Call for Papers- Volume 10, Issue 2, February 2023, International Journal of Advanced Research Trends in Engineering and Technology [IJARTET], ISSN(online):2394-3785 ISSN(Print):2394-3777

Christo Ananth[1]
Professor, Samarkand State University, Uzbekistan [1]

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Index Terms—**Artificial Intelligence, Christo Ananth, Dr.Christo Ananth, Doctor Christo Ananth, Cyber Security, www.christoananth.com, 0000-0001-6979-584X, Internet of Things, Machine Learning, Process Control, Automation, Industry 4.0,Ijaridea.**

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IV. RESEARCH WORKS

[1] discussed about a system, a low power area reduced and speed improved serial type daisy chain memory register also known as shift Register is proposed by using modified clock generator circuit and SSASPL (Static differential Sense Amplifier based Shared Pulsed Latch). This latch based shift register consumes low area and low power than other latches. There is a modified complementary pass logic based 4 bit clock pulse generator with low power and low area is proposed that generates small clock pulses with small pulse width. These pulses are given to the conventional shift register that results high speed. The system is designed by the Cadence virtuoso 180 nm technology. The Maximum supply voltage for the system, clock source and input source are 1.8V. The complementary pass logic based proposed system reduces the area about 7% for the total system and about 23% for the 4 bit clock pulse generator circuit. The Power is reduced by 26% than the conventional system. The speed is improved about 7% than the existing system. [2] proposed a secure hash message authentication code. A secure hash message authentication code to avoid certificate revocation list checking is proposed for vehicular ad hoc networks (VANETs). The group signature scheme is widely used in VANETs for secure communication, the existing systems based on group signature scheme provides verification delay in certificate revocation list checking. In order to overcome this delay this paper uses a Hash message authentication code (HMAC). It is used to avoid time consuming CRL checking and it also ensures the integrity of messages. The Hash message authentication code and digital signature algorithm are used to make it more secure . In this scheme the group private keys are distributed by the roadside units (RSUs) and it also manages the vehicles in a localized manner. Finally, cooperative message authentication is used among entities, in which each vehicle only needs to verify a small number of messages, thus greatly alleviating the authentication burden. [3] proposed a novel method for secure transportation of railway systems has been proposed in this project. In existing methods, most of the methods are manual resulting in a lot of human errors. This project proposes a system which can be controlled automatically without any outside help. This project has a model concerning two train sections and a gate section. The railway sections are used to show the movement of trains and a gate section is used to show the happenings in the railway crossings. The scope of this project is to monitor the train sections to prevent collisions between two trains or between humans and trains and to avoid accidents in the railway crossings. Also an additional approach towards effective power utilization has been discussed. Five topics are discussed in this project : 1) Detection of obstacles in front of the train;2) Detection of cracks and movements in the tracks;3) Detection of human presence inside the train and controlling the electrical devices accordingly 4) Updating the location of train and sharing it with other trains automatically 5) Controlling the gate section during railway crossing. This project can be used to avoid accidents in the railway tracks. [4] discussed that the activity related status data will be communicated consistently and shared among drivers through VANETs keeping in mind the end goal to enhance driving security and solace. Along these lines, Vehicular specially appointed systems (VANETs) require safeguarding and secure information correspondences. Without the security and protection ensures, the aggressors could track their intrigued vehicles by gathering and breaking down their movement messages. A mysterious message confirmation is

a basic prerequisite of VANETs. To conquer this issue, a protection safeguarding confirmation convention with expert traceability utilizing elliptic bend based chameleon hashing is proposed. Contrasted and existing plans Privacy saving confirmation utilizing Hash Message verification code, this approach has the accompanying better elements: common and unknown validation for vehicle-to-vehicle and vehicle-to-roadside interchanges, vehicle unlinkability, specialist following capacity and high computational effectiveness. [5] discussed because of various appealing focal points, agreeable correspondences have been broadly viewed as one of the promising systems to enhance throughput and scope execution in remote interchanges. The hand-off hub (RN) assumes a key part in helpful interchanges, and RN determination may considerably influence the execution pick up in a system with agreeable media get to control (MAC). In this paper, we address the issue of RN choice while considering MAC overhead, which is brought about by handshake motioning as well as casing retransmissions because of transmission disappointment too. We outline a helpful MAC component with our ideal RN determination calculation, which is called ideal hand-off choice MAC, and utilize a hypothetical model. To investigate the collaboration execution picks up. We direct recreation tests in view of Network Simulator To assess our proposed agreeable MAC. Numerical outcomes approve the adequacy of our investigative model and demonstrate that our composed MAC fundamentally outflanks existing agreeable MAC components that don't consider retransmission MAC overhead. [6] discussed that Helpful correspondence is developing as a standout amongst the most encouraging procedures in remote systems by reason of giving spatial differing qualities pick up. The transfer hub (RN) assumes a key part in agreeable correspondences, and RN choice may generously influence the execution pick up in a system with helpful media get to control (MAC). The issue of RN determination while considering MAC overhead, which is acquired by handshake motioning as well as casing retransmissions because of transmission disappointment also. We plan a helpful MAC system. The current framework utilizes agreeable MAC system with our ideal RN determination calculation, which is called ideal transfer choice MAC (ORS-MAC), and utilize a hypothetical model to break down the participation execution picks up. Be that as it may, it has transmission delay, less scope range and having crash amid transmission. Organize coding, which joins a few bundles together for transmission, is exceptionally useful to decrease the excess at the system and to build the general throughput. In this a novel system coding mindful helpful MAC convention, to be specific NCAC-MAC is proposed, that picks the hand-off hub utilizing Splitting Algorithm-based Relay Selection. The plan goal of NCAC-MAC is to build the throughput and lessen the postponement. [7] discussed that Biomedical and anatomical data are made simple to acquire because of progress accomplished in computerizing picture division. More research and work on it has improved more viability to the

extent the subject is concerned. A few tech-niques are utilized for therapeutic picture division, for example, Clustering strategies, Thresholding technique, Classifier, Region Growing, Deformable Model, Markov Random Model and so forth. This work has for the most part centered consideration around Clustering techniques, particularly k-implies what's more, fluffy c-implies grouping calculations. These calculations were joined together to concoct another technique called fluffy k-c-implies bunching calculation, which has a superior outco-me as far as time usage. The calculations have been actualized and tried with Magnetic Resonance Image (MRI) pictures of Human cerebrum. The proposed strategy has expanded effectiveness and lessened emphasis when contrasted with different techniques. The nature of picture is assessed by figu-ring the proficiency as far as number of rounds and the time which the picture takes to make one emphasis. Results have been dissected and recorded. Some different strategies were surveyed and favorable circumstances and hindrances have been expressed as special to each. Terms which need to do with picture division have been characterized nearby with other grouping strategies. [8] discussed about the combination of Graph cut liver segmentation and Fuzzy with MPSO tumor segmentation algorithms. The system determines the elapsed time for the segmentation process. The accuracy of the proposed system is higher than the existing system. The algorithm has been successfully tested in multiple images where it has performed very well, resulting in good segmentation. It has taken high computation time for the graph cut processing algorithm. In future work, we can reduce the computation time and improves segmentation accuracy. [9] discussed that Automatic liver tumor segmentation would bigly influence liver treatment organizing strategy and follow-up assessment, as a result of organization and joining of full picture information. Right now, develop a totally programmed technique for liver tumor division in CT picture. Introductory liver division comprises of applying a functioning form strategy. In the wake of separating liver applying Super pixel division Algorithm for portioning liver tumor proficiently. In the proposed work, we will investigate these procedures so as to improve division of various segments of the CT pictures. The exploratory outcomes indicated that the proposed strategy was exact for liver tumor division. [10] discussed that Live wire with Active Appearance model (AAM) strategy is called Oriented Active Appearance Model (OAAM). The Geodesic Graph-cut calculation creates much better division results than some other completely programmed strategies distinguished in writing in the expressions of exactness and period preparing. This strategy besides viably consolidates the Dynamic Appearance Model, Live Wire and Graph Cut tips to abuse their integral focal points. It comprises of a couple of fundamental parts: model creating, instatement, and depiction. As to the instatement (acknowledgment) part, a pseudo methodology is typically utilized and the real organs are portioned cut essentially by cut by means of the OAAM strategy. The reason with respect to instatement is to give

harsh item confinement in addition to shape imperatives for a last GC technique, which frequently will deliver refined outline. The proposed (Fuzzy K-C-Means) procedure offers extended viability and diminished accentuation when stood out together from various strategies. The estimating of picture is assessed by calculating the ability as much as number of units and the time which generally the image takes for making one accentuation. Some different systems were reviewed in addition to great conditions and burdens have been communicated in light of the fact that extraordinary to each. Words which have to do with photograph division are really portrayed close by with other gathering strategies.

[11] discussed that Tumor segmentation required also the identical automatic initialization as regarding the liver. This phase was applied only in order to liver volume, obtained following automatic delineation of lean meats surface: this latter, used to original dataset quantity, was used as a new mask in order to be able to prevent processing overloads and even avoid errors related to be able to arsenic intoxication surrounding tissues delivering similar gray scale droit. In addition, for this particular purpose, the voxels from the intensity range domain had been removed from the segmented liver volume. This alternative allowed the correct id of liver respect to be able to other organs, optimizing the particular calculation resources and growing the tumor segmentation precision. This work has regarding the most part focused consideration around Clustering approaches, particularly k-implies what's extra, fluffy c-implies grouping measurements. These calculations were signed up with together to concoct one other technique called fluffy k-c-implies bunching calculation, which features a superior outcome mainly because far as time use. The calculations have recently been actualized and tried together with Magnetic Resonance Image (MRI) pictures of Human cerebrum. The proposed strategy provides expanded effectiveness and reduced emphasis when contrasted using different techniques. The characteristics of picture is considered by figuring the skills as far as range of rounds plus the moment which the picture will take to make one concentration. [12] discussed about detection of leukaemia using a small picture handling method that distinguishes between red blood cells and young white cells. Visual examination of minuscule photos by looking at alterations such as surface, calculation, shading, and measurable research of photographs is now the only recognisable proof of blood trouble. One of the leading causes of death in humans is leukaemia. Its success rate and prognosis are largely dependent on the early detection and detection of infection. The goal of this project is to identify and test leukemia-affected cells. Leukemia can be recognised and classified based on the presence of juvenile cells, as well as whether it is persistent or intense. A variety of procedures, including histogram levelling, straight difference extending, and morphological methods such as region opening, region closing, disintegration, and expansion, are used to differentiate juvenile cells. When compared to current procedures, the Proposed Method has produced better results.

