

Technical Magazine

ENVISION'17

DEPARTMENT OF INFORMATION TECHNOLOGY

PANIMALAR INSTITUTE OF TECHNOLOGY



A Christian Minority Institution
JAI SAKTHI EDUCATIONAL TRUST
[AN ISO:9001:2008 CERTIFIED INSTITUTION]
*391, Bangalore Trunk Road, Varadharajapuram,
Poonamallee, Chennai 600123*



PANIMALAR INSTITUTE OF TECHNOLOGY

(A CHRISTIAN MINORITY INSTITUTION)

JAISAKTHI EDUCATIONAL TRUST

AN ISO 9001:2008 CERTIFIED INSTITUTION

BANGALORE TRUNK ROAD, VARADHARAJAPURAM, POONAMALLEE, CHENNAI-600123

ENVISION '17

DEPARTMENT OF INFORMATION TECHNOLOGY

PATRON

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Secretary & Correspondent

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ABOUT THE COLLEGE

Panimalar Institute of Technology started by **Jaisakthi Educational Trust** focuses on disseminating knowledge coupled with discipline and ethics. It is a Christian Minority Institution and a self-financing engineering college with five streams viz. CSE, IT, ECE, EEE and MECH at present. This institution is affiliated to Anna University meets the guidelines of AICTE, New Delhi in all aspects. Our college is a combination of a world class infrastructure built upon the greatest faculty strength combined with a pictures environment to chisel the finest minds into the most capable future generations of India. It is located in Poonamallee, not far away from Chennai city limits.

Our institution is likely to expand its sphere in other facilities also. The institution takes care to impart updated and high quality technical education throughout the year. Special care is taken in the matter of students becoming qualified as well as competent to face the challenges of the leading corporates in the present world of tough competition. Every effort is taken to transform the students into well rounded personality with strong confidence and sound character making no compromise in perfection, morality, dedication and commitment.

Students: Our well-equipped Engineers.

Staff : Our means.

Industry and Profession: End users.



VISION AND MISSION OF THE COLLEGE

Vision:-

An Institution of Excellence by imparting Quality Education and serve as a perennial source of Technical Manpower with dynamic professionalism and entrepreneurship having social responsibility for the progress of the society and nation.

Mission:-

Panimalar Institute of Technology will strive to emerge as an Institution of Excellence in the country by

- Providing State-of-the-art infrastructure facilities for designing and developing solutions for Engineering problems.
- Imparting Quality education and training through qualified, experienced and committed members of the faculty.
- Inculcating high moral values in the minds of the Students and transforming them into well-rounded personality.
- Establishing Industry Institute interaction to make students ready for the industrial environment.
- Promoting research based projects/activities in the emerging areas of Engineering & Technology.

VISION AND MISSION OF THE DEPARTMENT

VISION:-

To impart technical knowledge through quality education and to develop high employability skills, self-discipline and to bring talented engineering graduates to serve the nation.

MISSION:-

M1: To prepare our students to achieve the destination in the field of Information Technology.

M2: The department is dedicated to provide a dynamic learning environment that meets the industry needs.

M3: To facilitate the students to be technically exposed to latest tools and technologies.

M4: The department encourages to do research based project and activities.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

The program educational objectives for the Information Technology program describe accomplishments that graduates are expected to attain within four years after graduation and the graduates will:

PEO I:

To bestow the students with skills of mathematics, science and basic engineering to formulate, analyze and solve engineering problems.

PEO II:

To prepare students to apply their acquired skills in emerging technology and make them to be employed in area of Information technology.

PEO III:

To pursue higher education or to apply the technical knowledge as practicing professionals.

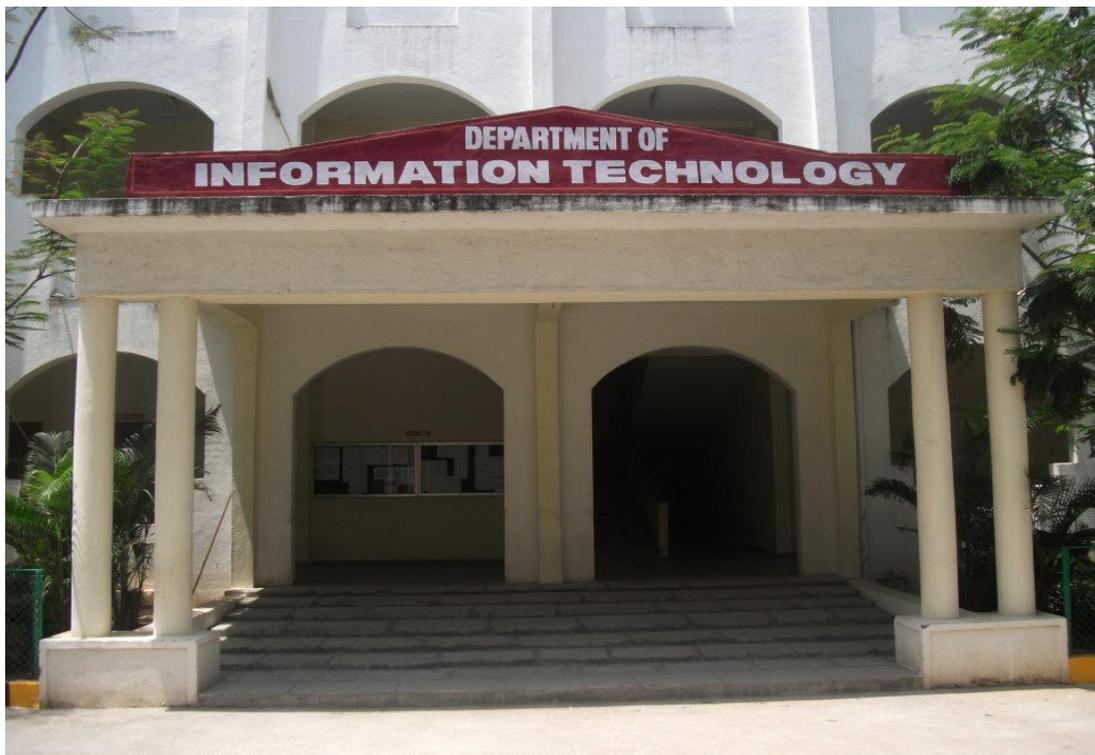
PEO IV:

To conduct themselves in a responsible, professional and ethical manner

PEO V:

To improve knowledge, skills and competences within a personal, social and employment-related perspective, by learning new technologies.

DEPARTMENT:-



ABOUT THE DEPARTMENT

The IT Department has been established to render services to meet the growing global challenges of engineering industries by educating the students to become exemplary professional Information Technology engineers of high ethics. Our Department aims to inculcate profound knowledge and skills in the areas of Information Technology. The mission of the department is to impart high quality undergraduate education and carryout leading edge research in the discipline of Information Technology, marching towards the future enhancement. Consistent with the high standard of excellence aimed by the Institution, the faculty comprises a team of carefully selected and highly qualified persons who have proven record of meritorious accomplishments to their credit. We have Doctorates and Postgraduates specialized in various disciplines that have extensive industrial and teaching experience. The staff strength is according to the norms prescribed by All India Council for Technical Education, New Delhi, Government of Tamil Nadu and Affiliated to Anna University. The department has various laboratories equipped with the state-of-the art computing facilities to support the research and teaching activities. A library with various books on Information Technology for the exclusive use of the faculty and student is located in the premises of the Department. At present, Dr.A.JOSHI M.E, Ph.D. is the Head of the Department.

- IT Branch lays strong foundation to the cutting edge technologies.
- It shapes the students to be completely fit for the industrial needs in design and development.
- Department of IT creates new knowledge and opportunities to the students for learning through the process of research and enquiry.
- Department of IT inculcates its students to recognise and value communication as the tool for negotiating and creating new understanding, collaborating with others, and furthering their own learning

LAB:-



MESSAGE FROM THE SECRETARY



Dr.P.Chinnadurai,M.A.,Ph.D.,

Secretary and Correspondent, Panimalar Institute of Technology

I am very much honored and pleased that Department of Information Technology has involved in many technical and other activities in building up the student career. The Department of Information Technology is doing excellent work bringing together software engineers to expose and share their knowledge and intelligence. In the challenging world with stiff competition in new technologies, innovation in emerging science and changing economy, a great awareness of newer achievements on the latest technology will be created in the country through these unique activities with zest and zeal. I extend my hearty congratulations to the entire faculty and students of Department of Information Technology for their enthusiasm to achieve success.

