digital libraries are not fixed to physical spaces. Different components of the digital library may be distributed to different locations that work coherently to meet the requirement of users;
iii. A digital library has controlled the information, it provides access to information, not just a mark to it;
iv. Digital library has a unified and consistent organizational structure for accessing.
v. Digital libraries allow to access to its content to multiple users simultaneously, these

content can be listed in various ways by different users simultaneously;

Marchionini and Fox (1999) identified the following four dimension of digital libraries:

- **Community**: Reflects social, political, legal and cultural issues;
- **Technology**: Different technology used in Digital Library includes Information storage and retrieval, networking, multimedia, interface design, etc.
- **Services**: Digital reference services, provide access to different users, improvement in services.
- **Content**: Maintain all types of information and forms in digital format.

Purpose of Digital Library

- To adopt systematic development procedure and collect, organize all the information in digital form
- To send efficient and appropriate information to all users.
- To encourage efforts in computing and communication network
- To improve communication between educational institutions.
- To organise exchange programmes between insttutions.

How e-library becomes more popular than Traditional?

Traditional libraries are still using printed materials in huge form that are expensive and bulky. All the Information seekers are not satisfied by using this printed material. They want the digital copy or e-resource of all these printed material and hence, the demand of digital information gets increasing.

A database which is the collection of billion objects each of which occupies very less space. If we tend the object as a book then we can be able to store thousand of books in a database in the form of PDF files. Nowadays this is very popular way to access or handle the books. In traditional approach for maintaining books in cupboards or shelves is very difficult. To access book in such a way is problematic for maintaining, since the copy of book becomes thin. We must have to take precaution for securing books or Information material from destructive insects.

Traditionally for accessing or reading books on a topic it is necessary to search that book through catalogue, cupboards or shelves which are spread around in a huge space of the library. To search particular topic or Information from a book, we read to go through index which takes more time. In e-library of digital library such same information can be searched through web sites as well as hyperlink within fraction of second and we will get accurate information.

The growing impact of ICT (Information and communication technology), Internet users, web technology and database technology has compelled libraries to use these technologies effectively to provide services to users. With growing number of e-sources, it has become imperative for library and information professionals to properly play their roles in disseminating information to their users. Information can be saved digitally and therefore, this helps in immediate access to high demand and frequently by users. The access of digital information collection like structured, unstructured, graphical, visual and audio/video recording etc makes digital library more and more acceptable to the users.

Traditional Libraries	**Digital or Electronic Library**
Readable material is in printed form	Readable material in digital form
Evolution is slow	Rapid and Fast growing
Reading material is available in Volumes or in more versions managed separately	Multi-media and fractal objects
Accessing of material is very limited	Accessing is much faster and larger
All Reading material is not available centrally	Any material is available anywhere and accessible

Preservation of digital information avoids tedious work for storing huge information in bulk form or volumes. Preserved digital material has very long life.

e-library services -

When searching for books in the Traditional Library, users have to face many problems. So, they have to store all the information related to the books. In addition, there are services like OPAC in the digital library. Research journals that are kept in the library require a large amount of space and all back issues of this journal must be stored. If the same journal is obtained in digital form, then the problem of space is reduced. These journals can be used from anywhere as well as internet users can download and store information they don't have want to use.

Researchers are benefited from e-library because dissertations and thesis are the most important information for them which are easily available in digital form. Many universities share their dissertations and theses through their websites as well as Shodhganga.

Attribute	**Traditional Library**	**e-Library**
Access Location	Centralised	Distributed
Interaction	Communication type is one way	Communication type is one way
Search	Search is using only index	Search is using different ways
Query of Access	Text queries	Navigation, browsing and filtering

As per study of e-libraries where e-services to users are given there are so many benefits to the users are concluded.

There are very big difficulties while accessing traditional libraries therefore academic libraries are shifting to the traditional print resources into e-resource and maintain as Institutional repository. The sources of e-libraries of Institutions are distributing through internet or intranet.

The benefits of e-library for the following:

When using electronic information sources lot of benefits are obtain by the users that they are:

1. Easy availability of online resources for research E-libraries are the best tool which will make easy to its users.
2. Retrospective search is easy and most convenient than print resource.
3. Searching is the very good service of e-library which increases Literacy of the educator or us
4. Searching supports combination of keywords
5. Facility is made available for searching or accessing multiple files.
6. E-libraries facilitate to its patrons for research solution.
7. Searching requirement available for distance learner.
8. users of e-library can study wherever and whenever they want, as digital libraries are open 24/7.
9. Due to different type of content accessed by e-library user can create his own pathway to design material.