[13] discussed about diabetic retinopathy from retinal pictures utilizing cooperation and information on state of the art sign dealing with and picture preparing. The Pre-Processing stage remedies the lopsided lighting in fundus pictures and furthermore kills the fight in the picture. Although the Disease Classifier step was used to identify arising wounds and other data, the Division stage divides the image into two distinct classes. The methodology for ensuring red spots, exhausting and recognizing evidence of vein-lobby hybrid focuses was also developed in this work, using the hidden data, shape, size, object length to expansiveness distribution as contained in the general fundus picture in the problem area. Besides the Diabetic Retinopathy (DR) analysis, two graphical user interfaces (GUIs) were produced throughout this project. The primary GUI is for the mix of sore information data and was utilized by the ophthalmologist in venturing pictures for enlightening assortment, while the subsequent GUI is for redone diagnosing and showing the examination to accomplish a significantly seriously satisfying UI. [14] emphasized that Security is an important issue in current and next-generation networks. Blockchain will be an appropriate technology for securely sharing information in next-generation networks. Digital images are the prime medium attacked by cyber attackers. In this paper, a blockchain based security framework is proposed for sharing digital images in a multi user environment. The proposed framework uses reversible data hiding and encryption as component techniques. A novel high capacity reversible data hiding scheme is also proposed to protect digital images. Reversible data hiding in combination with encryption protects the confidentiality, integrity and authentication of digital images. In the proposed technique, the digital image is compressed first to create room for data hiding, then the user signature is embedded; afterwards the whole image is encrypted. For compression, JPEG lossy compression is used to create high capacity. For encryption, any symmetric block cipher or stream cipher can be used. Experimental results show that the proposed blockchain based framework provides high security and the proposed reversible data hiding scheme provides high capacity and image quality. [15] emphasized that people who are visually impaired have a hard time navigating their surroundings, recognizing objects, and avoiding hazards on their own since they do not know what is going on in their immediate surroundings. We have devised a new method of delivering assistance to people who are blind in their quest to improve their vision. An affordable, compact, and easy-to-use Raspberry Pi 3 Model B+ was chosen to demonstrate how the proposed prototype works. All of this is made possible by a camera and sensors and the most modern image processing algorithmic methods available. A camera and ultrasonic sensors are utilized to measure the distance between the user and the object. Using a global positioning system (GPS), it is also possible to track down people who are blind or have impaired vision (GPS). Consider the possibility of making this a for-profit product. Small and light, it may be fitted to a regular pair of spectacles without

incurring additional fees or posing any further difficulties. [16] discussed that The study of viruses and their genetics has been an opportunity as well as a challenge for the scientific community. The recent ongoing SARSCov2 (Severe Acute Respiratory Syndrome) pandemic proved the unpreparedness for these situations. Not only the countermeasures for the effect caused by virus need to be tackled but the mutation taking place in the very genome of the virus is needed to be kept in check frequently. One major way to find out more information about such pathogens is by extracting the genetic data of such viruses. Though genetic data of viruses have been cultured and stored as well as isolated in form of their genome sequences, there is still limited methods on what new viruses can be generated in future due to mutation. This research proposes a deep learning model to predict the genome sequences of the SARS-Cov2 virus using only the previous viruses of the coronaviridae family with the help of RNN-LSTM (Recurrent Neural Network-Long ShortTerm Memory) and RNN-GRU (Gated Recurrent Unit) so that in the future, several counter measures can be taken by predicting possible changes in the genome with the help of existing mutations in the virus. After the process of testing the model, the F1-recall came out to be more than 0.95. The mutation detection's accuracy of both the models come out about 98.5% which shows the capability of the recurrent neural network to predict future changes in the genome of virus. [17] discussed that Liver tumor division in restorative pictures has been generally considered as of late, of which the Level set models show an uncommon potential with the advantage of overall optima and functional effectiveness. The Gaussian mixture model (GMM) and Expected Maximization for liver tumor division are introduced. In the early liver division process Level set models are utilized. This proposed strategy uses Gaussian blend models to demonstrate the portioned liver image, and it transforms the division issue into the most significant probability parameter estimation through the use of Expected Maximisation (EM) calculations. The proposed methodology outperformed existing techniques by a significant margin, according to the results of our comparison. [18] discussed that In surgical planning and cancer treatment, it is crucial to segment and measure a liver tumor's volume accurately. Because it would involve automation, standardisation, and the incorporation of complete volumetric information, accurate automatic liver tumor segmentation would substantially affect the processes for therapy planning and follow-up reporting. Based on the Hidden Markov random field, Automatic liver tumor detection in CT scans is possible using hidden Markov random fields (HMRF-EM). A CT scan of the liver may be too low-resolution for this software. CT liver tissue segmentation is based on the HMRF model. When building an accurate HMRF model, an accurate initial image estimate is crucial. Adaptive K-means clustering is often used for initial estimation. HMRF's performance can be greatly improved by clustering. This project aims to segment liver tissue quickly. This paper proposes an adaptive K-means clustering approach for estimating liver images in the

HMRF-EM model. The previous strategy had flaws, so this one fixed them. We compare the current and proposed methods. The proposed method outperforms the currently used method. [19] discussed that Blood leukemia can be diagnosed with greater precision and specificity when red blood cells are separated from young white blood cells. The only way to tell if someone has a blood disorder is to take photographs of their skin, calculate, shade, and measure them. According to the World Health Organization, leukemia is the fifth leading cause of death in the world. Early detection and identification of infection are critical to the treatment's success and outcome. It is hoped that the researchers will be able to identify and test cells that are linked to leukemia in this study. This disease can be classified according to whether or not it has immature cells and the severity of persistent or intense leukemia. A more uniform distribution of data points can be achieved by using histogram levelling and straight difference extending with morphological methods such as region opening, region closing, disintegration, and expansion. Thus, the Proposed Method is more effective than other previous methods. [20] discussed that according to the observations in this paper, an existing mathematical model of banking capital dynamics should be tweaked. First-order ordinary differential equations with a "predator-pray" structure make up the model, and the indicators are competitive. Numerical realisations of the model are required to account for three distinct sets of initial parameter values. It is demonstrated that a wide range of banking capital dynamics can be produced by altering the starting parameters. One of the three options is selected, and the other two are eliminated. The model is generalized taking into account fractional derivatives of the bank indicators for time, reflecting the rate of their change. Based on numerical calculations, it is established that reduction of the order of derivatives from units leads to a delay of banking capital dynamics. It is shown, that the less the order of derivatives from the unit, the more delay of dynamics of indicators. In all analyzed variants indicators at large times reach their equilibrium values.

[21] examined the development and refinement of possible mathematical models for the intellectual system of career guidance. Mathematical modeling of knowledge expression in the career guidance system, Combined method of eliminating uncertainties, Chris-Naylor method in the expert information system of career guidance, Shortliff and Buchanan model in the expert information system of career guidance and DempsterSchafer in the expert information system of career guidance method has been studied. The algorithms of the above methods have been developed. The set of hypotheses in the expert system is the basic structure of the system that determines the set of possible decisions of the expert system. This set, which is crucial in decision-making, should be sufficiently complete to describe all the possible consequences of situations that arise in the subject area. Therefore, it is important to improve the mathematical models of the intellectual system of career guidance. [22] proposed a system which is an innovative congestion control

algorithm named FAQ-MAST TCP (Fast Active Queue Management Stability Transmission Control Protocol) is aimed for high-speed long-latency networks. Four major difficulties in FAQ-MAST TCP are highlighted at both packet and flow levels. The architecture and characterization of equilibrium and stability properties of FAQ-MAST TCP are discussed. Experimental results are presented comparing the first Linux prototype with TCP Reno, HSTCP, and STCP in terms of throughput, fairness, stability, and responsiveness. FAQ-MAST TCP aims to rapidly stabilize high-speed long-latency networks into steady, efficient and fair operating points, in dynamic sharing environments, and the preliminary results are produced as output of our project. The Proposed architecture is explained with the help of an existing real-time example as to explain why FAQ-MAST TCP download is chosen rather than FTP download. [23] proposed a system in which FASTRA downloads and data transfers can be carried over a high speed internet network. On enhancement of the algorithm, the new algorithm holds the key for many new frontiers to be explored in case of congestion control. The congestion control algorithm is currently running on Linux platform. The Windows platform is the widely used one. By proper Simulation applications, in Windows we can implement the same congestion control algorithm for Windows platform also. The Torrents application which we are currently using can achieve speeds similar to or better than —Rapid share (premium user) application. [24] proposed a novel scheme for mobile Television services over WiMAX network, called the Wireless Switched Digital Video (WSDV) scheme, is proposed. Compared with the conventional broadcast or unicast schemes, the hybrid approach introduced in the proposed WSDV approach exploits the merits of two conventional schemes and mitigates their demerits, which enables it to increase wireless capacity for mobile Television services. The analytical model can capture the details of WiMAX resource allocation and take into consideration the popularity of the mobile Television contents being viewed by users enabling it to provide an accurate estimate of the amount of bandwidth required for WiMAX TV services and also enabling a designer to optimally select the number of channels via the WSDV service while meeting a desired level of blocking probability. The proposed optimized scheme outperforms the conventional schemes with respect to blocking probability. [25] discussed about Reconstruction of Objects with VSN. By this object reconstruction with feature distribution scheme, efficient processing has to be done on the images received from nodes to reconstruct the image and respond to user query. Object matching methods form the foundation of many state- of-the-art algorithms. Therefore, this feature distribution scheme can be directly applied to several state-of- the-art matching methods with little or no adaptation. The future challenge lies in mapping state-of-the-art matching and reconstruction methods to such a distributed framework. The reconstructed scenes can be converted into a video file format to be displayed as a video, when the user submits the query. This work can be brought

into real time by implementing the code on the server side/mobile phone and communicate with several nodes to collect images/objects. This work can be tested in real time with user query results. [26] discussed about a Secure system to Anonymous Blacklisting. The secure system adds a layer of accountability to any publicly known anonymizing network is proposed. Servers can blacklist misbehaving users while maintaining their privacy and this system shows that how these properties can be attained in a way that is practical, efficient, and sensitive to the needs of both users and services. This work will increase the mainstream acceptance of anonymizing networks such as Tor, which has, thus far, been completely blocked by several services because of users who abuse their anonymity. In future the Nymble system can be extended to support Subnet-based blocking. If a user can obtain multiple addresses, then nymble-based and regular IP-address blocking not supported. In such a situation subnet-based blocking is used. Other resources include email addresses, client puzzles and e-cash, can be used, which could provide more privacy. The system can also enhanced by supporting for varying time periods. [27] discussed about creating Obstacles to Screened networks. In today's technological world, millions of individuals are subject to privacy threats. Companies are hired not only to watch what you visit online, but to infiltrate the information and send advertising based on your browsing history. People set up accounts for facebook, enter bank and credit card information to various websites. Those concerned about Internet privacy often cite a number of privacy risks events that can compromise privacy which may be encountered through Internet use. These methods of compromise can range from the gathering of statistics on users, to more malicious acts such as the spreading of spyware and various forms of bugs (software errors) exploitation. [28] discussed about a system,the effective incentive scheme is proposed to stimulate the forwarding cooperation of nodes in VANETs. In a coalitional game model, every relevant node cooperates in forwarding messages as required by the routing protocol. This scheme is extended with constrained storage space. A lightweight approach is also proposed to stimulate the cooperation. [29] discussed about a method, In vehicular ad hoc networks (VANETs), because of the nonexistence of end-to-end connections, it is essential that nodes take advantage of connection opportunities to forward messages to make end-to-end messaging possible. Thus, it is crucial to make sure that nodes have incentives to forward messages for others, despite the fact that the routing protocols in VANETs are different from traditional end-to-end routing protocols. In this paper, stimulation of message forwarding in VANETs is concerned. This approach is based on coalitional game theory, particularly, an incentive scheme for VANETs is proposed and with this scheme, following the routing protocol is in the best interest of each node. In addition, a lightweight approach is proposed for taking the limited storage space of each node into consideration. [30] discussed about a system, In this proposal, a neural network approach is proposed for energy conservation routing in a wireless sensor

network. Our designed neural network system has been successfully applied to our scheme of energy conservation. Neural network is applied to predict Most Significant Node and selecting the Group Head amongst the association of sensor nodes in the network. After having a precise prediction about Most Significant Node, we would like to expand our approach in future to different WSN power management techniques and observe the results. In this proposal, we used arbitrary data for our experiment purpose; it is also expected to generate a real time data for the experiment in future and also by using adhoc networks the energy level of the node can be maximized. The selection of Group Head is proposed using neural network with feed forward learning method. And the neural network found able to select a node amongst competing nodes as Group Head.