MESSAGE FROM THE DIRECTOR



Mr.C.Sakthikumar,M.E.,M.Phil. Director,

Panimalar Institute of Technology

I am happy that Department of Information Technology is bringing out department magazine . The department magazine will definitely help to showcase the activities that are happening in the campus. IT department has involved in activities to empower the student community. The Department of Information Technology competitive edge in innovation, design and manufacturing. These activities would bring the engineers together to share ideas in various fields to create new inventions and innovations in the electronics society. The Department of Information Technology will lay the path for the rapidly changing market place for engineering product places greater importance on small and startup companies which can innovate more quickly than large corporations.

MESSAGE FROM THE PRINCIPAL



Dr.T.JAYANTHY, M.E., Ph.D., Principal,

Panimalar Institute of Technology

I am very much pleased to address and acknowledge the activities performed by the Department of Information Technology. The Department of Information Technology perform these activities with a motto to bring out hidden talents from the young engineers and to exchange their ideas and knowledge in various fields of electronics. I believe that the activities conducted by the Department of Information Technology will provide a platform to share ,discuss and to exchange their views in exciting themes and wish them a great success in all their endeavors. I extend my warm patronage to all those who have contributed their best to achieve success.

MESSAGE FROM THE HEAD OF THE DEPARTMENT



Dr. A. JOSHI, M.E., Ph.D., HOD/IT DEPT,

Panimalar Institute of Technology

It is a pleasure to head the Department of Information Technology. The aim of the department is to provide high quality education and training the students with all the new emerging technologies in the Information Technology field. The department places emphasis on all the important aspects of computers such as Mobile Computing, Algorithm Design, Database Management Systems, Compiler Design, Computer Graphics and etc., The department also takes initiative to improve the soft skills, analytical capabilities and verbal communication of the students so that they can face the competition in the corporate world confidently.

STAFF JOURNAL PUBLICATIONS

“Mobile Waving Android based System for Girls safety”

Dr.A.Joshi

Panimalar Institute of Technology, India

ABSTRACT: The Internet of Things that refers to the ever growing network of physical objects that feature an IP address for communication and internet connectivity that occurs in between these systems and objects and other Internet devices. The existing approaches does not support smart phones well due to the issues such as high cost ,efficiency of security , and poor usability. In the proposed system Android app is developed in which user’s Hand Waving Pattern repeat& record the above actions for many times until the Application registers user’s pattern. Here we use SVM algorithm for identifying the user. Modification of the project is that the waving pattern can be used for Girls Security. If any inappropriate situations happen to girls, they can send a notification to the Guardian and to the Authorities through the Hand Waving pattern. Once the pattern is recognized then automatically the Global Positioning System is triggered and location details are sent to the Guardian and Police authorities as URL Links along with Voice clip that is recorded and sent as a SMS Link.

” Clustering Data using fuzzy C-Means by determining the Number of Clusters using Gap Statistics”

Dr.A.Joshi

Panimalar Institute of Technology, India

ABSTRACT: Clustering is an unsupervised learning technique which is used to group samples of data based on their features and properties of instances. In any clustering algorithm determining the number of clusters is a significant task which needs to be efficient to group the data with relatively similar characteristics. In this paper we use a method Gap statistics algorithm to determine the number of clusters for a Fuzzy C-means clustering algorithm to group the samples of data. In gap statistics method we

calculate the error measure for each sample of data and evaluate it with a reference value and depending on the evaluation we obtain the optimal number of clusters which can be applied to the Fuzzy C-means clustering.

”A Comprehensive Survey of Approaches Used For Detecting Events In Twitter”

Mrs.G.Dhanalakshmi

Panimalar Institute of Technology, India

ABSTRACT:-Micro bloggers are web applications which acts as a broad cast medium in which peoples are allowed to share their statuses, information, links, images , videos and opinions in short messages. They offer a light weight, easy and fastest way of communication among them. Some of the prevalent micro blogging services are twitter, face book, Google + etc. The information posted on twitter is called tweets. These messages provide the information that varies from daily life time events to latest worldwide news and events. Analysing such rich source of user generated data can yield unprecedentedly valuable information. Mining such valuable information helps to identify the events that occurred over space and time. Event detection from twitter data has many new challenges when compared to event detection from traditional media. This paper provides a survey of various techniques used for detecting events from twitter.

“Location Based Profile Changing System for Mobile Devices”

Mrs. R. Dharani

Panimalar Institute of Technology, India

ABSTRACT: The main aim is systematically change the mobile settings like (Mode, Mobile data,Wi-F,etc).The feature of the application is finding the missed mobile which is in silent mode. This application needs one time registration like user name, password and phone number. After the registration we could create different profiles and change profile settings from any mobile number using message command with

password. While creating a new profile based on the location, the device must be present in the particular location. For ex: If the user wants to create a office profile, the device must be in the college campus. Once the profile is created, it starts working without interaction and personal presence. This works using service which is a component that runs in the background. In this paper we propose mobile settings based on location. Our implementation of context differentiates between closely located sub-areas within the same location. We have modified the android operating system, So that the mobile devices based on location can be specified and enforced. We have performed several experiments to assess the efficiency of our access control mechanism and the accuracy of context detection.

“Sensor Based Dam Gate Controlling with High Level Protection”

Mrs. R. Dharani

Panimalar Institute of Technology, India

ABSTRACT: A system for early controlling of dam gate's at particular location in any water dependent appliance and apparatus used in multi dwelling facilities. In practice, conventional controllers were used to control the system however their parameters are empirically adjusted. Besides, the operation of these controllers relies on the measurements provided by water level sensors located inside and near the dam. This system provides a high level of safety for dam applications. The water level sensor estimates the dam water level; if the water level increases a particular threshold value we receive the message through GSM Module and email. Similarly Microcontroller will trigger the relay drive unit, which will tend to open & close the gate automatically with the help of motor. The required parameters of water level, message alert signal and email.

”Online Appointment Reservation and Scheduling for Healthcare- A Detailed Study”

Mrs.S. Irin Sherly

Panimalar Institute of Technology, India

ABSTRACT: Appointment reservation and scheduling systems in healthcare are used to maintain and manage the access to service providers which are the hospitals. In many aspects it might affect the administration of appointment scheduling systems which includes the arrival time and consultation time variance, doctor preferences, dates and other information relating to the technology and the maturity level of the administration staff. Hence an appropriate scheduling and reservation system has to be developed by considering necessary factors and features which will elevate the patient hope and satisfaction, which in turn increases the profit margin. An online reservation and scheduling system will allow individuals to securely and safely make their appointment reservations online. Comparing to the existing scheduling methods, the web-based appointment and reservation system could powerfully escalate patients’ satisfaction with initial registration and reduced waiting time. This paper majorly focuses on analytical study of online appointment reservation and scheduling system with its architecture and benefits.

”Deterring Selfish Nodes Using Account – Aided Reputation Management System in MANETs”

Mrs. S. Irin Sherly

Panimalar Institute of Technology, India

ABSTRACT: Achieving cooperation and deterring selfish behaviors are significant for proper happening of mobile ad hoc networks (MANETs). For this purpose, most previous efforts entrust on either reputation systems or price systems. Nodes in both systems can be perverse while still being considered honourable. Also, information transfer amid mobile nodes in reputation systems and acclaim circulation in price

systems expend symbolic resources. This paper presents a hierarchical Account-aided Reputation Management system (ARM) to effortlessly and adequately provide assistance incentives. ARM builds a hierarchical locality-alive distributed hash table (DHT) framework which globally collects all node reputation information in the system which can then be used to calculate more factual reputation and detect anomalous reputation information. Also, ARM blends reputation and price systems by enabling higher-reputed nodes to pay less for their earned services. Theoretical analysis exhibits the properties of ARM. Simulation outcomes show that ARM exceed the individual reputation system and price system in terms of adequacy and effortless of providing assistance

”Neighbor Discovery protocol in Mobile Adhoc network”

Mrs.P.Sheela Rani

Panimalar Institute of Technology, India

ABSTRACT: In mobile adhoc networks, the emerging propinquity based applications have led to the need for highly effective and energy-efficient neighbor discovery protocols. The first step is Neighbor discovery is used to establish communication links between sensor nodes; it becomes a fundamental building block for wireless sensor networks. Earlier the neighbor discovery was working on same frequency. However the escalation of the mobile devices communication faces trials to neighbor discovery problem. In this paper we implement a neighbor discovery system Based on quorum system, which can bound the latency in multichannel developments with low power consumptions. It provides 35% reduction in power latency compared to u-connect and we derive the worst case latency for symmetric duty cycles using Diff Code. In symmetric case, the maximum worst-case progress is up to 65%

“Energy Efficient Scheduling of Map reduce for Evolving Big Data Applications”

Mrs.P.Sheela Rani

Panimalar Institute of Technology, India

ABSTRACT: In recent years the data mining applications become stale and obsolete over time. Energy wastage is the major problem more of the IT firms. More workload and more computational will increase high energy cost. Incremental processing is a promising approach to refreshing mining results. It utilizes previously saved states to avoid the expense of re-computation from scratch. In this paper, we propose Energy Map Reduce Scheduling Algorithm, a novel incremental processing extension to Map Reduce, the most widely used framework for mining big data. Map reduce is a programming model for processing and generating large amount of data in parallel time. In this paper, EMRSA is algorithm provide more energy and less maps. Priority based scheduling is a task will allocate the schedules based on necessary and utilization of the Jobs. For reducing the maps, it will reduce the system work so easily energy has improved. Final results show the experimental comparison of the different algorithms involved in the paper.