Innovative services in e-library:

Big Data Analytics:

Collection of huge amount of data is Big Data. Generally in big libraries this type of concept is used. Collecting data and analyze it in more efficient form which can be eaisly delivered to all types of users is the data analytics.

Libraries play an important role in universities, research institutes etc so all they are accessing and managing digital information. The large amount of data of these libraries used and transformed into information and knowledge, which is then used for the research purpose as well as to share knowledge. After collecting all the data in one place users can mine and collect the perfect conclusion from big data.

Use of Smartphone:

To seat one place and access e-books of e-material from library is difficult in our busy life, so nowadays Smartphone are used to perform this work. Library uses who registered e-library can access e-books form any where any time.

Conclusion:

Digital library is more popular than traditional libraries since the services and support to Digital library are more than traditional library. Searching is more faster in Digital library .

Big repositories of digital objects like audio, video clips, Current news etc are very easy to access and use. Researchers are accessing e-journals as well as research papers for current research. Due to the use of innovations in e-library users can use more and more e-material from e-library.

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A BRIEF INTRODUCTION TO WAVELET TRANSFORMS AND COMPARISION OF WAVELET TRANSFORM WITH FOURIER TRANSFORM

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Abstract:
The subject wavelet analysis has recently drawn a great attention of mathematicians from various disciplines. It is connecting link between various fields of science like mathematics, physics, and electrical engineer. The objective of this paper is to introduce new researchers with wavelet theory and its application in brief and also to feed the needs of academic, industrial and governmental researchers, as well as to provide material for teaching at both the undergraduate and graduate levels. This paper gives the fundamental concept of the wavelet transform and provides an overview of history of the wavelet transform. The later part of this paper adds some applications, we also state on how does wavelet transform is working better than that of Fourier Transform

Introduction:
The Fourier transform analyzes the frequency components of the signal. But it do not provide an idea about the frequency at a given instant of time over the time axis. Short-time Fourier transform (STFT) [3] uses a sliding window to find spectrogram, which gives the information of both time and frequency. But still the problem of the length of window for resolution in frequency exists.

Wavelet Transform seems to be a solution to the problem above. Wavelet transforms which are based on small wavelets and having limited duration. Wavelet transforms contrasted with the Fourier transforms and windowed Fourier transforms.

The purpose of this article is to provide the unfamiliar reader with a basic introduction for understanding, analyzing wavelet transform and provide some key references for further study. We also compare Wavelet transforms with Fourier transform.

Main Result
The first literature that relates to the wavelet transform is Haar wavelet [1], [4]. It was proposed by the mathematician Alfrd Haar in 1909[2]. Until 1981, the concept was proposed by the geophysicist Jean Morlet. Morlet and the physicist Alex Grossman introduced the term wavelet in 1984 firstly. Before that, the only known orthogonal wavelet was Haar wavelet.

Second orthogonal wavelet, called Meyer wavelet was given by Yves Meyer in 1985.

The 1st international conference was held in France in 1987. In 1988, Stephane Mallat and Meyer proposed the concept of multiresolution. In the same year, Ingrid Daubechies found a systematical method to construct the compact support orthogonal wavelet [2], [5]. In 1989, Mallat [2] proposed the fast wavelet transform. With the appearance of this fast algorithm, the wavelet transform had numerous applications in the signal processing field. Wavelet transforms have become increasingly important in image compression as compared to Fourier transform since wavelets allow both time and frequency analysis simultaneously.

How Wavelet Transform better than Fourier transform:

In electrical engineering there have been independent development in the analysis of non-stationary signals, specifically in the form of short term Fourier transform [3], a variation of which called the Gabor transform was first publish in 1946. A major advance in wavelet theory was the discovery of smooth mother wavelets who's set of discrete translations and dilations form an orthonormal basis for$L^2(R)$, where R set of real numbers and L^2 is the set of all functions, f, that have bounded energy, that is functions for which

$$\int_{-\infty}^{\infty} |f(t)|^2 dt < \infty$$

This is a main difference from Gabor transform in which no orthonormal basis can be generated from smooth wavelet thus the new frame work brought

about better understanding and new approach that overcomes a difficulties in short term Fourier transform methods.