[31] discussed about a method, Optimality results are presented for an end-to-end inference approach to correct(i.e., diagnose and repair) probabilistic network faults at minimum expected cost. One motivating application of using this end-to-end inference approach is an externally managed overlay network, where we cannot directly access and monitor nodes that are independently operated by different administrative domains, but instead we must infer failures via end to-end measurements. We show that first checking the node that is most likely faulty or has the least checking cost does not necessarily minimize the expected cost of correcting all faulty nodes. In view of this, we construct a potential function for identifying the candidate nodes, one of which should be first checked by an optimal strategy. Due to the difficulty of finding the best node from the set of candidate nodes, we propose several efficient heuristics that are suitable for correcting fault nodes in large-scale overlay networks. We show that the candidate node with the highest potential is actually the best node in at least 95% of time, and that checking first the candidate nodes can reduce the cost of correcting faulty nodes as compared to checking first the most likely faulty nodes. [32] discussed about a method, Sensor network consists of low cost battery powered nodes which is limited in power. Hence power efficient methods are needed for data gathering and aggregation in order to achieve prolonged network life. However, there are several energy efficient routing protocols in the literature; quiet of them are centralized approaches, that is low energy conservation. This paper presents a new energy efficient routing scheme for data gathering that combine the property of minimum spanning tree and shortest path tree-based on routing schemes. The efficient routing approach used here is Localized Power-Efficient Data Aggregation Protocols (L-PEDAPs) which is robust and localized. This is based on powerful localized structure, local minimum spanning tree (LMST). The actual routing tree is constructed over this topology. There is also a solution involved for route maintenance procedures that will be executed when a sensor node fails or a new node is added to the network. [33] discussed about a method, Wireless sensor networks utilize large numbers of wireless sensor nodes to collect information from their sensing terrain. Wireless

sensor nodes are battery-powered devices. Energy saving is always crucial to the lifetime of a wireless sensor network. Recently, many algorithms are proposed to tackle the energy saving problem in wireless sensor networks. There are strong needs to develop wireless sensor networks algorithms with optimization priorities biased to aspects besides energy saving. In this project, a delay-aware data collection network structure for wireless sensor networks is proposed based on Multi hop Cluster Network. The objective of the proposed network structure is to determine delays in the data collection processes. The path with minimized delay through which the data can be transmitted from source to destination is also determined. AODV protocol is used to route the data packets from the source to destination. [34] discussed about a method, This scheme investigates a traffic-light-based intelligent routing strategy for the satellite network, which can adjust the pre-calculated route according to the real-time congestion status of the satellite constellation. In a satellite, a traffic light is deployed at each direction to indicate the congestion situation, and is set to a relevant color, by considering both the queue occupancy rate at a direction and the total queue occupancy rate of the next hop. The existing scheme uses TLR based routing mechanism based on two concepts are DVTR Dynamic Virtual Topology Routing (DVTR) and Virtual Node (VN). In DVTR, the system period is divided into a series of time intervals. On-off operations of ISLs are supposed to be performed only at the beginning of each interval and the whole topology keeps unchanged during each interval. But it has delay due to waiting stage at buffer. So, this method introduces an effective multi-hop scheduling routing scheme that considers the mobility of nodes which are clustered in one group is confined within a specified area, and multiple groups move uniformly across the network. [35] discussed about a method, End-to-end inference to diagnose and repair the data-forwarding failures, our optimization goal to minimize the faults at minimum expected cost of correcting all faulty nodes that cannot properly deliver data. First checking the nodes that has the least checking cost does not minimize the expected costin fault localization. We construct a potential function for identifying the candidate nodes, one of which should be first checked by an optimal strategy. We proposes efficient inferring approach to the node to be checked in large-scale networks. [36] proposed a system about Efficient Sensor Network for Vehicle Security. Today vehicle theft rate is very high, greater challenges are coming from thieves thus tracking/ alarming systems are being deployed with an increasingly popularity .As per as security is concerned today most of the vehicles are running on the LPG so it is necessary to monitor any leakage or level of LPG in order to provide safety to passenger. Also in this fast running world everybody is in hurry so it is required to provide fully automated maintenance system to make the journey of the passenger safe, comfortable and economical. To make the system more intelligent and advanced it is required to introduce some important developments that can help to promote not only the luxurious but also safety drive to the

owner. The system "Efficient Sensor Network for Vehicle Security", introduces a new trend in automobile industry. [37] discussed about Intelligent Sensor Network for Vehicle Maintenance System. Modern automobiles are no longer mere mechanical devices; they are pervasively monitored through various sensor networks & using integrated circuits and microprocessor based design and control techniques while this transformation has driven major advancements in efficiency and safety. In the existing system the stress was given on the safety of the vehicle, modification in the physical structure of the vehicle but the proposed system introduces essential concept in the field of automobile industry. It is an interfacing of the advanced technologies like Embedded Systems and the Automobile world. This "Intelligent Sensor Network for Vehicle Maintenance System" is best suitable for vehicle security as well as for vehicle's maintenance. Further it also supports advanced feature of GSM module interfacing. Through this concept in case of any emergency or accident the system will automatically sense and records the different parameters like LPG gas level, Engine Temperature, present speed and etc. so that at the time of investigation this parameters may play important role to find out the possible reasons of the accident. Further, in case of accident & in case of stealing of vehicle GSM module will send SMS to the Police, insurance company as well as to the family members. [38] discussed about an eye blinking sensor. Nowadays heart attack patients are increasing day by day."Though it is tough to save the heart attack patients, we can increase the statistics of saving the life of patients & the life of others whom they are responsible for. The main design of this project is to track the heart attack of patients who are suffering from any attacks during driving and send them a medical need & thereby to stop the vehicle to ensure that the persons along them are safe from accident. Here, an eye blinking sensor is used to sense the blinking of the eye. spO2 sensor checks the pulse rate of the patient. Both are connected to micro controller.If eye blinking gets stopped then the signal is sent to the controller to make an alarm through the buffer. If spO2 sensor senses a variation in pulse or low oxygen content in blood, it may results in heart failure and therefore the controller stops the motor of the vehicle. Then Tarang F4 transmitter is used to send the vehicle number & the mobile number of the patient to a nearest medical station within 25 km for medical aid. The pulse rate monitored via LCD .The Tarang F4 receiver receives the signal and passes through controller and the number gets displayed in the LCD screen and an alarm is produced through a buzzer as soon the signal is received. [39] discussed about a system, GSM based AMR has low infrastructure cost and it reduces man power. The system is fully automatic, hence the probability of error is reduced. The data is highly secured and it not only solve the problem of traditional meter reading system but also provides additional features such as power disconnection, reconnection and the concept of power management. The database stores the current month and also all the previous month data for the future use. Hence the system saves a lot amount of time and energy. Due to the power fluctuations, there might be a damage in the home appliances. Hence to avoid such damages and to protect the appliances, the voltage controlling method can be implemented. [40] discussed about a project, in this project an automatic meter reading system is designed using GSM Technology. The embedded micro controller is interfaced with the GSM Module. This setup is fitted in home. The energy meter is attached to the micro controller. This controller reads the data from the meter output and transfers that data to GSM Module through the serial port. The embedded micro controller has the knowledge of sending message to the system through the GSM module. Another system is placed in EB office, which is the authority office. When they send "unit request" to the microcontroller which is placed in home. Then the unit value is sent to the EB office PC through GSM module. According to the readings, the authority officer will send the information about the bill to the customer. If the customer doesn't pay bill on-time, the power supply to the corresponding home power unit is cut, by sending the command through to the microcontroller. Once the payment of bill is done the power supply is given to the customer. Power management concept is introduced, in which during the restriction mode only limited amount of power supply can be used by the customer.

[41] discussed about Positioning Of a Vehicle in a Combined Indoor-Outdoor Scenario, The development in technology has given us all sophistications but equal amounts of threats too. This has brought us an urge to bring a complete security system that monitors an object continuously. Consider a situation where a cargo vehicle carrying valuable material is moving in an area using GPS (an outdoor sensor) we can monitor it but the actual problem arises when its movement involves both indoor (within the industry) and outdoor because GPS has its limitations in indoor environment. Hence it is essential to have an additional sensor that would enable us a continuous monitoring /tracking without cutoff of the signal. In this paper we bring out a solution by combining Ultra wide band (UWB) with GPS sensory information which eliminates the limitations of conventional tracking methods in mixed scenario(indoor and outdoor) The same method finds application in mobile robots, monitoring a person on grounds of security, etc. [42] discussed about Nanorobots Control Activation For Stenosed Coronary Occlusion, this paper presents the study of nanorobots control activation for stenosed coronary occlusion, with the practical use of chemical and thermal gradients for biomedical problems. The recent developments on nanotechnology new materials allied with electronics device miniaturization may enable nanorobots for the next few years. New possibilities for medicine are expected with the development of nanorobots. It may help to advance the treatment of a wide number of diseases: cardiovascular problems, neurosurgery, cancer, diabetes and new cell therapies. The implementation of new methodologies to help on manufacturing analyses and system design for the development of nanoscale molecular machine is one of the most important fields for research. The use of 3D physically