“A Survey on Material Management and Billing System Using Android”

Mrs.R.Jeena

Panimalar Institute of Technology, India

ABSTRACT: Automobile spare parts Management System is completely automated and fully integrated with Automobile dealer shop. The software is best suited for two wheelers; three wheelers; four wheelers spare parts management in Automobile spare parts shop. The modules covered in this project are login, product management, product registration, customer management, customer registrations, sales details, and merchant/dealer registrations, notification message when the stock goes below count,

stock maintenance and reports. We provide three logins; first one is cashier - for normal purchase and billing. Supervisor - Can maintain and view stock information. Admin - Can add new products, and also can purchase the products. Similarly an android application also contains login for owner, it contains menu list that is previous purchase list. Purchase of new products can happen via system and also android app. Price details and stock details of the Spare parts are managed in this software. The customer details are entered to call the customer for further purchase of spare parts. The customer name, address, phone number and E-mail id details are managed in this module. These details can be entered and edited by the admin/owner. Main advantages of the system are, it sends automatic notification to the owner through android applications. In Modification process, we are going to automatic maintenance of stock and inventory control system. Automatic notification is generated to the owner in case of attaining minimum reorder quantity level for any product. Purchase of new products can happen via system and also android applications are the main advantage of this software.

“Peer to Peer Multimedia Content Distribution Using Automatically Recombined Binary Key”

Mrs.M.Rajeswari

Panimalar Institute of Technology, India

ABSTRACT: With increasing number of recent advancement in multimedia technologies, the distribution of multimedia contents have increased to a greater extend. Protection of ownership is required in the distribution of multimedia contents due to enormous increase in duplication and redistribution of contents. Encryption and decryption of contents also becomes cumbersome due to the usage of large amount of data and communication bandwidth to transfer data. In order to control unauthorized redistribution we generate binary key for multimedia contents. This enables us to trace the illegal users by using traitor tracing protocol. Merchant will create number of seed buyers who needs to distribute the content to the child buyers. Each seed buyer will be

provided with his/her own binary key. On distribution of multimedia contents to the child buyers the binary key of different seed buyers are automatically recombined and the database is maintained. In case of any illegal distribution, merchant will block the illegal user and will not respond to the particular user.

“The Survey on Inventory Management System for Supermarket using Android Application”

Mrs.M.Rajeswari

Panimalar Institute of Technology, India

ABSTRACT: Inventory is usually the most important priced quality of a business once the mounted quality. Keeping the inventory conjointly suggests that keeping tab on the realizable value of all the stocks in production and finished output. This paper explores the challenges of manual inventory management system for supermarkets and infers solutions to this challenges by planning a computerized machine-controlled inventory management system to order and update the stocks. Whenever the product is purchased it should automatically update the stock level in database i.e when the unit is 50 and one product is purchased ,then the stock will be automatically updated to 49, when the product ID is entered it will automatically display the product details and total amount will be generated and the bill printed. It also manages the product, supplier and cashier details. When the product reaches the reorder level, it will automatically send an intimation to the owner via message and the owner opens up the application on his mobile to reorder the product and the payment for the product is done. The application developed will be an immense useful to the owner since the reordering of product is done by his own conscience which will certainly reduce the loss for the supermarket. The finding shows the challenges facing the manual system of inventory management system; the manual system requires everyday counting of items in the inventory, human errors are very prevalent during counting and recording. Based on the findings this paper highlights the possible solutions to the above

problems; a computerized inventory management system to order and update the stocks was designed and goods were supplied to implement the possible solutions.

“Detecting Targeted Malicious Email by Spam Filtering using Naïve Bayesian Classification”

Mrs.M.Rajeswari

Panimalar Institute of Technology, India

ABSTRACT: In recent years, Targeted Malicious Email (TME) has become more dangerous. Beyond spam and phishing designed to trick users into revealing information, TME exploits computer networks and gathers sensitive information. It targets on single users and is designed to appear legitimate and trustworthy. In this paper, we propose a new email filtering technique using random forest classifier. A compromised router detection protocol is developed to identify congestive packet losses. We also develop feature extraction procedure to identify TME specific features. Naive Bayesian classification is used to classify mails as either TME or trusted mail.

“Mouse Behaviour Primarily Based Signature Authentication Victimization Neural Network”

Mrs.D.Murugeswari

Panimalar Institute of Technology, India

Abstract: Several all-embracing password leakages apparent users to accessory amount consummate accident of adumbration and corruption of their info. the blemish of password-based affidavit mechanisms is axis into a cogent affair for the accomplished advice society. aural the projected SYSTEM, beset 3 above modules: (1) Mouse–Behavior Capture, (2) Affection Construction and (3) apprenticeship / Classification. the primary bore serves to anatomy a mouse-operation task and to abduction and adapt mouse-behavior knowledge. The additional bore is active to abstract holistic and procedural options to characterize abrasion behavior and to map the raw options into distance-based

options by corruption abundant ambit metrics. The third module, aural the apprenticeship part, applies neural arrangement on the distance-based affection vectors to account the absolute affection elements, again builds the user's contour employing a one-class classifier. aural the allocation part, it determines the user's character corruption the accomplished classifier aural the distance-based affection corruption NN. Aural the MODIFICATION method, a four Chiffre OTP is generated to the user's email ID. The user are giving the '2' chiffre OTP and aswell the server are giving antithesis '2' chiffre OTP. Users '2' chiffre OTP is absolute by the server and contrariwise.

“A Crossword Checking Based Authentication System by Click Through”

Mrs.D.Murugeswari

Panimalar Institute of Technology, India

ABSTRACT: This scheme presents puzzle based authentication system in which web service user registers and solves the puzzle, puzzle solving time and sequence of image block is stored and validated by local server and the web service user get authenticated and start accessing the web services. This system explains three mechanisms. In password shuffle the password is stored in the form of character set. In image based authentication, the user initially will store selected images in a database. Then user must verify those images with database for authentication. In image puzzle, the User must form a correct order of the image. The article includes details of puzzle based authentication scheme are presented along with design, algorithm, security and implementation.

“Intellectual Locker Protection System Based On Opency And User Authentication Using Android”

Mrs.D.Murugeswari

Panimalar Institute of Technology, India

ABSTRACT: In our day to day life, Security and Authentication of individuals is necessary, especially in Bank lockers. But the security provided by bank systems has some backfalls. It has been enhanced by using techniques like pattern recognition comparing their existing traits and there is still a need for considerable computer vision. In this system a new approach is proposed for banking system. At first pattern flow are collected as data sets and maintained in bank agent server. The machine is attached with a camera to capture the pattern flow of user and sent for processing features of the user is recognized by comparison. Along with the authentication of user there is another system to identify the user before that RFID tag checking . Password entry through mobile phone is needed for next level of security. This can be done by using Bluetooth and also authentication is checked by verification through IMEI number. Finally when all levels of security is finished , the locker is opened for the user and the information is passed to the bank manager. Temperature and vibration sensors are used to find thief entry inside the bank. This project shows that all the bank accounts can be accessed using cards through this pattern recognition effectively and safely.

“Sparked Framework for Heterogeneous System Based Multimedia Medical Data Integration”

Mr.R.Praveen Kumar

Panimalar Institute of Technology, India

ABSTRACT : Long term Evolution (LTE) remote systems, the customary limits of patient record are sent through systems administration advancements enhancing the doctor's facility framework and give on-interest portable access to restorative media information. Profits by the increase system abilities of LTE remote advances, by empowering an extensive variety of heterogeneous therapeutic programming and database frameworks, (for example, the photo documenting and correspondence frameworks, healing center data framework, and reporting frameworks) to be progressively

incorporated into a cloud-like shared interactive media information store. Our paper coordinates systems from mixed media gushing, rich Internet applications (RIA), and remote method call (RPC) structures to build a Self-overseeing, Pervasive Automated network for Medical Enterprise Data (SparkMed). We propose a model of the SparkMed structure for assessment on a radiological work process reproduction, which uses SparkMed to convey a radiological picture viewer as a m-Health application for telemedical utilization by radiologists and partners. We have assessed our model utilizing ten gadgets over WiFi and 3G, confirming that our system meets its two primary targets: 1) intuitive conveyance of therapeutic media information to cell phones; and 2) connecting to non-organized medicinal programming procedures without essentially affecting their execution. Steady reaction times of under 500 ms and graphical casing rates of more than 5 casings for each second were seen under proposed use conditions. Further, overhead estimations showed straight versatility and low asset necessities.