Wavelet analysis is a rapidly developing area of mathematical and application-oriented research in many disciplines of science and engineering. The wavelet transform is a localized transform in both space (time) and frequency, and this property can be used to extract information from a signal that is not possible to unravel with a Fourier or even windowed Fourier transform. Wavelet transforms originated in geophysics in early 1980's for the analysis of seismic signal.

The concept of wavelet transforms was formalized in early 1980's in a series of papers by Morlet et al. [1], [2], Grossmann and Morlet [6], and Goupillaud, Grossmann and Morlet [6]. Since this formalism and some significant work by Meyer ([1,2,6] and references therein), Mallat [1,2,6], Daubechies [6], and Chui [6] among others, the wavelets have become pervasive in several diverse areas such as mathematics, physics, digital signal processing, vision, numerical analysis, and geophysics, to name a few. Wavelet transforms are integral transforms using integration kernels called wavelets. These wavelets are essentially used in two ways when studying processes or signals: (i) as an integration kernel for analysis to extract information about the process, and (ii) as a basis for representation or characterization of the process. Evidently, in any analysis or representation, the choice of the basis function (or kernel) determines the kind of information that can be extracted about the process. Using wavelet we can study features of the signal locally with a detail matched to their scale, i.e., broad features on a large scale and fine features on small scales. This property is especially useful for signals that are either non-stationary, or have short lived transient components, or have features at different scales, or have singularities wavelets as the elementary building blocks in a decomposition or series expansion akin to the familiar Fourier series. Thus, a representation of the process using wavelets is provided by an infinite series expansion of dilated and translated versions of a mother wavelet, each multiplied by an appropriate coefficient. For processes with finite energy this wavelet series expansion is optimal, i.e., it offers an optimal approximation to the original signal, in the least squares sense.

Recall that, the Fourier transform of a function f (t), is given as

$$F\{f(t)\} = \int_{-\infty}^{\infty} f(t)\, e^{-i\omega t} dt$$

This gives the information about the frequency content of a process or signal; it gives no information about the location of these frequencies in the time domain. The music, speech, seismic signals, non-stationary geophysical processes, etc. have same time varying frequencies. To study such processes, we need transforms which will enable us to obtain the frequency content of a process locally in time. There are essentially two methods that have been developed to achieve this (within the limits of the uncertainty principle which states that one cannot obtain arbitrary good localization in frequency as well as time) one is Windowed Fourier transform and other is wavelet transform. These two methods are discussed in the following subsections.

Overlook of Windowed Fourier transform and Wavelet Transform.

2.2.1 Windowed Fourier transform

In the Fourier transform framework, time localization can be achieved by windowing the data at various times, say, using a windowing function $f(t)$, and then taking the Fourier transform. That is, the windowed Fourier transform (also called the short-time Fourier transform), $G\{f(\omega,t)\}$ is given

$$G\{f(\omega,t)\} = \int_{-\infty}^{\infty} f(t)\, g(u-t) e^{-i\omega t} dt$$

$$G\{f(\omega,t)\} = \int_{-\infty}^{\infty} f(t)\, g_{\omega,t}(u) dt$$

Where the integration kernel is $g_{\omega,t}(u) = g(u-t)e^{-i\omega t}$. This transform measures locally, around the point t, the amplitude of the sinusoidal wave component of frequency. The window function $g(t)$ is usually chosen as a real, even function with the maximum concentration of energy in the low frequency components. The representation of the function f (t) on the time-frequency plane, i.e., (ω, t) plane, thus obtained is called the phase-space representation.

Analyzing functions $g_{\omega,t}(u)$ for all ω and t consist of the same envelope g (t) filled in with sinusoids of frequency ω.