based simulation in conjunction with clinical data may provide ways to design practical approaches for control and transducers development. [43] proposed a method in which the minimization is per-formed in a sequential manner by the fusion move algorithm that uses the QPBO min-cut algorithm. Multi-shape GCs are proven to be more beneficial than single-shape GCs. Hence, the segmentation methods are validated by calculating statistical measures. The false positive (FP) is reduced and sensitivity and specificity improved by multiple MTANN. [44] proposed a system, this system has concentrated on finding a fast and interactive segmentation method for liver and tumor segmentation. In the pre-processing stage, Mean shift filter is applied to CT image process and statistical thresholding method is applied for reducing processing area with improving detections rate. In the Second stage, the liver region has been segmented using the algorithm of the proposed method. Next, the tumor region has been segmented using Geodesic Graph cut method. Results show that the proposed method is less prone to shortcutting than typical graph cut methods while being less sensitive to seed placement and better at edge localization than geodesic methods. This leads to increased segmentation accuracy and reduced effort on the part of the user. Finally Segmented Liver and Tumor Regions were shown from the abdominal Computed Tomographic image. [45] proposed a system, in which a predicate is defined for measuring the evidence for a boundary between two regions using Geodesic Graph-based representation of the image. The algorithm is applied to image segmentation using two different kinds of local neighborhoods in constructing the graph. Liver and hepatic tumor segmentation can be automatically processed by the Geodesic graph-cut based method. This system has concentrated on finding a fast and interactive segmentation method for liver and tumor segmentation. In the preprocessing stage, the CT image process is carried over with mean shift filter and statistical thresholding method for reducing processing area with improving detections rate. Second stage is liver segmentation; the liver region has been segmented using the algorithm of the proposed method. The next stage tumor segmentation also followed the same steps. Finally the liver and tumor regions are separately segmented from the computer tomography image. [46] proposed a system in which the cross-diamond search algorithm employs two diamond search patterns (a large and small) and a halfway-stop technique. It finds small motion vectors with fewer search points than the DS algorithm while maintaining similar or even better search quality. The efficient Three Step Search (E3SS) algorithm requires less computation and performs better in terms of PSNR. Modified objected block-base vector search algorithm (MOBS) fully utilizes the correlations existing in motion vectors to reduce the computations. Fast Objected - Base Efficient (FOBE) Three Step Search algorithm combines E3SS and MOBS. By combining these two existing algorithms CDS and MOBS, a new algorithm is proposed with reduced computational complexity without degradation in quality. [47] proposed a system in which this study presented the implementation of two fully automatic liver and tumors segmentation techniques and their comparative assessment. The described adaptive initialization method enabled fully automatic liver surface segmentation with both GVF active contour and graph-cut techniques, demonstrating the feasibility of two different approaches. The comparative assessment showed that the graph-cut method provided superior results in terms of accuracy and did not present the described main limitations related to the GVF method. The proposed image processing method will improve computerized CT-based 3-D visualizations enabling noninvasive diagnosis of hepatic tumors. The described imaging approach might be valuable also for monitoring of postoperative outcomes through CT-volumetric assessments. Processing time is an important feature for any computer-aided diagnosis system, especially in the intra-operative phase. [48] proposed a system in which an automatic anatomy segmentation method is proposed which effectively combines the Active Appearance Model, Live Wire and Graph Cut (ALG) ideas to exploit their complementary strengths. It consists of three main parts: model building, initialization, and delineation. For the initialization (recognition) part, a pseudo strategy is employed and the organs are segmented slice by slice via the OAAM (Oriented Active Appearance method). The purpose of initialization is to provide rough object localization and shape constraints for a latter GC method, which will produce refined delineation. It is better to have a fast and robust method than a slow and more accurate technique for initialization. [49] proposed a system which uses intermediate features of maximum overlap wavelet transform (IMOWT) as a pre-processing step. The coefficients derived from IMOWT are subjected to 2D histogram Grouping. This method is simple, fast and unsupervised. 2D histograms are used to obtain Grouping of color image. This Grouping output gives three segmentation maps which are fused together to get the final segmented output. This method produces good segmentation results when compared to the direct application of 2D Histogram Grouping. IMOWT is the efficient transform in which a set of wavelet features of the same size of various levels of resolutions and different local window sizes for different levels are used. IMOWT is efficient because of its time effectiveness, flexibility and translation invariance which are useful for good segmentation results. [50] proposed a system in which OWT extracts wavelet features which give a good separation of different patterns. Moreover the proposed algorithm uses morphological operators for effective segmentation. From the qualitative and quantitative results, it is concluded that our proposed method has improved segmentation quality and it is reliable, fast and can be used with reduced computational complexity than direct applications of Histogram Clustering. The main advantage of this method is the use of single parameter and also very faster. While comparing with five color spaces, segmentation scheme produces results noticeably better in RGB color space compared to all other color spaces.

[51] presented an automatic segmentation method which effectively combines Active Contour Model, Live Wire method and Graph Cut approach (CLG). The aim of Live wire method is to provide control to the user on segmentation process during execution. Active Contour Model provides a statistical model of object shape and appearance to a new image which are built during a training phase. In the graph cut technique, each pixel is represented as a node and the distance between those nodes is represented as edges. In graph theory, a cut is a partition of the nodes that divides the graph into two disjoint subsets. For initialization, a pseudo strategy is employed and the organs are segmented slice by slice through the OACAM (Oriented Active Contour Appearance Model). Initialization provides rough object localization and shape constraints which produce refined delineation. This method is tested with different set of images including CT and MR images especially 3D images and produced perfect segmentation results. [52] proposed a work, in this work, a framework of feature distribution scheme is proposed for object matching. In this approach, information is distributed in such a way that each individual node maintains only a small amount of information about the objects seen by the network. Nevertheless, this amount is sufficient to efficiently route queries through the network without any degradation of the matching performance. Digital image processing approaches have been investigated to reconstruct a high resolution image from aliased low resolution images. The accurate registrations between low resolution images are very important to the reconstruction of a high resolution image. The proposed feature distribution scheme results in far lower network traffic load. To achieve the maximum performance as with the full distribution of feature vectors, a set of requirements regarding abstraction, storage space, similarity metric and convergence has been proposed to implement this work in C++ and QT. [53] discussed about an important work which presents a metal detecting robot using RF communication with wireless audio and video transmission and it is designed and implemented with Atmel 89C51 MCU in embedded system domain. The robot is moved in particular direction using switches and the images are captured along with the audio and images are watched on the television .Experimental work has been carried out carefully. The result shows that higher efficiency is indeed achieved using the embedded system. The proposed method is verified to be highly beneficial for the security purpose and industrial purpose. The mine sensor worked at a constant speed without any problem despite its extension, meeting the specification required for the mine detection sensor. It contributed to the improvement of detection rate, while enhancing the operability as evidenced by completion of all the detection work as scheduled. The tests demonstrated that the robot would not pose any performance problem for installation of the mine detection sensor. On the other hand, however, the tests also clearly indicated areas where improvement, modification, specification change and additional features to the robot are required to serve better for the intended purpose. Valuable data and hints were obtained in connection with such issues as control method with the mine detection robot tilted, merits and drawbacks of

mounting the sensor, cost, handling the cable between the robot and support vehicle, maintainability, serviceability and easiness of adjustments. These issues became identified as a result of our engineers conducting both the domestic tests and the overseas tests by themselves, and in this respect the findings were all the more practical. [54] discussed about Vision based Path Planning and Tracking control using Mobile Robot. This paper proposes a novel methodology for autonomous mobile robot navigation utilizing the concept of tracking control. Vision-based path planning and subsequent tracking are performed by utilizing proposed stable adaptive state feedback fuzzy tracking controllers designed using the Lyapunov theory and particle-swarm-optimization (PSO)-based hybrid approaches. The objective is to design two self-adaptive fuzzy controllers, for x-direction and y-direction movements, optimizing both its structures and free parameters, such that the designed controllers can guarantee desired stability and, simultaneously, can provide satisfactory tracking performance for the vision-based navigation of mobile robot. The design methodology for the controllers simultaneously utilizes the global search capability of PSO and Lyapunovtheory-based local search method, thus providing a high degree of automation. Two different variants of hybrid approaches have been employed in this work. The proposed schemes have been implemented in both simulation and experimentations with a real robot, and the results demonstrate the usefulness of the proposed concept. [55] discussed about a model, a new model is designed for boundary detection and applied it to object segmentation problem in medical images. Our edge following technique incorporates a vector image model and the edge map information. The proposed technique was applied to detect the object boundaries in several types of noisy images where the ill-defined edges were encountered. The proposed techniques performances on object segmentation and computation time were evaluated by comparing with the popular methods, i.e., the ACM, GVF snake models. Several synthetic noisy images were created and tested. The method is successfully tested in different types of medical images including aortas in cardiovascular MR images, and heart in CT images. [56] discussed about the issue of intuitive frontal area/foundation division in still pictures is of awesome down to earth significance in picture altering. They maintain a strategic distance from the limit length predisposition of chart cut strategies and results in expanded affectability to seed situation. Another proposed technique for completely programmed handling structures is given taking into account Graph-cut and Geodesic Graph cut calculations. This paper addresses the issue of dividing liver and tumor locales from the stomach CT pictures. The absence of edge displaying in geodesic or comparable methodologies confines their capacity to exactly restrict object limits, something at which chart cut strategies by and large exceed expectations. A predicate is characterized for measuring the confirmation for a limit between two locales utilizing Geodesic Graph-based representation of the picture. The calculation is connected to picture division utilizing two various types of nearby neighborhoods in building the chart. Liver and hepatic tumor division can be naturally prepared by

the Geodesic chart cut based strategy. This framework has focused on finding a quick and intuitive division strategy for liver and tumor division. In the pre-handling stage, Mean movement channel is connected to CT picture process and factual thresholding technique is connected for diminishing preparing zone with enhancing discoveries rate. In the Second stage, the liver area has been divided utilizing the calculation of the proposed strategy. Next, the tumor district has been portioned utilizing Geodesic Graph cut strategy. Results demonstrate that the proposed strategy is less inclined to shortcutting than run of the mill diagram cut techniques while being less delicate to seed position and preferable at edge restriction over geodesic strategies. This prompts expanded division exactness and decreased exertion with respect to the client. At long last Segmented Liver and Tumor Regions were appeared from the stomach Computed Tomographic picture. [57] discussed about efficient content-based medical image retrieval, dignified according to the Patterns for Next generation Database systems (PANDA) framework for pattern representation and management. The proposed scheme use 2-D Wavelet Transform that involves block-based low-level feature extraction from images. An expectation–maximization algorithm is used to cluster the feature space to form higher level, semantically meaningful patterns. Then, the 2-component property of PANDA is exploited: the similarity between two clusters is estimated as a function of the similarity of both their structures and the measure components. Experiments were performed on a large set of reference radiographic images, using different kinds of features to encode the low-level image content. Through this experimentation, it is shown that the proposed scheme can be efficiently and effectively applied for medical image retrieval from large databases, providing unsupervised semantic interpretation of the results, which can be further extended by knowledge representation methodologies. [58] discussed about Automatic Number Plate Recognition (ANPR), Automatic Number Plate Recognition (ANPR) is a real time embedded system which automatically recognizes the license number of vehicles. In this paper, the task of recognizing number plate for Indian conditions is considered, where number plate standards are rarely followed. The system consists of integration of algorithms like: 'Feature-based number plate Localization' for locating the number plate, 'Image Scissoring' for character segmentation and statistical feature extraction for character recognition; which are specifically designed for Indian number plates. The system can recognize single and double line number plates under widely varying illumination conditions with a success rate of about 82%. [59] discussed about adaptive MED filter, this improved method is a simple, and efficient way to remove impulse noise from highly corrupted digital images. This method has two stages. The first stage is to detect the impulse noise in the image. In this stage, the pixels are divided into two classes (noise free pixels/ noise free pixels) based on only the intensity values .Then, the second stage is to eliminate the impulse noise from the image. In this stage, only the "noise-pixels" are processed. But the "noise-free pixels" are not modified and are copied directly to the output image. The method used gradient based adptive median filter,