DEPARTMENT EVENTS AND ACTIVITIES:-

NPTEL COURSE

- ✓ Second, Third & Final Year Student of our department attended the NPTEL Online Certification Course conducted by the IIT Madras , Chennai.

STUDENTS ACHIEVEMENTS

- Final Year Student B.Srinivas of our department Participated in “**RC sumo robot competition**” **23rd Singapore robotic games 2016, conducted at Singapore on Jan 27.01.16 and Jan 28.01.16**
- Final Year Students of our department Vadivel G ,Siva Kumar V, Vignesh R participated in the project Expo and they won **Third Prize** in the event conducted by the Department of Information Technology at Panimalar Engineering College on 02.04.2016
- Final year (4 students) of our department participated the National level Competition (ENACTUS) conducted by E-Cell on 21.07.2016 & 22.07.2016, at Mumbai.
 - Jerold M Joel
 - Gowtham Raj R

- Deepak Raj S
- Agnel Joe

GUEST LECTURE

- ✓ Final year students of our department attended the guest lecture on “Software Development” by an expert from Texas University at Panimalar Institute of Technology on 14.03.2016.
- ✓ Final Year students of our department attended the Guest Lecture on “Shaping your future” presented by Mr. N. Prem Kumar from The Hartford Insurance Group conducted by the Department of Information Technology , at Panimalar Institute of Technology, on 27.06.2016.
- ✓ Final Year students of our department attended the Guest Lecturer on “Career Development” conducted by the Department of Information Technology , at Panimalar Institute of Technology, on 27.07.2016.



- ✓ Second Year students of our department attended the Guest Lecture on “Programming & Data Structures-II” presented by Dr. Michael Arock from National Institute of Technology (NIT), Trichy, at Panimalar Institute of Technology, on 18.07.2016.



WEBINAR

Final year students of our department those got placed in IBM attended the Webinar conducted by IBM at Panimalar Institute of Technology on 15.03.2016.

SEMINAR

- Second year students of our department attended the Seminar “Awareness about the Corporate Industries Expectation”, presented by the expert Mr. Jeeva from Microsoft at Panimalar Institute of Technology on 13.04.2016.
- Final year students of our department attended the Seminar “Higher Studies”, conducted by “Scoregetter” at Panimalar Institute of Technology, on 25.08.2016

PROJECT EXPO

- Department of CSE & IT in Collaboration with CSI conducted the Project Expo for IV year students on **06.04.2016** , at Panimalar Institute of Technology.



SOFTWARE CONTEST

Department of CSE & IT in Collaboration with CSI conducted the Software Contest for III year students on 20.02.2016, in Panimalar Institute of Technology.



ALUMNI MEET

Batch 2012 and 2013 passed out students attended the alumni meet at Panimalar Institute of Technology , Chennai on 19.03.2016.





CERTIFICATION COURSE

➤ Third year students of our department attended the “DATA SCIENCE & BIG DATA ANALYTICS” Certification course in association with ICTACT, conducted by our staff members, at Panimalar Institute of Technology, from 23/06/2016 to 28/06/2016.



- Third year students of our department attended the “DATA SCIENCE & BIG DATA ANALYTICS” Mock Test conducted by ICTACT , at Panimalar Institute Of Technology on 14/07/2016



WORKSHOP ATTENDED

- Second year students of our department attended the three days workshop on “Enjoyable Coding” , at Panimalar Institute of Technology, from 28-07-2016 to 30-07-2016.
- Third year students of our department attended the workshop on “Ethical Hacking” conducted by the MIT Campus ,Chennai on 11-03-2016.
 - Kalaivani
 - Amoka
 - Shivani
 - Varshitha
 - Sri Lakshmi

AMCAT EXAM BY ASPIRANT MINDS

- Final year students of our department attended AMCAT exam conducted by Aspirant Minds at Panimalar Institute of Technology on 31.01.2017.

PAPER PRESENTATION

- Final year students(3-Girls) of our department presented the paper “**Computer Vision Based Gaze Tracking for Accident Prevention**” IEEE Sponsored World Conference on Futuristic Trends in Research and Innovation for Social Welfare, at Karpagam College of Engineering ,Coimbatore, from 29.02.2016 to 01.03.2016
 - N.Sankari Devi
 - P.Subhashree
- Final year students(3-Girls) of our department presented the paper “Effective Car Parking Reservation System Based on IOT Technologies” IEEE Sponsored World Conference on Futuristic Trends in Research and Innovation for Social Welfare, at Karpagam College of Engineering, Coimbatore, from 29.02.2016 to 01.03.2016
 - S.Shamili
 - K.Shruthi
 - S.Preethi Anand

- Final year students(3-Girls) of our department presented the paper “Dynamic Grid System for Continuous Location Based Services using Query Processing” National Conference on Novel Computing organized by SMK Fomra Institute of Technology, Chennai on 04.03.2016.
 - M.FantvinSupriya
 - K.Hemalatha
 - V.Gomathi

- Final year students(3-Girls) of our department presented the paper “Voice Based IR Real Time route Guidance System for Visually impaired in an organisation using Android & Bluetooth” National Conference on Novel Computing organized by SMK Fomra Institute of Technology, Chennai on 04.03.2016.
 - K.Dhivya
 - S.Raathai
 - S.Naveena

- Final year students(3-Girls) of our department presented the paper “Implementation of Bidirectional Voice Communication Between Normal & deaf and Dump People” National Conference on Novel Computing organized by SMK Fomra Institute of Technology, Chennai on 04.03.2016.
 - R.Kiruthika
 - S.Keerthana
 - V.M.Bhanumathi

- Final year students(3-Girls) of our department presented the paper “Bespoke System for Product Management” Fifth National Conference on Recent Advancements in Signal processing and Communication” organized by RMK College of Engineering and Technology, Chennai on 07.03.2016.
 - S.Praveen
 - V.Abinaya
 - A.Anthony fathima Dhivya

- Final year students(3-Girls) of our department presented the paper “Network based Stock Price system” International Conference on Green, Inteligent Computing and Communication Systems

organized by Hindustan College of Engineering and Technology, Coimbatore, on 10.03.2016 and 11.03.2016.

- G.Jayanthi
- U.Aparna

➤ Final year students(3-Girls) of our department presented the paper “A crossword checking based authentication system by click through” Intelligent Computing and Communication Systems,organized by Hindustan College of Engineering and Technology, Coimbatore,on 10.03.2016 and 11.03.2016.

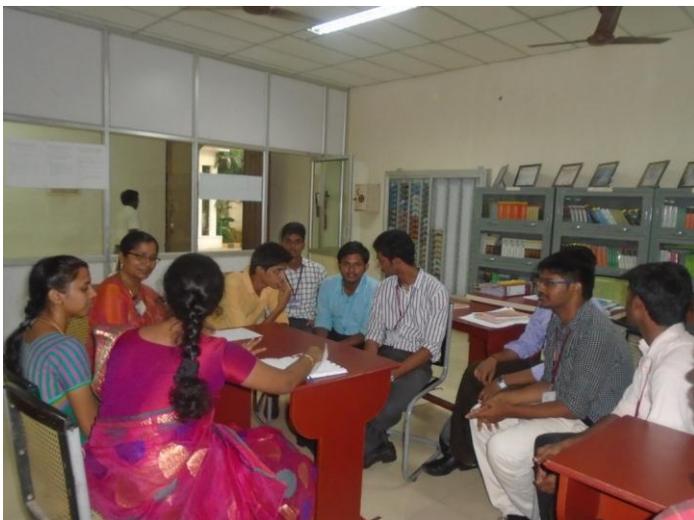
- G.Pavithra,
- B.Porkodi

➤ Final year students(3-Girls) of our department presented the paper "Intellectual Locker Protection System Based On Open Cv And User Authentication Using Android" International Conference on Innovations in Information Embedded and Communication Systems ,organized by Karpagam College of Engineering,Coimbatore on 01.03.2016.