2.2.2 Wavelet Transform

The wavelet transform of a function $f(t)$ with finite energy is defined as the integral transform with a family of functions $W\{f(\lambda,t)\}$ and is given as

$$W\{f(\lambda,t)\} = \int_{-\infty}^{\infty} f(u) \frac{1}{\sqrt{\lambda}} \psi\left(\frac{u-t}{\lambda}\right) du$$

$$W\{f(\lambda,t)\} = \int_{-\infty}^{\infty} f(u)\, \psi_{\lambda,t}(u) du, \;\; \lambda > 0$$

Here, λ is a scale parameter, t a location parameter and the functions $\psi_{(\lambda,t)}(u)$ are called wavelets. In case $\psi_{(\lambda,t)}(u)$ is complex, we use the complex conjugate $\bar{\psi}_{(\lambda,t)}(u)$ in the above integration. Changing the value of has the effect of dilating ($\lambda > 1$) or contracting ($\lambda < 1$) the function $\psi(t)$ and changing t has the effect of analyzing the function f (t) around the point t. The normalizing constant $\frac{1}{\sqrt{\lambda}}$ is chosen so that

$$\|\psi\|^2 = \int \left|\psi_{(\lambda,t)}(u)\right|^2 du = \int |\psi(t)|^2 du$$

For all scalers λ , We also choose the normalization $\int|\psi(t)|^2\,du = 1$. The wavelet transform $W\{f(\lambda,t)\}$ is often denoted as the inner product $\langle f,\psi_{(\lambda,t)}\rangle$ in contrast to the windowed Fourier transform case, the number of cycles in the wavelet $\psi_{(\lambda,t)}$ does not change with the dilation (scale) parameter λ but the support length does.

The choice of the wavelet $\psi(t)$ is neither unique nor arbitrary. The function $\psi(t)$ is a function with unit energy chosen so that it has:

1. Compact support, or sufficiently fast decay, to obtain localization in space;

2. Zero mean, i.e., $\int_{-\infty}^{\infty}\psi(t)\,dt = 0$ although higher order moments may also be zero, i.e.

$$\int_{-\infty}^{\infty} t^k\psi(t)\,dt = 0\ for\ k = 0,1,2\ldots.N-1$$

For admissibility condition of the wavelet we must have mean to be zero. It is because of the above two properties that the function $\psi(t)$ is called a wavelet. The second property ensures that $\psi(t)$ has a wiggle, i.e., is wave like, and the first ensures that it is not a sustaining wave.

It is being used in Geophysics for the analysis of seismic signals. The few Properties that make wavelets attractive are time-frequency localization, orthogonality, multirate filtering, and scale-space analysis.

Applications of wavelet transform:

Over the past decade, wavelet transforms have found numerous applications in diverse areas such as harmonic analysis, numerical analysis, signal and image processing[4,5], nonlinear dynamics[5,6], fractal and multifractal analysis, and others, and have been formalized into a rigorous mathematical framework.

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DATA FUSION OF INTELLIGENT MEDICAL MONITORING - A SURVEY

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ABSTRACT:

of small and medium-sized cities are very few, which leads to patients going to large city hospitals for medical treatment, which makes hospital overcrowding. Intelligent telemedicine system sinks excellent medical resources. In local area patients can also enjoy the excellent medical resources of the big city hospitals. Therefore, the use of advanced networks and science and technology, the integration of information technology and medical technology, the establishment of intelligent telemedicine system, will certainly optimize the hospital business process. This paper proposes research on multi- In this paper we have reviewed the recent technology called data fusion medical monitoring. The IOT-based intelligent telemedicine system is very important for future progress of hospitals. To inform people's living environment it merges information space and physical space. The medical resources in China are extremely uneven. There are many medical resources in big cities. The resources level data fusion using intelligent medical monitoring; it improves resource utilization and work efficiency, and promote hospital hierarchical data construction. Innovative use of Internet of Things technology promotes academic exchanges among hospitals, enabling doctors' technical skills, and hospital medical standards. It is hoped that this article can help the development of telemedicine.

KEYWORDS: Hierarchical Data; IOT; medical resources; multi-level data fusion; information Technology.

1. INTRODUCTION

The use of advanced networks and science and technology, the integration of information technology and medical technology, the establishment of intelligent telemedicine system, will certainly optimize the hospital business process. This paper proposes research on multi-level data fusion using intelligent medical monitoring, it improves resource utilization and work efficiency, and promote hospital hierarchical data construction. Innovative use of Internet of Things technology promotes academic exchanges among hospitals, enabling doctors' technical skills, and hospital medical standards. It is

hoped that this article can help the development of telemedicine.