so that this method adaptively changes the size of the median filter based on the number of the "noise-free pixels" in the neighborhood. For the filtering, the gradian value of every pixel location at (x,y) is calculated. Then the median value can be find out under the consideration of only "noise-free pixels" .In this algorithm for effective noise detection is proposed. The Proposed algorithm produces better edge and fine details preservations and reduces blurring at the high density impulse noise. Because of its simplicity, this proposed method is suitable to be implemented in consumer electronics products such as digital television, or digital camera. [60] narrated about a type of skin malignant growth which is melanoma. There are numerous types of skin malignancy, for example, Basal Cell Carcinoma (BCC), Squamous Cell Carcinoma (SCC) and Melanoma. In which the deadliest type of skin disease is the Melanoma. Demise pace of melanoma has expanded among skin malignant growth patients and it is hazardous. The death rate is highest among among middle aged and elderly individuals. It is seen as risky when it develops beyond the dermis of the skin. This paper deals with a survey on a few computerized analysis procedures for diagnosing melanoma. These procedures extract different parameters, for example, shape, size, surface, shading and different properties of lesions which is utilized for additional exploration. The precise skin affected region which is the skin lesion or area of intrigue will be taken out for automated medical procedure. The ATLAS dataset or PH2 dataset pictures are considered for investigation in the majority of the papers.

[61] proposed a system which can achieve a higher throughput and higher energy efficiency. The S-BOX is designed by using Advanced Encryption Standard (AES). The AES is a symmetric key standard for encryption and decryption of blocks of data. In encryption, the AES accepts a plaintext input, which is limited to 128 bits, and a key that can be specified to be 128 bits to generate the Cipher text. In decryption, the cipher text is converted to original one. By using this AES technique the original text is highly secured and the information is not broken by the intruder. From that, the design of S-BOX is used to protect the message and also achieve a high throughput, high energy efficiency and occupy less area. [62] proposed a system which contributes the complex parallelism mechanism to protect the information by using Advanced Encryption Standard (AES) Technique. AES is an encryption algorithm which uses 128 bit as a data and generates a secured data. In Encryption, when cipher key is inserted, the plain text is converted into cipher text by using complex parallelism. Similarly, in decryption, the cipher text is converted into original one by removing a cipher key. The complex parallelism technique involves the process of Substitution Byte, Shift Row, Mix Column and Add Round Key. The above four techniques are used to involve the process of shuffling the message. The complex parallelism is highly secured and the information is not broken by any other intruder. [63] proposed a system in which the complex parallelism technique is used to involve the processing of Substitution Byte, Shift Row, Mix Column and Add Round Key. Using S- Box complex parallelism, the original text is converted into cipher text. From that, we have achieved a

96% energy efficiency in Complex Parallelism Encryption technique and recovering the delay 232 ns. The complex parallelism that merge with parallel mix column and the one task one processor techniques are used. In future, Complex Parallelism single loop technique is used for recovering the original message. [64] proposed a system, Low Voltage Differential Signaling (LVDS) is a way to communicate data using a very low voltage swing (about 350mV) differentially over two PCB traces. It deals about the analysis and design of a low power, low noise and high speed comparator for a high performance Low Voltage Differential Signaling (LVDS) Receiver. The circuit of a Conventional Double Tail Latch Type Comparator is modified for the purpose of low-power and low noise operation even in small supply voltages. The circuit is simulated with 2V DC supply voltage, 350mV 500MHz sinusoidal input and 1GHz clock frequency. LVDS Receiver using comparator as its second stage is designed and simulated in Cadence Virtuoso Analog Design Environment using GPDK 180nm .By this design, the power dissipation, delay and noise can be reduced. [65] proposed a system, this paper presents an effective field programmable gate array (FPGA)-based hardware implementation of a parallel key searching system for the brute-force attack on RC4 encryption. The design employs several novel key scheduling techniques to minimize the total number of cycles for each key search and uses on-chip memories of the FPGA to maximize the number of key searching units per chip. Based on the design, a total of 176 RC4 key searching units can be implemented in a single Xilinx XC2VP20-5 FPGA chip. Operating at a 47-MHz clock rate, the design can achieve a key searching speed of 1.07 x 107 keys per second. Breaking a 40-bit RC4 encryption only requires around 28.5 h. [66] discussed about Improved Particle Swarm Optimization. The fuzzy filter based on particle swarm optimization is used to remove the high density image impulse noise, which occur during the transmission, data acquisition and processing. The proposed system has a fuzzy filter which has the parallel fuzzy inference mechanism, fuzzy mean process, and a fuzzy composition process. In particular, by using no-reference Q metric, the particle swarm optimization learning is sufficient to optimize the parameter necessitated by the particle swarm optimization based fuzzy filter, therefore the proposed fuzzy filter can cope with particle situation where the assumption of existence of "ground-truth" reference does not hold. The merging of the particle swarm optimization with the fuzzy filter helps to build an auto tuning mechanism for the fuzzy filter without any prior knowledge regarding the noise and the true image. Thus the reference measures are not need for removing the noise and in restoring the image. The final output image (Restored image) confirm that the fuzzy filter based on particle swarm optimization attain the excellent quality of restored images in term of peak signal-to-noise ratio, mean absolute error and mean square error even when the noise rate is above 0.5 and without having any reference measures. [67] proposed a system, this fully automatic vehicle is equipped by micro controller, motor driving mechanism and battery. The power stored in the battery is used to drive the DC motor that causes the movement to AGV. The speed of rotation of DC motor i.e., velocity of AGV is controlled by the microprocessor controller.This is an era of automation where it is broadly defined as replacement of manual effort by mechanical power in all degrees of automation. The operation remains an essential part of the system although with changing demands on physical input as the degree of mechanization is increased. [68] proposed a principle in which another NN yield input control law was created for an under incited quad rotor UAV which uses the regular limitations of the under incited framework to create virtual control contributions to ensure the UAV tracks a craved direction. Utilizing the versatile back venturing method, every one of the six DOF are effectively followed utilizing just four control inputs while within the sight of un demonstrated flow and limited unsettling influences. Elements and speed vectors were thought to be inaccessible, along these lines a NN eyewitness was intended to recoup the limitless states. At that point, a novel NN virtual control structure which permitted the craved translational speeds to be controlled utilizing the pitch and the move of the UAV. At long last, a NN was used in the figuring of the real control inputs for the UAV dynamic framework. Utilizing Lyapunov systems, it was demonstrated that the estimation blunders of each NN, the spectator, Virtual controller, and the position, introduction, and speed following mistakes were all SGUUB while unwinding the partition Principle. [69] proposed a principle in which the division is the urgent stage in iris acknowledgment. We have utilized the worldwide limit an incentive for division. In the above calculation we have not considered the eyelid and eyelashes relics, which corrupt the execution of iris acknowledgment framework. The framework gives sufficient execution likewise the outcomes are attractive. Assist advancement of this technique is under way and the outcomes will be accounted for sooner rather than later. Based on the reasonable peculiarity of the iris designs we can anticipate that iris acknowledgment framework will turn into the main innovation in personality verification.In this paper, iris acknowledgment calculation is depicted. As innovation advances and data and scholarly properties are needed by numerous unapproved work force. Therefore numerous associations have being scanning routes for more secure confirmation strategies for the client get to. The framework steps are catching iris designs; deciding the area of iris limits; changing over the iris limit to the binarized picture; The framework has been actualized and tried utilizing dataset of number of tests of iris information with various complexity quality. [70] discussed that Patents of today's world are the significant tool of Faculty Members, Researchers, Industrialists and Students in the Education Field. They can easily protect our invention. If they are original and they meet the specifications of the patent authority of corresponding country, then a grant is given with a Patent number (should not be confused with the application number). They can protect a trademark, design, process or may be a product even based on how original it is, how practically it can apply in a society or country, how suitable it is in its corresponding field, how we utilise in real time-practical scenario and so on. A Patent can be Design Patent, Standard Patent, Utility Patent or Innovation Patent.

Generally speaking, an invention can be protected upto 20 years. [71] discussed about a review paper which brings out a summary of popular image processing techniques in practice for students, faculty members and researchers in medical image processing field. Through Image processing, we do some operations on an image, to get an enhanced image or we try to acquire some useful information from it. They help in manipulating digital images through the use of computers. We Perform Image Restoration, Linear Filtering, Independent Component Analysis, Pixelation, Template Matching, Image Generation Techniques even to image to obtain promisable results. This Review Paper also summarizes some of the enhancement approaches which have impacted image segmentation approaches over these years.

V. BOOKS

[72] discussed about E-plane and H-plane patterns which forms the basis of Microwave Engineering principles. [73] discussed about principles of Semiconductors which forms the basis of Electronic Devices and Components. [74] presented a book, We know, correspondence implies exchange of data from source to beneficiary. In conventional communication, when source and beneficiary were situated in long separation, this exchange used to occur by interfacing source and beneficiary physically through leading wires, which would convey data as electrical signs. Any exchange of data between focuses that don't have a physical association, similar to wire or link association, would be WIRELESS COMMUNICATION. In 1897 Gugliemo Marconi was the first to show that it was conceivable to build up a ceaseless correspondence stream with the boats that were cruising in the English Channel, by methods for radio waves. From that point forward, the remote advancements that make "moving" correspondence feasible for us have developed strikingly. Today, encouraged by RF circuit manufacture and advanced exchanging systems, reasonable rapid media transmission has been to a great extent sent over the world. Living in an innovation, information driven world powers our requirement for a quick and solid remote association whether we're grinding away, at home, or in a hurry. As indicated by the CTIA – The Wireless Association, association speeds by means of portable systems dramatically increased from 2012 to 2013.The interest for remote network has soar in the most recent decade and considerably more so over the most recent couple of years. We request quick associations that can bolster the greater part of our remote needs and those of others. From home systems to work and the café down the road, we hope to be associated on a nonstop premise. CTIA reports that in 2013 versatile activity became roughly 81%. This is one of numerous pointers that our interest for availability, speed, and support is at an unequaled high and developing.