- Malavika.B
- Maneesha.P
- Sumitha.R

STUDENTS COUNSELING

➤ Students Counselling has been conducted for II Year , III year & IV Year students to address their problems such as stress, fear of change, academic related issues and challenges faced by students on 27-06-2016, 25-7-2016, 28-07-2016,24.08.2016, 25.08.2016



E-CELL STUDENTS ACTIVITIES

- Third year students of our department actively participated in the Organic Farming event on 06.04.2016 and 07.04.2016 at Vanagam, Karur.
 - Jerold Joel
 - Deepak Raj
 - Gowtham raj



- Third year (2 students) of our department participated in “**Young Champ Entrepreneurs Road Show Next Meetup**” conducted By the IIT Madras Research Park, Chennai on 19.03.2016.
 - Agnel joe.R
 - Jerold M Joel
- Third year (20 students) of our department attended “**Toastmasters Orientation Program**” to awareness to develop a communication skill and leadership skill , conducted at Panimalar Institute of Technology on 16.03.2016.
- Second year (3 students) of our department actively participated in the Entrepreneurial Action US (EnActUs) Orientation program ,conducted by E-Cell at Panimalar Institute of Technology on 09.03.2016.
 - M.Alagguaravind
 - U.Aravindhan
 - M.F.Ahamed Hameem

STUDENTS ACHIEVEMENTS

11 students of 2011-2015 Batch of our department are achieved Anna University rank in the overall Anna University affiliated Engineering Colleges.

INDUSTRIAL VISIT

- II year students(Girls) visited the Uniq Technologies on 08.07.16 (Friday)
- II year students(Boys) visited the J.P INFOTECH, PONDICHERRY on 08.07.16 (Friday)
- II year students(Girls) visited the JP Infotech on 15.07.16 (Friday).
- II year students(Boys) visited the Uniq Technologies on 15.07.16 (Friday)
- III year students(Girls) visited the BSNL, Maraimalainagar on 08.07.16 (Friday)
- III year students(Boys) visited the BSNL, Maraimalainagar on 22.07.2016 (Friday)
- III year students(Girls) visited the Cegonsoft Pvt Ltd ,Bangalore on 23.07.16 (Friday)
- III year students (Boys) visited the Cegonsoft Pvt Ltd ,Bangalore on 15.07.2016 (Friday).
- IV year students (Boys) visited the Networkers Home ,Anna Nagar on 22.07.2016 (Friday)
- IV year students (Girls) visited the Networkers Home ,Anna Nagar on 29.07.2016 (Friday)
- IV year students(Boys) visited the Cybrain Software Solutions, Bangalore on 29.07.2016 (Friday)
- IV year students(Girls) visited the C-DAC, Electrtonic City, Bangalore on 22.07.2016 (Friday).

FACULTY DEVELOPMENT PROGRAMME

- **Seven days Faculty Development Programme on "Cryptography & Network Security"** was organized by the Department of Information Technology, conducted at Panimalar Institute of Technology from 23-05-2016 to 30-05-2016



- **Two days Faculty Development Programme on "C# and .Net"** in Panimalar Institute of Technology ,organized by the Department of Information Technology and Computer Science & Engineering in collaboration with CSI, ICTACT on 30.05.2016 to 31.05.2016



- Faculty members of our department and other college attended the FDP on **CS6004-Cyber Forensics**, organized by Department of Information Technology, in association with center for

cyber forensics and Information Security, University of Madras and IEEE Information theory society at Panimalar Institute of Technology from **14-11-2016 to 15-11-2016**. On 14-11-2016 (FN), Digital Forensic topic is presented by Dr. N. Kala Baskar Director In-charge, Centre for cyber forensics, University of Madras and Practical Session is handled by Mr. V. S. Deenadayall, Cyber Forensic Consultant, Lab system, Mumbai on 14-11-2016(AN). On 15-11-2016, Case Study of Cyber Crime data is presented by S.BALU, B.A.,PGDCCIS, Addl.Superintendent of Police (Retd.).



SHORT TERM COURSE

- A **short-term course** on “C# & .Net” was conducted by our Department for the VI semester students during the month of **July to Sep 2016**. More than 40 students attended the short term course to sharpen their skill.

LECTURE GIVEN TO OTHER COLLEGE STUDENTS

- 71 Panimalar polytechnic college students attended the Lecture on “Java Networking” presented by Mrs.G.Dhanalakshmi and Lab is handled by Mrs.M.S.Gayathri, conducted by the Department of Information Technology in collaboration with IEEE Information Theory Society, at Panimalar Institute of Technology, on 23.11.2016.



CSI ANNUAL CONVENTION 2016 – AWARDS WON BY OUR COLLEGE

- CSI Awards Committee-2016 chaired by Prof. P. Thrimurthy decided to give the prestigious “**Best Accredited Student Branch Award**” & “**Largest Student Branch Award**” to our college “Panimalar Institute of Technology” at the forthcoming CSI Annual Convention 2016 on Saturday, 10th December 2016 at 3.45 PM at Hotel Le Meridien, Coimbatore.

PLACEMENT TRAINING PROGRAM

- Final year students of our department attended the placement training conducted by experts from **Apt Training Resources**, at Panimalar Institute of Technology, from 23.06.2016 to 06.06.2016.
- During the odd semester, Third Year students of our department attended “Technical Placement Training Program” conducted by our Faculty Members, at Panimalar Institute of Technology, from the month of July to September 2016.

- ✓ C
- ✓ C++
- Final year & Third year students of our department attended “SKILL RACK” online aptitude test, conducted by the Industry experts, at Panimalar Institute of Technology.
- Final year students of our department attended the Mock Interview conducted by our faculty members, at Panimalar Institute of Technology from 11/07/2016 to 31/07/2016
- During the even semester, First year & Second year students of our department attended the 4 days “Placement Training Program” based on Aptitude and Fundamental C coaching conducted by the our faculty members at Panimalar Institute of Technology from 09.01.2017 to 12.01.2017.
- Third year students of our department attended the 5 days “Placement Training Program” conducted by the Triumphant Institute of Management Education Private Limited (T.I.M.E.) & SMART Institute experts at Panimalar Institute of Technology from 06.01.2017, 09.01.2017 to 12.01.2017.

ORIENTATION PROGRAM

- Final year students of our department attended the Orientation Program conducted by **Infosys**, organized by placement Cell ,at **Panimalar Institute of Technology** Chennai on 08.09.2016
- Final year students of our department attended the Orientation Program conducted by **Wipro**, organized by placement Cell ,at **Panimalar Institute of Technology** Chennai on 24.09.2016
- Final year students of our department attended the Orientation Program conducted by **HTC** ,organized by placement Cell, at **Panimalar Institute of Technology** Chennai on 16.08.2016
- Final year students of our department attended the Orientation Program conducted by **Zoho**, organized by placement Cell, at **Panimalar Institute of Technology** Chennai on 21.07.2016
- Final year students of our department attended the Orientation Program conducted by **CTS**, organized by placement Cell, at **Panimalar Institute of Technology** Chennai on 22.08.2016

PLACEMENT ACHIEVEMENTS

- **09 Students** got placed in “**Infosys**” through On Campus Recruitment on 08.09.2016 & 09.09.2016
- **10 Students** got placed in “**Cognizant**” through On Campus Recruitment on 22.09.2016 & 23.09.2016
- **19 Students** got placed in “**Wipro**” through On Campus Recruitment on 24.09.2016, 25.09.2016 & 26.09.2016

- **9 Students** got placed in “**Tech Mahindra**” through On Campus Recruitment on 27.09.2016 & 28.09.2016
- **08 Students** got placed in “**Mind Tree**” through On Campus Recruitment on 30.09.2016& 06.10.2016.
- **07 Students** got placed in “**HTC Global Services**” through On Campus Recruitment on 07.10.2016.
- Final year students of our department attended the **Sysveda Information Technology Pvt. Ltd** located at Guindy, Chennai On Campus placement drive, organized by placement Cell at Panimalar Institute of Technology, **on 05.01.2017. 12 students** got placed.
- **1 Student** got placed in “**CGI Information Systems, Chennai**” through On Campus Recruitment **on 11.01.2017.**

STAFF ACHIEVEMENTS

- Dr. R. Josphineleela have been awarded the “Distinguished Professor” at the CSI TechNext India 2017 – Awards to Academia on 15th January 2017.



STAFF PARTICIPATION IN FACULTY DEVELOPMENT PROGRAMME

- Mr. A. Palaniraj & Mrs. N. Senthamilarasi attended the two day’s Faculty Development Programme on ” C# & ADO.NET Programming”, conducted by Department of Computer Science and Engineering & Department of Information Technology, in association with ICTACT and Computer Society at Panimalar Institute of Technology on 02-06-2016 to 03-06-2016.