2. LITERATURE SURVEY

[1] Human activity checking can be favorable to remotely screen the status of patients or older individual for clever social insurance. Human activity acknowledgment empowers productive and precise checking of human practices, which can show multifaceted intricacy credited to differences in perspectives, character, goals and movement speed of people, and so forth. The spatial-worldly data assumes a significant job in the human activity acknowledgment. In this paper, we proposed a novel profound learning design named as intermittent 3D convolutional neural system (R3D) to extricate compelling and discriminative spatial-fleeting highlights to be utilized for activity acknowledgment, which empowers the catching of long-extend transient data by accumulating the 3D convolutional system passages to fill in as a contribution to the LSTM (Long Short-Term Memory) engineering. The 3D convolutional system and LSTM are two viable strategies for separating the transient data. The proposed R3D organize incorporated these two techniques by sharing a common 3D convolutional system in sliding windows on video spilling to catching momentary spatial-fleeting highlights into the LSTM.

Advances in wearable detecting and correspondences foundation have permitted the far reaching improvement of model therapeutic gadgets for understanding monitoring [2]. Nonetheless, such gadgets have not entered into clinical practice, basically because of an absence of examination into "wise" investigation strategies that are adequately hearty to help huge scale sending. Existing frameworks are regularly tormented by huge bogus caution rates, and a powerlessness to adapt to sensor antiquity in a principled way. This paper has two points: 1) proposition of a novel, quiet customized framework for investigation and induction within the sight of information vulnerability, commonly brought about by sensor relic and information deficiency; 2) show of the method utilizing a huge scale clinical examination in which 200 patients have been checked utilizing the proposed framework. This last gives truly necessary proof that customized e-wellbeing observing is attainable inside a real clinical condition, at scale, and that the strategy is equipped for improving patient results by means of customized social insurance.

[3] Atrial fibrillation (AF) is one of the most well-known supported constant cardiovascular arrhythmia in older populace, related with a high mortality and grimness in stroke, cardiovascular breakdown, coronary corridor ailment, fundamental thromboembolism, and so on. The early location of AF is fundamental for turning away the probability of incapacity or mortality. In any case, AF identification stays tricky because of its long winded example. In this paper, a multi-scaled combination of profound convolutional neural system (MS-CNN) is proposed to screen out AF accounts from single lead short electrocardiogram (ECG) chronicles. The MS-CNN utilizes the design of two-stream convolutional systems with various channel sizes to catch highlights of various scales. The test results show that the proposed MS-CNN accomplishes 96.99% of order precision on ECG chronicles trimmed/cushioned to 5 s.

[4] With the nonstop advancement of data innovation, individuals are step by step moving from the computerized age to the canny time. As one of the

most agent developing advancements in this time, the artificial knowledge is unobtrusively completely changing ourselves at an uncommon rate. At present, the Internet of Things has been officially incorporated the five developing key businesses in the nation. Its advancement course is from safe city, computerized city, to the impression of China. As a significant piece of a sheltered city, the restorative and wellbeing held is likewise pushing toward to the wise time. This paper primarily plans and actualizes the framework customer, framework information group change, and framework information transmission. The principle specialized focuses included are HL7 convention, AMQP convention, and Rabbit MQ system, furthermore, and the reserve innovation is applied to the server. The paper screens the shrewd grounds emergency clinic condition, at that point does constant transmission, stockpiling, show, lastly dissects the information to cleverly distinguish the keen grounds medical clinic condition.

We propose a subjective social insurance structure that receives the Internet of Things (IoT)- cloud technologies[5]. This structure utilizes shrewd sensors for correspondences and profound learning for wise basic leadership inside the brilliant city point of view. The subjective and keen structure screens patients' state continuously and gives exact, opportune, and top notch medicinal services administrations effortlessly. To survey the plausibility of the proposed system, we present the exploratory aftereffects of an EEG pathology classification method that utilizations profound learning. The framework decides the condition of the patient by observing sensor readings, for example, outward appearances, discourse, EEG, developments, and motions. The constant choice, in light of which the future game-plan is taken, is made by the intellectual module. At the point when data is transmitted to the profound learning module, the EEG signals are classified as pathologic or ordinary. The patient state observing and the EEG handling results are imparted to social insurance suppliers, who would then be able to evaluate the patient's condition and give crisis help if the patient is in a basic state. The proposed profound learning model accomplishes preferred precision over the best in class frameworks.