WiMAX is basically a cutting edge remote innovation that improves broadband remote get to. Along these lines, one might say that WiMAX is a progressive remote innovation that, we accept, could change the remote innovation scene impressively. The quick development of remote correspondence and its unavoidable use in all kinds of different backgrounds are changing the way we impart in all major ways. It is a standout amongst the most dynamic regions in the correspondence field today. Genuine Wireless correspondences have picked up a force in the most recent decade of twentieth century with the achievement of second Generation (2G) of advanced cell portable administrations. Overall accomplishments of Global System for Mobile Communications (GSM), Interim Standard 95 (IS-95), Personal computerized Cellular (PDC) and Advanced Mobile Phone System (IS-54/136) have empowered inescapable lifestyles for the new data and correspondence innovation time. Second Generation (2G), 2.5G, and Third Generation (3G) guidelines of portable frameworks are being sent wherever around the world. Overall Interoperability for Microwave Access (WiMAX) is a benchmarks based remote innovation for giving fast, last-mile broadband availability to homes and organizations and for versatile remote systems. WiMAX is like Wi-Fi however offers bigger data transmission, more grounded encryption, and enhanced execution over longer separations by interfacing between accepting stations that are not in the viewable pathway. Universally, WiMAX has been finding a home among developing markets that don't have a not too bad wired infrastructure. [75] presented a brief outline on Electronic Devices and Circuits which forms the basis of Diodes, Clippers and Clampers. [76] presented a brief outline on Technical Challenges In Cryptography and Information Security, Cryptology is a youthful science. In spite of the fact that it has been utilized for a huge number of years to shroud mystery messages, orderly investigation of cryptology as a science (and maybe a craftsmanship) just began around one hundred years back. The principal known proof of the utilization of cryptography (in some shape) was found in an engraving cut around 1900 BC, in the fundamental load of the tomb of the aristocrat Khnumhotep II, in Egypt. The copyist utilized some strange hieroglyphic images all over set up of more normal ones. The design was not to shroud the message but rather maybe to change its shape in a way which would influence it to seem stately. In spite of the fact that the engraving was not a type of mystery composing, but rather joined a type of change of the first content, and is the most seasoned known content to do as such. Confirmation of some utilization of cryptography has been seen in most major early developments. "Arthshashtra", a great work on statecraft composed by Kautalya, portrays the undercover work benefit in India and notices offering assignments to spies in "mystery expressing" - sounds like an antiquated variant of James Bond?The mystery of your message ought to dependably rely upon the mystery of the key, and not on the mystery of the encryption framework. (This is known as Kerckhoffs' standard.). Identified with the above, dependably utilize figures which have been freely checked on and have been built up as a standard. Utilizing "mystery crypto" is terrible, on the grounds that simply like the Caesar figure, once the

framework is known, all messages can be unscrambled. For instance, if your key is traded off, an aggressor could get to your messages; in any case, if the assailant can bargain the crypto framework itself, they can get the plain content of each message (not only for a solitary individual) scrambled by that framework. After its HR, data is an association's most vital resource. As we have seen in past parts, security and hazard administration is information driven. All endeavors to ensure frameworks and systems endeavor to accomplish three results: information accessibility, uprightness, and classification. Furthermore, as we have additionally observed, no foundation security controls are 100% viable. In a layered security demonstrate, it is frequently important to actualize one last counteractive action control wrapped around delicate data: encryption. Encryption isn't a security panacea. It won't illuminate every one of your information driven security issues. Or maybe, it is basically one control among numerous. In this part, we take a gander at encryption's history, its difficulties, and its part in security architecture.One of the most punctual encryption techniques is the move figure. A figure is a technique, or calculation, that proselytes plaintext to ciphertext. [77] presented an Elaborate Study On Electronic Devices & Circuits to acquaint the students with the construction, theory and operation of the basic electronic devices such as PN junction diode, Bipolar and Field effect Transistors, Power control devices, LED, LCD and other Opto-electronic devices. [78] presented a book, this book makes students to expose themselves to basic electronic devices, be familiar with the theory, construction, and operation of Basic electronic devices.

VI. PATENTS

[79] discussed about a disclosure which is made regarding a driving alert system which is designed in the form of a neck cushion which has the capability to sense the posture of the drivers neck position so as to identify whether the driver is alert and if he is dozing of. The system is made intelligent to obtain data from the movement so as to produce triggers to alert the user and to keep him/her awake to avoid accidents. The system is also linked to a mobile computing device so as to provide a report of the analysis done. The drivers location can also be tracked using the same. [80] discussed about a disclosure which is made regarding a gear blocking gear cover for the four wheeler vehicle where the protective cover has been with touch sensors and biometric sensors. Here in case of theft even if the car is started without a key the gear system is locked using biometric locks which can read the palm of the user to unlock the gear system thus protecting the vehicle against any form of theft. This device can be attached to any type of four wheeler vehicle. [81] discussed about a disclosure which is made regarding a wallet safety where a locking system is designed along with an automatic credit –debit card eject system. The wallet is provided with a screen display to select the card and to provide finger print authentication to access the wallet and to select the card

which needs to be ejected out of the wallet for usage. The wallet is connected to a mobile device which can remotely monitoring its usage and location in case wallet is lost. [82] discussed about a disclosure which is made regarding an apparatus to identify any toxic material contaminating into any drinkable liquid consumed by the humans or animals. A drop of any form of liquid can be taken and can be dripped onto the sensor of the keychain so as to identify whether the liquid has any unwanted formulation which is not safe to consume. The Keychain is programmed with color changing indication system to notify the purity of the liquid or otherwise any contamination if identified. [83] brought out an invention which discloses a system and method of representing health data of a patient. The invention comprises of a device 100 including a display module 102, a three dimensional sensor camera 101, a processor 107, a temperature sensor, a plurality of modules configured in the device including a template module 103, a healthcare provider module 104, a patient module 105, a processor 107, a server 108 connected to the device 100. The three dimensional sensor camera 101 is configured for capturing a three dimensional image of the patient, the template module 103 is configured for storing three dimensional graphical anatomical templates, the healthcare provider module 104 is configured for providing access to a healthcare provider and the patient module 105 is configured for providing access to a patient. [84] brought out present disclosure which provides an electrocardiogram remote monitoring system based on artificial intelligence including a patient 5 monitoring unit with a sensor system and a microcontroller . A server unit is connected to the patient monitoring unit , wherein the server unit includes a database and an artificial intelligence module. A patient module, a hospital module and a guardian module is connected to the server unit through a communication network . The artificial intelligence module analyses data received from the microcontroller for diagnosing health of heart of the patient, predicts a health of the patient based on data stored in the database, and the server unit transmits the analyzed and predicted data to the hospital module, the guardian module 15 and the patient module. [85] brought out present disclosure which provides a system for monitoring and controlling farming using drone technology comprising a drone system for monitoring the farm and transmitting information and a ground control system for controlling the drone system and receiving the information. A camera is provided in the drone system for capturing images and video, a GPS module is provided in the drone system for locating image and video captured by the camera, a sensor module is provided in the drone system for measuring parameters of temperature, humidity, gas and pH. A microcontroller is provided in the ground control system for processing the parameters and transmitting to an artificial intelligence module and the artificial intelligence module is configured for determining present crop growth and predicting future crop growth in the farm based on the data. [86] analyzed that the reason that every family member will be employed and busy, the health monitoring of elderly people and patients has

become very crucial. In the proposed methodology caretakers can get the information of the temperature and the pulse rate of the people being monitored at home. User can also get the information about the air quality in the home so that the system will generate an alarm if any hazardous gas is detected. Here further herein we have implemented a fuzzy logic approach for real time monitoring and analysis of the data collected from temperature sensor, Heart beat sensor and Gas sensor. Based on the trained data and the collected data from the sensors outliers will be detected. The collected data sent to the cloud can be downloaded using the Thing speak platform. The future work has also been proposed and is planned to automate the message sending of the outliers detected to the caretakers and the doctors using deep learning. [87] analyzed that the present invention relates to an IOT enabled device for warning people from electrically shorted poles at public places. The proposed solution which is needed to be fitted into the poles in public area will alert the people nearby and also will alert the nearby electricity department in a short condition. The sensing node comprises of a computing unit to execute all the desired tasks as specified using the onboard algorithms, a current sensing unit to detect the presence of current in the pole, a GSM Module to alert the electricity department about the fault and its location, and a buzzer to alert the peoples nearby. Herein a smart device to identify and warn people from electrically shorted poles at public places comprises electric poles, computing unit to execute all the desired tasks as specified using the onboard algorithms, a current sensing unit to detect the presence of current in the pole, a GSM Module to alert the electricity department about the fault and its location, and a buzzer to alert the peoples nearby. Whenever the system detects the presence of current exceeding a set threshold in its pole, it activates the buzzer to alert the people nearby from coming nearby. The system use its integrated GSM module to send a POST request into the custom IoT server through secured APIs. Once the data is logged into the server, there is a smartphone application for the electricity department authority which parse the data from the server and starts an alert notification which can then be used by them to get there and fix it faster. [88] discussed that K-means transformation, histogram equalization, linear contrast stretching, and share-based features are all used to detect leukemia. A method for automatically classifying leukocytes using microscopic images is proposed. This proposed model used MATLAB to find leukemia cells in healthy blood cells, and it requires no medical equipment or expert and heavily relies on automation. This technology can detect anemia, malaria, vitamin B12 deficiency, and brain tumors. The proposed method correctly identifies WBCs and leukoblasts in images and refines theidentification, thresholding, and segmentation phases. This improves WBC counting and overall segmentation accuracy, which leads to better shape feature extraction, which is critical for this problem. New features for this type of analysis must also be studied and analyzed. Finding the most discriminatory features will provide the best accuracy. Determining whether adjacent leukocytes can be separated is critical for counting all leukocytes in an image.

[89] presented an innovative visual aid framework for completely blind people, which takes the form of a pair of glasses. The following are some of the most essential characteristics of the proposed device. The complicated algorithm processing is carried out on the Raspberry Pi 3 Model B+, which has low-end computing power. Using a combination of camera and ultrasound sensors and GPSbased location tracking for use in a navigation system, this Internet of things-based device offers advanced dual detection and distance measurement capabilities. This device makes it possible to have better access, solace, and navigational ease to blind people. [90] discussed that Smart wearables are redefining the way people move and behave in real-time. Workers will be alerted to the presence of toxic gases as well as be tracked in the event of an accident if this system is implemented. Additionally, the instrument has sensors for methane and carbon monoxide gases included in its design. The prototype can detect gas in the air, the rate of the miner's breathing, the change in temperature and humidity, and the miner's location at all times. Wi-Fi will be used to transmit all of these parameters to a dynamic internet protocol. Every one of them will be able to make it through the shield. This way, all mineworkers can be monitored, and if something goes wrong, the miner can be rescued as quickly as possible. Using a pulse sensor on the miner's body, the base camp can track the miner's GPS location. It may be necessary to dig a coal mine as soon as possible to save the most people in a disaster. With the help of IoT, we can build a database and, if necessary, communicate with a nearby hospital. Our final consideration will look at market trends and challenges for WHDs to keep in mind. [91] discussed that Blind people cannot do things like navigate on their own, recognize objects, or avoid obstacles because they cannot see where they are going or what is around them. In the future, there will be an article about a new visual aid for people who are completely deaf or blind. As a result, the Raspberry Pi 3 Model B+ was chosen because it is cheap, small, and easy to work with other systems. This model was made to show how the prototype would work and how it would look. The system's obstacle avoidance configuration includes a camera and other sensors and object detection and tracking algorithms to help it avoid things. People can use ultrasonic technology and a camera to figure out how far away they are from a specific object or person, so they can figure out how far away they are. As an extra layer of protection, the GPS system tracks people's movements who cannot see. The products will be lightweight and easy to move, making them easy to move. Regular eyeglasses can be used as a base for these glasses so that you do not have to spend extra money or make things more complicated. Using this idea to make eyeglasses would be easy, and it would not make them more expensive or more complicated. The price or complexity of eyeglasses would not change if we made one of these products, so it would be easy to put one in. [92] discussed that Elections are crucial in forming governments in countries like India. The value of democracy lies in the "Votes" flung

by people, through which they elect their representatives for forming the government. At present Electronic Voting Machine (EVM) is used which has certain disadvantages with respect to security aspects. The main goal of the paper is to design a reliable voting machine with improved security and ease of accessibility while also addressing the shortcomings of the present system. Here, electronic components such as fingerprint sensors, microcontroller, LCD display and Global System for Mobile (GSM) modules are used. The entire process will take place in a secured green cloud domain, thereby reducing the security risks and utilize the computer infrastructure more efficiently with curtailed energy consumption.