- Mrs.S.Irin Sherly & Mr.Praveen Kumar attended the ten day's Faculty Development Programme on "Big Data Analytics" conducted by DST at Rajalakshmi Engineering College, from 08-06-2016 to 18-06-2016.



- Mrs. R.Jeena and Mrs. R. Dharani attended the one day Faculty Development Program on "Expectations and Future of IT industry" at Cognizant Technology Solutions, MEPZ, Tambaram on 22-10-2016.

EMC² BIG DATA CERTIFICATION EXAM

- Mrs.R.Dharani, Mrs.D.Murugeswari & Mr.Vinston Raja attended the "Data Science & Big Data Analytics" International Certification Exam, conducted by EMC², at Panimalar Institute of Technology, on 20/07/2016

ONLINE COURSE ON CS213.2X: IMPLEMENTATION OF DATA STRUCTURES CERTIFICATION

- Mrs.R.Dharani has successfully completed and received B grade, a honour code certificate in "CS213.2X: IMPLEMENTATION OF DATA STRUCTURES" a online course of study, conducted by **Indian Institute of Technology, Bombay** between 12/07/2016 to 09/09/2016.

TECHNICAL ARTICLES

INFORMATION TECHNOLOGY (IT)

It is the application of computers to store, study, retrieve, transmit, and manipulate data or information, often in the context of a business or other enterprise. The term INFORMATION TECHNOLOGY in its modern sense first appeared in a 1958 article published in the Harvard Business Review; authors Harold J. Leavitt and Thomas L. Whisler commented that "**the new technology does not yet have a single established name. We shall call it information technology (IT).**" The Journal of Information Technology Education: Research (JITE: Research) is a peer reviewed journal that publishes scholarly articles on the use of information technology at all levels of education. This includes using technology to enhance learning, to support teaching and teaching administration. In addition, articles on the teaching of information technology are also welcome. While information technology is the central focus, a sound underpinning of pedagogical principles is requisite. Two essential components of IT revolution have been the development of computer and internet.

These two developments have revolutionized modern civilization. This easy and quick access to information has been instrumental in improving our communication, travel, business, entertainment, space exploration, defense capabilities, medical surgeries etc. "We can visit sites situated thousands of miles away, chat with people sitting in other parts of the world, see the latest movies, watch live international matches, read daily newspapers, attend business conferences, conduct business transactions, visit world famous libraries, go through the latest books etc. all at the click of a key on the computer.

The facility of internet and surfing opens us to the world of information superhighway enabling us to seek the information that we want. With the possibility of downloading programs and information through a computer to a paper, our task of gathering information is a few minutes affair. In this manner, today the process of gathering knowledge and information has become, easy, cheap, fast, and enjoyable.

Below are some of the uses of technology today:

1. Use of Technology in Business: Today businesses can save money by using technology to perform certain tasks. When you compare the amount of money spent on hiring an individual to perform a certain task and to guarantee delivery on time, it is totally expensive. When it comes to technology a small business can scale out and deliver more with less human resource.

INFORMATION TECHNOLOGY IN EDUCATION:

Since the dawn of the 21st century, technology has crept its way into learning and teaching environments. As more technological advancements are made, then there is dire need for increased literacy levels on the use of this technology. Here are some of the roles played by information technology in education.

Information technology in education has improved communication. In regions that were once thought hard to reach such as places in sub-Saharan Africa are now accessible through eLearning. Tutors can

lecture learners over long distances and scholars can achieve their academic papers through eLearning. Also, students that feel like studying from home can now do it

1) Advancement of information technology in education has improved research. There are very many online libraries that assist teachers and students with comprehensive reading materials. Teachers and lecturers are also able to post their work online for their students to read.

2) With thorough research, students also get updated information. Every change made in the syllabus is always revised through the internet. Students can also check what units they are to cover in a semester through the internet.

3) Information technology in education has improved and has also brought about an easy access to different learning resources. They help to improve teaching skills and learning abilities of students. These learning resources include audio and visual education. Students are taught with projectors in classrooms or lectured through class speakers. Students and teachers can also easily download eBooks from the internet which can be read from anywhere through your phone or tablet

4) Through eLearning, students can now study whenever they want. There are no fixed timetables so people from different time zones can now do the same courses in the same academic institute. Students can also take their examinations whenever they want with time provided to them.

5) For children with disabilities, information technology in education has brought gadgets to help them with learning. They can also use visual learning where sign language is used on electronic media to enhance communication. This has been a role of information technology in education.

6) Combined learning is also improved. Information technology in education has made it possible for learners to have study groups.

7) The incorporation of information technology in education has brought so many positive changes. More academic systems should embrace technology because it makes teaching more effective and aids in practical learning. Students should also embrace it because in the future, most of the jobs will be technologically based. With time, everyone will see the significance of information technology in education.

PREM KUMAR. R

2ND YEAR IT-'A'

LATEST TECHNOLOGY

(1) SMART PHONES:

Mobile phone technology has advanced, now we have many smart phones to choose from and they come at an affordable price. A smart phone is more like a small computer in your hands, these phones can perform basic tasks you would have done using a computers. Most of them have features like touch screens which makes them unique and easy to use , they have 3G / 4G Wifi connectivity which enables users to surf the web easily and download music or make video calls , they come with

a big memory of about 1 – 18bGB , an extreme Megapixel camera which can capture a photo in a 3D format , they can come with a user friendly operating system like ”Android / Window or iOS , which can allow you to install applications of your interests. So they totally make our lives easier.

Use: They make communication easier and also allow us access information faster. Then for students they use smart phones in M-Learning



(2) 4G BROADBAND ROUTER:

Every internet user dreams of having a very fast internet to enable them to business on a speed of light also live stream videos , play music , download software and books on instant. Time is a very important factor in our lives, so the invention of 4G broadband will enable you do things faster on internet. This ULTRA WIFI 4G modem is just the a tool which can be used to transmit fast internet from your current internet provider (that is if they support 4G).This internet router has 110 MBps of download speed and 10 Mbps up on Advanced extended Global Platform (AXGP) 4G ,it can support up to 10 users and these users can use it to share files across the network using an in build microSDXC.



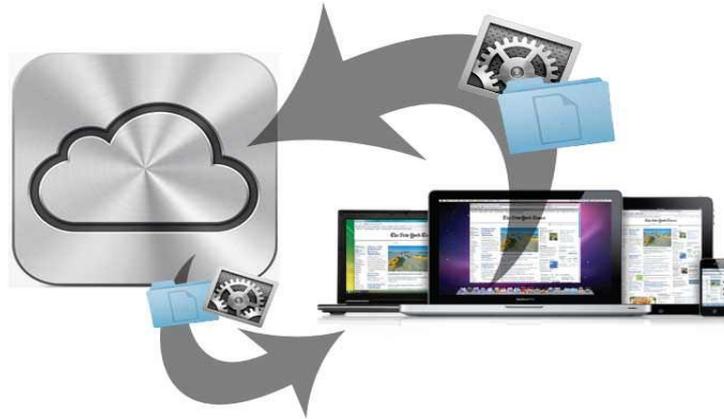
(3) NEW IPAD MINI:

The iPad mini has finally come to the market. APPLE has a reputation of creating classic electronic gadgets. This mini iPad is slim and portable compared to the other tablets. Since technology has to be designed to solve problems, it has to be user friendly as well, so all this is summed up in this iPad mini tablet. By design, it has an aluminum cover and a glass enclosure. It's size is only 7.9 – inch screen , its display is a bit larger so that a user can have a clear visual effect as they enjoy the functionality of the tablet For detailed specification go to Apple Store .. A portable tablet like this one can simplify the way we access information, it comes with all relevant applications and also users can install their own application. It is compatible with 4G technologies so you can use it for E- learning of video streaming.



(4) CLOUD COMPUTING:

Apple iCloud services are far the best as compared to other cloud hosting service. The main function of these cloud hosting services is to store big data files and allow users to stream them live in time. Cloud hosting is very fast compared to dedicate hosting. Users can store their files on Apple's iCloud and these files can include important documents, music, movies , and other important files. This service will allow you to access your data from anywhere using internet and tablets or Smart phones. Related services can include Google Docs , Drop Box , Amazon Cloud which is being used by most online companies . Cloud services are more secure compared to dedicated servers, so your files will be 80% secure on a cloud service.