[6] This paper exhibits a flexible multi-sensor combination strategy and basic leadership calculation for walking and constant patient observing purposes by means of a body sensor organize (BSN). Stride highlights including spatio-worldly parameters, walk asymmetry, and consistency were identified and evaluated from singular patient’s information gathered from clinical preliminaries. The stride appraisal results were practically identical with past investigations. Step division succeed in any event, when the pace strays significantly from the solid subjects' reference esteem, which gives evidence of objectivity and adequacy of this starter investigate, to be specific, utilizing wearable inertial estimation unit (IMUs) as a pointer to distinguish stride irregularity in subjects with neurological issue.

[7] Healthcare is experiencing a fast change from customary emergency clinic and expert centered way to deal with a disseminated patient-driven methodology. Advances in a few advances fuel this fast change of medicinal services vertical. Among different advancements, correspondence innovations have empowered to convey customized and remote human services administrations. At present, medicinal services broadly utilizes the current 4G organize and other correspondence advancements for

savvy social insurance applications and are constantly developing to suit the necessities of future insightful human services applications. As the shrewd human services showcase extends the quantity of utilizations interfacing with the system will create information that will shift in size and configurations. This will put complex requests on the system as far as transfer speed, information rate, and idleness, among different elements. The future savvy medicinal services systems are relied upon to be a blend of the 5G and IoT gadgets which are required to increment cell inclusion, arrange execution and address security related concerns. This paper gives a cutting edge survey of the 5G and IoT empowered savvy human services, Taxonomy, inquire about patterns, difficulties, and future research bearings.

Over the most recent couple of years, Internet of Things, Cloud figuring, Edge registering, and Fog processing have increased a ton of consideration in both industry and academia[8]. Notwithstanding, an unmistakable and perfect meaning of these figuring ideal models and their connection is elusive in the writing. This makes it hard for analysts new to this zone to get a solid image of these ideal models. This work handles this insufficiency, speaking to an accommodating asset for the individuals who will begin straightaway. To begin with, we show the advancement of current figuring standards and related research intrigue. At that point, we address every worldview, perfectly depicting its key focuses and its connection with the others. From that point, we widely address Fog processing, commenting its extraordinary job as the paste between IoT, Cloud, and Edge registering. At last, we quickly present open difficulties and future research bearings for IoT, Cloud, Edge, and Fog processing.

[9] The design of wearable shrewd terminal miniaturized scale sensor and the recovery preparing of elbow movement work were contemplated. The wearable remote sensor organize framework structured in this paper is for the most part used to mirror the movement direction of patients continuously and gather the particular physiological parameters information during the time spent exercise recovery. The joint reproduction of multi-sensor information dependent on circulated compacted detecting upgrades the format of brilliant terminal miniaturized scale sensors, and afterward utilizes kinematics recreation of elbow joint to plan the terminal hub of movement restoration checking framework. The framework can screen physiological data, for example, electromyography (EMG) sign of patients progressively, process and examine physiological data of patients continuously, and give premise to restorative laborers to detail and change recovery preparing programs, in order to improve the impact of restoration preparing.

3. CONCLUSION

Now a days many hospitals have their own network of information based on IoT technology. It has functions like outpatient information management, drug information management, and inpatient information management. The module can be connected through card. IoT achieves monitoring, positioning and other functions extended to all areas of smart hospitals. This makes hospital environment intelligent and effective with skilled staff. IoT increases work efficiency and reduces work pressure and gives long term benefits.

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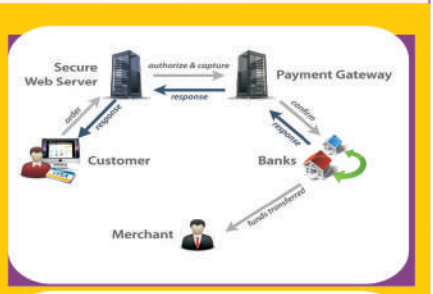

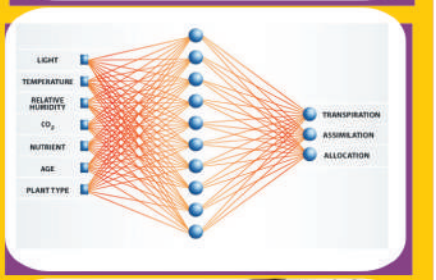

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