[93] discussed about specific Policy document which ensures of which the teaching, learning in addition to assessment methods are upwards to the amount of typically the course and are ideal to the attainment involving objectives and intended understanding outcomes of the program and the course. The particular policy requires that school members use recent in addition to variety of teaching, mastering methods and assessment methods. Higher Quality Accredited Institutions will continue to further more improve the standard involving teaching and learning via recognition, sharing and moving of good practices to be able to inspire the learners to be able to achieve their potentials throughout a multicultural environment in addition to in turn, improve accomplishment, retention and learners pleasure. [94] discussed about specific Policy document which guarantees security and honesty of understudies' records documented and kept in the Registration Office. The records ought to be overseen in a precise and sensible way as indicated by plans created by the Registration Office that keep up these records. The strategy report and methodology spread the accommodation of records and grades to the Registration Office, documenting, putting away and protection arrangement of the understudy records, locking of the class records and the discharging of transcript and testaments. The Policy Document perceives the benefit of giving solid and productive help to every one of its understudies, particularly in danger of scholastic disappointment. Additionally, to guarantee that all understudies with unique needs are agreed suitable help and that their admission to the University will be thought appropriately and decently. This strategy archive establishes the framework for the explanation of understudies' instructive, life and profession objectives and the usage of the University's assets to meet their instructive needs and yearnings. This arrangement report and strategies outline the help furnished to understudies and understudies with extraordinary needs as far as scholastic help, learning chances, and advancement. In addition, it diagrams the advantages of early discovery of scholastically in danger understudies which permits auspicious mediation and provisioning of help and guidance. This strategy and methods will guarantee that understudies with exceptional needs are assessed appropriately by assigned University staff before admission to the University. The reason for the approach archive is to depict a program for the acceptance of new

understudies and transferee that expose understudy obligations and best practice desires. This procedure is pertinent to every new understudy and transferees of the college independent of their place of habitation and scholarly program. [95] discussed about Policy report which guarantee that all its Program contributions are fit-for-reason and that its alumni have the information, aptitudes and capabilities expected upon fruitful finish of their Program, through an intermittent appraisal and

assessment of explicit Student Outcomes and Program Intended Learning Outcomes laid out for each Program. The Policy Document necessitates that appraisal and assessment of understudy results are done toward the finish of every semester. Understudy Outcomes and Program Intended Learning Outcomes are evaluated utilizing the accompanying strategies, if pertinent: 1) direct appraisal by the staff for chosen courses; 2) senior leave review; 3) evaluation of the Student Outcomes and Program Intended Learning Outcomes for terminal task/look into undertaking course(s); 4) self assessment overview on Student Outcomes and Program Intended Learning Outcomes by the understudies; and 5) understudy's practicum boss' assessment of the Student Outcomes and Program Intended Learning Outcomes. [96] discussed about Policy Document which gives rules to leading Program plan, Development, Review and Enhancement. It covers the means in the plan and improvement, audit and upgrade of all the curricular contributions of the Higher Quality Accredited Institutions. [97] discussed about specific Policy document which gives an instrument to tending to understudies' complaints as indicated by fair treatment. This arrangement report incorporates complaints among understudies and understudies, understudies and workforce, understudies and non-scholastic staff, just as understudies and heads. Just endorsed understudy associations direct understudy exercises on or off the grounds. All University exercises directed by an authoritatively perceived understudy association must be endorsed by the Office of the Student Affairs. The motivation behind this strategy report and strategies is to give a lot of techniques to the direct of understudy exercises. This arrangement record and systems covers the arranging, booking, and by and large direct of understudy association exercises. This Policy Document additionally guarantees that the library framework is made accessible to understudies and employees every minute of every day inside and outside the grounds. This approach record and methods mean to give help to all library clients to guarantee full usage of library administrations. This approach report covers all clients of the library which incorporates personnel, understudies and staff. This Policy Document guarantee the particular headings, appropriate documentation and effectiveness of the obtaining and returning of books, reading material, references, diaries/magazines, various media materials, and other library assets in help for educating and learning forms. Understudies and employees will get to the Library framework remotely. This approach report and methodology expect to give explicit bearings and appropriate documentation on how books and other library materials are coursed and controlled and for proficient and quality support of understudies, staff,

non-showing faculty and other individual from the learning network. This approach archive covers all borrowers of books to incorporate personnel, understudies and staff. [98] discussed about Policy Document which consider late expert practices and partners' contributions to guaranteeing that the curricular contributions of the University are applicable and receptive to the requirements of every one of its partners. This is guaranteed through the association of the business specialists (bosses, proficient association and graduated class) in the fields of business, processing and building, in the improvement, audit and upgrade of scholarly contributions, alluded to as Program Industry Advisory Panel. This arrangement archive and strategies traces the choice, endorsement and arrangement of the individuals from the Program Industry Advisory Panel. This strategy record will cover the jobs and obligations of all individuals from the Program Industry Advisory Panel in investigating program curricular offering, research and network commitment. College approaches must be created, reexamined, or stopped through a formal procedure of audit and endorsement. An intermittent audit of built up college arrangements is fundamental to guarantee its legitimacy and fittingness to the reason it was planned. The reason for this arrangement archive and systems is to set up and convey standard strategy for the audit and endorsement of new, addition(s) to, amendments and suspension of University approaches. This strategy report is pertinent to every current arrangement, methodology and rules of the University. [99] discussed about specific Policy document which guarantees that library clients are furnished with library recognizable proof during each exchange finished with the college library. This arrangement record and strategy gives rules in benefiting the Library assets, administrations and other electronic assets. It covers all bonafide understudies, employees and staff of the college. This Policy Document guarantees that library assets are refreshed and adjusted to the foundations assets of the particular course prospectus per program through intermittent obtaining of library assets. This arrangement archive additionally guarantees that library assets such books, references, academic diaries, electronic databases and other educating/learning materials are procured to help the curricular projects. This covers all print and non print materials, books, periodicals and diaries just as electronic assets. It guarantees that all library possessions are appropriately and precisely enrolled. This approach report and strategy guarantees that every single library holding is represented. It covers the whole library property from print to non print, books, periodical, diaries, e assets, and others. It likewise gives effective methods for helping and loaning library materials to every one of its clients. This approach archive and methodology guarantees that all library clients can get the important assets required from the library. This Policy archive and system covers all clients of the library and all the library possessions that are accessible for use by the personnel, staff and understudies. [100] discussed about Policy record guarantees that all its program contributions are fit-for reason and that its alumni are suitably utilized and have the learning, aptitudes and abilities expected of their particular program. All program instructive destinations ought to be adjusted to the Institutional Vision and Mission just as to the Colleges' objectives and goals. This arrangement archive and methods give the vital data to the Assessment and Evaluation of the Program Educational Objectives. This strategy and strategies necessitate that appraisal and assessment of Program Educational Objectives are accomplished for all program contributions yearly for alumni of at any rate three (3) years for undergrad and in any event two (2) years for alumni programs. This Policy Document additionally guarantees to direct customary benchmark for the scholastic projects inside the schools so as to guarantee that the offered projects are state-of-the-art, lined up with the market needs and reasonable with the neighborhood, local and global gauges and references. The strategy record covers the guidelines and procedure of both formal and casual benchmark and characterizes real criteria to be seen during a program benchmark. The arrangement report expects to guarantee that all program formal and casual benchmark exercises are directed in cognizant manner with the prescribed procedures. Benchmark exercises are checked and directed by the depicted procedure and watch the general objectives as referred to inside the policy document.

[101] discussed about Policy Document which characterize a base and most extreme examination term period for undergrad and graduate investigations. This strategy archive and techniques characterize the investigation term for various program levels and understudy classes in undergrad and graduate examinations just as in intelligent manner with the neighborhood standards and guidelines of Higher Education Body. This strategy covers the examination span for the undergrad and graduate projects, which are lined up with the Higher Education Body principles and guidelines. This Policy Document acknowledges students from other schools and credit courses dependent on the Transfer Credit Matrix of the University. The student from another school is required to finish in any event half of the required credit units/hours of a program. The most extreme credit units/hours that are qualified for exchange credits ought not surpass (66%) of the required credit units/hours from the first level of another college. The Practicum/On-the-Job Training and Thesis/Capstone courses are not qualified for credit move. The student from another school must take these courses during his/her residency at University. The reason for the strategy record and technique is to control the senior members and the understudies in the prerequisite and procedure of crediting courses taken from different colleges. This strategy report and method spread the acknowledgment of moving understudy to be conceded credits towards the program, criteria and necessities connected for credit move, required number of credit units/hours and equality, and the evaluation required. This Policy Document likewise gives scholarly help to the scholastically in danger understudies by directing instructional exercise classes. This arrangement record and technique plans to guarantee that the scholastically in danger understudies are given the important help and direction to be capable adapt to the necessities of the course and the program. This strategy archive and method spread any authoritatively enlisted understudies of the University that