(5) FACEBOOK:



To some this might sound like old technology, but the truth is that facebook keeps on advancing the its technology . The main use of facebook is to connect people with their old friends and also enable them discover new relationships. This makes the platform essential to our lives and we shall always use it. Their arguments that one day people will find an alternative to Facebook , but the rate at which new users are jumping on the network, proves that even the new generation will use the same platform. User’s tests and expectations keep on changing and it is very important for a business to listen to its customers so that they can tailor their service basing on customers needs, and this is what Facebook has done and will keep doing which will make it a future technology needed by both individuals and businesses.

Mrs. R.JEENA
ASST PROF/IT DEPT

AWAITING A VIRTUOUS LIFE!

God of technology summoning us,
It's still magic even if you know what's done!
I pray my soul, to keep the code for peace!
Does your world lie within 4G or megapixel infinity?
Which memory lies inside you?
The one that was or one at the present?
How much gig or how much RAM?
Hours spent glaring into the screen!
Hours spent scrolling through the texts!
Status updates and trending tweets,
Rob your sleep and throw you apart!
Touch your soul; "unblock" your true friend!
One is always together with the Animate,
And doesn't care to reach her inmate!
If you had those keys,
Ctrl+Alt and Delete!
Just stop and hit those wonderful keys,
That make your life reboot

RA.KAMALAESWARI

II YR-IT-A

THE ROLE OF TECHNOLOGY IN TODAY'S WORLD AND IN THE FUTURE

Technology is an essential part of our lives today and few can imagine living without. We achieved a lot with the help of technology, for example we have the possibility to travel, keep in touch with friends on the other side of the earth and cure many illnesses. It means more freedom and choices for people but at the same time we have to consider the social imbalance, weapons of mass destruction and natural

resource depletion. Jane Godall asks for a reason: ***“We are the most intelligent species walking on earth, how it comes we destroy on what we depend?”*** What has achieved so far is irrevocable, but we can still determine where it goes in the future.

One of the most important things everybody has to deal with is to overcome the short-termism, which prevails in governments, companies and individuals. Additionally we know, that decisions one individual takes are not necessarily good for the society as a whole. This doesn't make it easier.



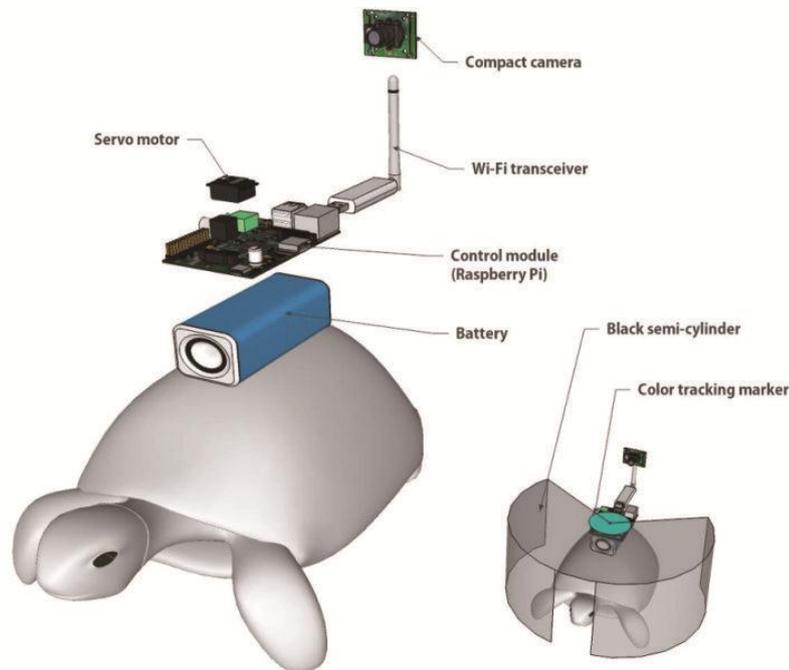
I think it is important to bear in mind the mutual goal: to keep the planet with mankind and all its beautiful animals and plants alive. This implies to make technology as positive as possible for humanity and the environment in the long run. The technology we create now creates the future and it should be for the people and make things easier and not more complicated. So what kind of society will we be?

Technology shapes the future and it can help to make it compatible with nature. It can help us to develop clean energy, transport possibilities with less emissions and low-energy houses to save resources. Technology is not only about technology itself or more efficiency and discovering new methods and processes; we have to add the component of art which is about to make wise choices for the future of technology. We should not develop technology because of itself, but to develop it, because it adds value to society and simplifies human life.

Mrs. M.S.GAYATHRI
ASST PROF/ IT DEPT

CONTROLLING TURTLE MOTION WITH HUMAN THOUGHT

Researchers have developed a technology that can remotely control an animal's movement with human thought.



A human controller influences the turtle's escape behavior by sending left and right signals via Wi-Fi to a control system on the back of the turtle.

Korean researchers have developed a technology that can remotely control an animal's movement with human thought.

In the 2009 blockbuster "Avatar," a human remotely controls the body of an alien. It does so by injecting human intelligence into a remotely located, biological body. Although still in the realm of science fiction, researchers are nevertheless developing so-called 'brain-computer interfaces' (BCIs) following recent advances in electronics and computing. These technologies can 'read' and use human thought to control machines, for example, humanoid robots.

New research has demonstrated the possibility of combining a BCI with a device that transmits information from a computer to a brain, or a so-called 'computer-to-brain interface' (CBI). The combination of these devices could be used to establish a functional link between the brains of different species. Now, researchers from the Korea Advanced Institute of Science and Technology (KAIST) have developed a human-turtle interaction system in which a signal originating from a human brain can affect where a turtle moves.

Unlike previous research that has tried to control animal movement by applying invasive methods, most notably in insects, KAIST researchers propose a conceptual system that can guide an animal's moving path by controlling its instinctive escape behaviour. They chose the turtle because of its cognitive

abilities as well as its ability to distinguish different wavelengths of light. Specifically, turtles can recognize a white light source as an open space and so move toward it. They also show specific avoidance behaviour to things that might obstruct their view. Turtles also move toward and away from obstacles in their environment in a predictable manner. It was this instinctive, predictable behaviour that the researchers induced using the BCI.

The entire human-turtle setup is as follows: A head-mounted display (HMD) is combined with a BCI to immerse the human user in the turtle's environment. The human operator wears the BCI-HMD system, while the turtle has a 'cyborg system' -- consisting of a camera, a Wi-Fi transceiver, a computer control module and a battery -- all mounted on the turtle's upper shell. Also included on the turtle's shell is a black semi-cylinder with a slit, which forms the 'stimulation device'. This can be turned ± 36 degrees via the BCI.

The entire process works like this: the human operator receives images from the camera mounted on the turtle. These real-time video images allow the human operator to decide where the turtle should move. The human provides thought commands that are recognized by the wearable BCI system as electroencephalography (EEG) signals. The BCI can distinguish between three mental states: left, right and idle. The left and right commands activate the turtle's stimulation device via Wi-Fi, turning it so that it obstructs the turtle's view. This invokes its natural instinct to move toward light and change its direction. Finally, the human acquires updated visual feedback from the camera mounted on the shell and in this way continues to remotely navigate the turtle's trajectory.

The research demonstrates that the animal guiding scheme via BCI can be used in a variety of environments with turtles moving indoors and outdoors on many different surfaces, like gravel and grass, and tackling a range of obstacles, such as shallow water and trees. This technology could be developed to integrate positioning systems and improved augmented and virtual reality techniques, enabling various applications, including devices for military reconnaissance and surveillance.

Mrs. S.IRIN SHERLY
ASST PROF/ IT DEPT

MACHINE LEARNING WRITES SONGS THAT ELICITS EMOTIONS FROM ITS LISTENERS

Music, more than any art, is a beautiful mix of science and emotion. It follows a set of patterns almost mathematically to extract feelings from its audience. Machines that make music focus on these patterns, but give little consideration to the emotional response of their audience. Scientists have developed a new machine-learning device that detects the emotional state of its listeners to produce new songs that elicit new feelings.

Music, more than any art, is a beautiful mix of science and emotion. It follows a set of patterns almost mathematically to extract feelings from its audience. Machines that make music focus on these patterns, but give little consideration to the emotional response of their audience. An international research team led by Osaka University together with Tokyo Metropolitan University, imec in Belgium and Crimson Technology has released a new machine-learning device that detects the emotional state of its listeners to produce new songs that elicit new feelings.



"Most machine songs depend on an automatic composition system," says Masayuki Numao, professor at Osaka University. "They are preprogrammed with songs but can only make similar songs."

Numao and his team of scientists wanted to enhance the interactive experience by feeding to the machine the user's emotional state. Users listened to music while wearing wireless headphones that contained brain wave sensors. These sensors detected EEG readings, which the robot used to make music.