need scholarly direction as suggested by the Academic Adviser, and any understudy who is scholastically in danger during the present term of enlistment. It displays the duty of the employees in giving scholastic help to the understudies, when vital. [102] discussed about specific Policy document which keeps up a refreshed stock of the considerable number of books as a major aspect of the library property. The motivation behind this strategy report and methodology is to set up a proficient library stock to limit/wipe out misfortunes in the library accumulation. This strategy archive covers just every one of the books as a component of the library property. This Policy Document additionally guarantees that online databases assets are remotely accessible to the grounds. This strategy record and system advances the utilization of the electronic assets accessible in help to understudies and employees for their learning procedures, educating and inquire about. This arrangement record covers the online database assets, for example, electronic magazines/diaries, digital books, procedures, modified works, references and different references. This Policy Document additionally guarantees that all books and other library assets are returned on schedule and to force fines for past due books and different materials. This approach report is given for appropriate checking of books in the dissemination and save segments of the library and guarantees that these are returned on schedule. This approach archive covers all understudies/personnel/staff who get/s book/s from the University library. This approach record and method means to compose the gathering and set up constant upgrade of the examination yields by the undergrad and graduate understudies for research purposes. This approach archive covers all the proposal submitted both by the undergrad and graduate understudies. [103] discussed about specific Policy document which guarantees that all rules and appropriate control are pursued consistently for all clients of the library. The reason for this arrangement archive and system is to guarantee that legitimate conduct and demeanor inside the library is looked after; in this manner, avoiding any untoward occurrences. This approach archive covers all understudies, personnel and staff when inside the library premises. The Policy Document guarantees that there is a board of trustees who will talk about issues identified with advancement and improvement of the library and its administrations. The reason for this strategy archive and techniques is to characterize the jobs of the Library Resources Committee with the end goal that the individuals are appropriately guided. The reason for this arrangement record and systems is to characterize the jobs of the Library Resources Committee with the end goal that the individuals are appropriately guided. This strategy covers the recognized individuals from the Library Resources Committee. This Policy Document likewise gives productive help on the assets, offices and administrations of the library. This approach record plans to guarantee that the network knows and acquainted with every one of the administrations being offered by the library. This Policy Document additionally gives assets that are state-of-the-art and applicable to the curricular projects which can advance progression of the instructing and learning forms . The reason for this strategy

report is to guarantee that exceptional and ebb and flow news, articles and other academic writing through the periodicals are accessible in the library as extra assets for research and study. This covers all the membership to periodicals all the time for the utilization of workforce, understudies and staff. [104] discussed about specific Policy document which guarantees that an extensive Library accumulation must be kept up, sorted out and characterized by the Library of Classification System. This strategy and methodology means to keep up and sort out methodicallly the library assets as indicated by the Library Classification System. This strategy archive covers all books that structure some portion of the library possessions. This strategy archive gives help to all understudies/employees who might want to utilize assets of different libraries outside of the Campus. This strategy and system plans to set the rules and methodology to help all employees/understudies who mean to utilize insightful assets of different establishments, enterprises, government and private substances and for different clients who might want to utilize the library assets. This strategy archive covers every one of the clients of the library, including personnel, understudies and staff just as visitors. It likewise incorporates understudies and employees who expect to utilize the library assets of different foundations and others. This Policy Document likewise guarantees that a state-of-the-art and dependable library gathering is made accessible for its customer base. The reason for this arrangement archive and strategy is to keep up a current, helpful, powerful accumulation while adjusting to the changing needs and enthusiasm of the understudies, employees and arrangement of the gathering assets to the curricular projects of every division. This approach covers all library accumulations that meet the updation criteria. [105] discussed about specific Policy document which helps execute the situation linkages graduated class office program as one its set of three capacities. This arrangement report and methodology gives rules in the execution of the situation linkages graduated class program all things considered. This approach archive and techniques covers the ID, execution, checking and assessment of the situation linkages graduated class office exercises of the University. Proposals for subsidizing are made at the Educational System level. Endorsement of the lead and subsidizing of the examination is by the President with introductory assessment by the school look into board of trustees, Research and Publication Office embraced by the Overall Academic Dean and Head of Administration. Employees are designated nine (9) hours every seven day stretch of their outstanding burden to lead look into. The examination will be considered as sole responsibility for creator and in this manner, might be displayed in any exploration discussion. Resources' individuals looking for research awards must be full time representatives of the University, and have marked work contracts. The Policy Document talks about the University support in the ceaseless expert training in the field of research to further reinforce the exploration order of the establishment. This Policy Document maintains the improvement of the examination vocation of the analysts, employees and staff including understudies by giving exploration awards, giving holiday

leave to direct investigates, empowering research coordinated effort with worldwide and neighborhood foundations and sending specialists to gatherings, trainings and classes to further build up their examination information and abilities. This arrangement record is pertinent to all employees and understudies of the University. The Policy Document secures the protected innovation privileges of employees, understudies, staff and of the University in connection to research yields and academic exercises. This strategy and techniques gives rules on securing the exploration yields and insightful exercises of the personnel, understudies and staff. This Policy report covers the strategy and methodology on analysts' assent; copyright; patent; creation, conveyance and advertising of research yields; eminence; and managerial component. [106] discussed about Policy Document which incorporate Work-Based Learning in its program offering with the goal for understudies to build up their abilities, capacities, demeanors, proficient traits, and hard working attitudes that add to their employability and deep rooted learning. The strategy archive and systems examined diagram the procedures in helping understudies over the span of their Work-Based Learning exercises. They additionally characterize the jobs and duty of the Dean, Program Head, Practicum Adviser, and Practicum Supervisor as a team with the Head of Placement, Linkage and Alumni Office. [107] discussed about specific Policy document which maintains the improvement of the exploration vocation of the scientists by giving examination awards to lead research ventures, giving vacation leave to direct looks into and sending analysts to visit or to present research papers in gatherings, trainings, workshops and courses in the assistance of their exploration information and aptitudes. This arrangement archive is material to all full time resources and understudies of the University. The Policy Document underpins the nonstop expert training in the field of research to further reinforce the exploration command of the foundation. This Policy Document maintains the advancement of the exploration morals of the specialists, employees and staff including understudies by following the moral method for utilizing the examination of different scientists. This will be guaranteed by utilizing hostile to unoriginality checking. This strategy report is relevant to all scientists, employees, staff and understudies of the University. This strategy record is pertinent to all analysts, employees, staff and understudies of the University. [108] discussed about Policy Document which applies to all undergrad and postgraduate showed projects of studies. The general objective is to keep up phenomenal norms of accomplishment in instructing, learning and research that can enhance the University people group and to be of administration to the global network. In seeking after its go for perfection, Higher Quality Accredited Institution concedes qualified candidates without separation as to exceptional needs, physical inability, age, sex, race, shading, religion and nationality or ethnic source, who have exhibited sufficient learning and abilities required for passage into explicit control adjusted to neighborhood, territorial and worldwide standards. [109] discussed about Policy Document which plays out a key job inside present day social

orders by teaching huge part of the populace and creating information. The University underpins the constant expert instruction in the various fields of research to further fortify the exploration order of the foundation. Subsequently, it is the arrangement of the University to maintain the advancement of the exploration vocation of the employees, staff and understudies by giving examination awards, giving vacation leave to lead looks into, empowering research cooperation with global and neighborhood establishments and sending scientists to gatherings, trainings and courses to further build up their exploration information and abilities. All the forementioned backing are to improve inquire about commercialization, interview, brooding and scholarly commitment. Additionally, the college empowers business enterprise through the training framework to help understudies to be inventive and to be business people. This strategy report is material to all employees and understudies of the University. This Policy Document gives look into motivating forces to its workforce, staff and understudy analysts. This Policy Document bolsters the ceaseless expert instruction in the field of research to further reinforce the exploration command of the organization. The Policy Document maintains the advancement of the examination yields of the employees and staff including understudies by inspiration of utilizing the exploration motivations. This motivation behind the motivators is to help production rates in companion surveyed worldwide diaries, recorded and high effect factor. Additionally, the exploration ought to be material and come to the degree of commercialization. This strategy report is relevant to all employees, staff and understudies of the University. [110] discussed about Policy Document which gives forthcoming and proceeding with understudies quality and productive administration of enlistment both at the undergrad and graduate projects. The arrangement report is planned to give clear rules to college partners (understudies, staff consultants, bolster workplaces) concerning enrollment of new understudies, current understudies, and returning understudies. [111] discussed about Policy Document which insists that only those students who have satisfactorily completed the requirements of their respective degrees shall be considered graduates. The Policy Document and procedures intend to define the minimum requirement for the completion of a programme of study, both undergraduate and graduate programmes. The Policy Document and procedures apply to all students of the University, either new students (undergraduate and graduate) or transfer students. [112] discussed about Policy Document which surveys and assesses the scholarly presentation of the understudies by methods for target measure that mirrors their scholastic accomplishment on a trimester premise (GPA) and nonstop premise (CGPA). The Policy Document and strategies plan to characterize the methodology in ascertaining the evaluation point normal (GPA) and total point normal (CGPA) of understudy. The Policy Document and methodology apply to all understudies of the University, both acknowledged as new understudy or student from another school. This Policy Document additionally guarantees that understudies continue to fitting system and progress in like manner. Thus, the college enables understudy

to change their scholarly program inside the school or to another school. This Policy Document and techniques plan to give rules to understudies who wish to change their scholarly program either inside the school or to another school. [113] discussed about Policy Document which ensures that lone approved workplaces/divisions will discharge any official understudy record and that every one of understudies' information are treated with most extreme uprightness and secrecy. This Policy Document and strategies set the rules for the precise and brief arrival of transcripts of records, confirmations, endorsements and different accreditations just as ensuring the honesty and classification of the previously mentioned records. This arrangement report and techniques spread the readiness, confirmation and examining, and arrival of the records, for example, the transcript of record, recognition, testaments, genuine duplicate of evaluations as well as any accreditation before it is discharged to the understudies/graduates. understudies may hinder nonstop enlistment by choosing for disappear from nonattendance from the University for restorative or individual reasons or to take part in other off-grounds instructive encounters without expulsion from the University. An understudy is permitted to document a time away (LOA) from the University until the most recent day generally enrolment. The time away will be reflected in the official transcript of records. In the event that the understudy didn't enroll and neglected to present the endorsed time away structure, the understudy will be incorporated into the nonappearance without leave (AWOL) list. An understudy on Leave of Absence (LOA) may avoid the cocurricular or extra-curricular exercises during the span of the LOA. This Policy Document and methodology set the rules in profiting of the time away benefit of understudies. This arrangement report and technique detail the application for leave of nonattendance, the procedure and the understudy's restrictions while he/she is on time away.

VII. Editorial Policy

The submitting author is responsible for obtaining agreement of all coauthors and any consent required from sponsors before submitting a paper. It is the obligation of the authors to cite relevant prior work.

Authors of rejected papers may revise and resubmit them to the journal again.

VIII. Conclusion

The rapid advances in technology brings in newer challenges like never, before. The challenges get further compounded when world faces unprecedented happenings such as COVID-19, Pandemic, and incremental Cyber Security threats in an otherwise presumably secure environment. The interdependency of different domain provides greater areas for consideration while deducing postulates. AI, IoT, ML brings in exciting approaches to attack the complex problems being encountered. The speed with which operations are getting transformed is phenomenal. Automation, which is largely dependent on computation, is playing a bigger role in these transformations. The productivity quotient has gone up with zero rejects. Mathematical modelling has come to stay as integral component to test the computational designs, for their veracity and usefulness. Computational models are often coupled with high performance computing to solve complex physical problems arising in Engineering analysis and design.

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