"We preprogrammed the robot with songs, but added the brain waves of the listener to make new music." Numao found that users were more engaged with the music when the system could detect their brain patterns.

Numao envisions a number of societal benefits to a human-machine interface that considers emotions. "We can use it in health care to motivate people to exercise or cheer them up."

The device was on display at the 3rd Wearable Expo in Tokyo Japan last January.

Mrs. R.DHARANI
ASST PROF/ IT DEPT

PAYING WITH YOUR FACE

Face-detecting systems in China now authorize payments, provide access to facilities, and track down criminals. Will other countries follow?

Shortly after walking through the door at Face++, a Chinese startup valued at roughly a billion dollars, I see my face, unshaven and looking a bit jet-lagged, flash up on a large screen near the entrance.

Having been added to a database, my face now provides automatic access to the building. It can also be used to monitor my movements through each room inside. As I tour the offices of Face++ (pronounced “face plus plus”), located in a suburb of Beijing, I see it appear on several more screens, automatically captured from countless angles by the company’s software. On one screen a video shows the software tracking 83 different points on my face simultaneously. It’s a little creepy, but undeniably impressive.



Over the past few years, computers have become incredibly good at recognizing faces, and the technology is expanding quickly in China in the interest of both surveillance and convenience. Face recognition might transform everything from policing to the way people interact every day with banks, stores, and transportation services.

Technology from Face++ is already being used in several popular apps. It is possible to transfer money through Alipay, a mobile payment app used by more than 120 million people in China, using only your face as credentials. Meanwhile, Didi, China’s dominant ride-hailing company, uses the Face++ software to let passengers confirm that the person behind the wheel is a legitimate driver. (A “liveness” test, designed to prevent anyone from duping the system with a photo, requires people being scanned to move their head or speak while the app scans them.)

The technology figures to take off in China first because of the country’s attitudes toward surveillance and privacy. Unlike, say, the United States, China has a large centralized database of ID card photos. During my time at Face++, I saw how local governments are using its software to identify suspected criminals in video from surveillance cameras, which are omnipresent in the country.

Facial recognition has existed for decades, but only now is it accurate enough to be used in secure financial transactions. The new versions use deep learning, an artificial-intelligence technique that is especially effective for image recognition because it makes a computer zero in on the facial features that will most reliably identify a person

“The face recognition market is huge,” says Shiliang Zhang, an assistant professor at Peking University who specializes in machine learning and image processing. Zhang heads a lab not far from the offices of Face++. When I arrived, his students were working away furiously in a dozen or so cubicles. “In China security is very important, and we also have lots of people,” he says.

One such company is Baidu, which operates China's most popular search engine, along with other services. Baidu researchers have published papers showing that their software rivals most humans in its ability to recognize a face. In January, the company proved this by taking part in a TV show featuring people who are remarkably good at identifying adults from their baby photos. Baidu's system outshined them.

Face++ pinpoints 83 points on a face. The distance between them provides a means of identification.

Now Baidu is developing a system that lets people pick up rail tickets by showing their face. The company is already working with the government of Wuzhen, a historic tourist destination, to provide access to many of its attractions without a ticket. This involves scanning tens of thousands of faces in a database to find a match, which Baidu says it can do with 99 percent accuracy.

Jie Tang, an associate professor at Tsinghua University who advised the founders of Face++ as students, says the convenience of the technology is what appeals most to people in China. Some apartment complexes use facial recognition to provide access, and shops and restaurants are looking to the technology to make the customer experience smoother. Not only can he pay for things this way, he says, but the staff in some coffee shops are now alerted by a facial recognition system when he walks in: "They say, 'Hello, Mr. Tang.'"

Mrs. D.MURUGESWARI
ASST PROF/ IT DEPT

INFORMATION TECHNOLOGY

Information technology (IT) is a label that has two meanings. In common usage, the term "information technology" is often used to refer to all of computing. As a name of an undergraduate degree program, it refers to the preparation of students to meet the computer technology needs of business, government, healthcare, schools, and other kinds of organizations.

IT professionals possess the right combination of knowledge and practical, hands-on expertise to take care of both an organization's information technology infrastructure and the people who use it. They assume responsibility for selecting hardware and software products appropriate for an organization. They integrate those products with organizational needs and infrastructure, and install, customize and maintain those applications, thereby providing a secure and effective environment that supports the activities of the organization's computer users. In IT, programming often involves writing short programs that typically connect existing components (scripting).

Planning and managing an organization's IT infrastructure is a difficult and complex job that requires a solid foundation in applied computing as well as management and people skills. Those in the IT discipline require special skills – in understanding, for example, how networked systems are composed and structured, and what their strengths and weaknesses are. There are important software systems concerns such as reliability, security, usability, and effectiveness and efficiency for their intended purpose; all of these concerns are vital. These topics are difficult and intellectually demanding.

Mrs.N.SENTHAMILARASI
ASST PROF/IT DEPT

SELF-DRIVING TRUCKS

Tractor-trailers without a human at the wheel will soon barrel onto highways near you. What will this mean for the nation's 1.7 million truck drivers?

Roman Mugriyev was driving his long-haul 18-wheeler down a two-lane Texas highway when he saw an oncoming car drift into his lane just a few hundred feet ahead. There was a ditch to his right and more oncoming cars to his left, so there was little for him to do but hit his horn and brake. “I could hear the man who taught me to drive telling me what he always said was rule number one: ‘Don’t hurt anybody,’” Mugriyev recalls.

But it wasn’t going to work out that way. The errant car collided with the front of Mugriyev’s truck. It shattered his front axle, and he struggled to keep his truck and the wrecked car now fused to it from hitting anyone else as it barreled down the road. After Mugriyev finally came to a stop, he learned that the woman driving the car had been killed in the collision.

Could a computer have done better at the wheel? Or would it have done worse?

We will probably find out in the next few years, because multiple companies are now testing self-driving trucks. Although many technical problems are still unresolved, proponents claim that self-driving trucks will be safer and less costly. “This system often drives better than I do,” says Greg Murphy, who’s been a professional truck driver for 40 years. He now serves as a safety backup driver during tests of self-driving trucks by Otto, a San Francisco company that outfits trucks with the equipment needed to drive themselves.

At first glance, the opportunities and challenges posed by self-driving trucks might seem to merely echo those associated with self-driving cars. But trucks aren’t just long cars. For one thing, the economic rationale for self-driving trucks might be even stronger than the one for driverless cars. Autonomous trucks can coördinate their movements to platoon closely together over long stretches of highway, cutting down on wind drag and saving on fuel. And letting the truck drive itself part of the time figures to help truckers complete their routes sooner.

But the technological obstacles facing autonomous trucks are higher than the ones for self-driving cars. Otto and other companies will need to demonstrate that sensors and code can match the situational awareness of a professional trucker—skills honed by years of experience and training in piloting an easily destabilized juggernaut, with the momentum of 25 Honda Accords, in the face of confusing road hazards, poor surface conditions, and unpredictable car drivers.

And perhaps most important, if self-driving trucks do take hold, they figure to be more controversial than self-driving cars. At a time when our politics and economy are already being upended by the threats that automation poses to jobs, self-driving trucks will affect an enormous number of blue-collar workers. There are 1.7 million trucking jobs in the U.S., according to the Bureau of Labor Statistics. Technology is unlikely to replace truckers entirely anytime soon. But it will almost certainly alter the nature of the job, and not necessarily in ways that all would welcome.

“We’re not waiting”

Otto’s headquarters, in the once-seedy South of Market section of San Francisco, isn’t much like many of the other tech startups that have transformed the area. Proudly oblivious to that neighborhood upgrade,

it's a barely renovated former furniture warehouse converted to a garage and machine shop, with semi trucks in various states of dismantlement hulking over benches of tools and computers. "No fancy, shiny offices here," brags Eric Berdinis, Otto's young and clean-cut-looking product manager.

Berdinis shows off the latest generation of the company's fast-evolving technology, which is currently installed on Volvo semis. Unlike the bolted-on, kludgy-looking hardware that's been on testing runs for the past year, the newer versions of the company's sensor and processing arrays are more sleekly integrated throughout the Volvo cab. The equipment includes four forward-facing video cameras, radar, and a box of accelerometers that Berdinis boasts is "as close as the government allows you to get to missile-guidance quality."

Particularly key to Otto's technology is a lidar system, which uses a pulsed laser to amass detailed data about the truck's surroundings. The current third-party lidar box costs Otto in the vicinity of \$100,000 each. But the company has a team designing a proprietary version that could cost less than \$10,000.



A human can push the red buttons to the right of the steering wheel to instantly take over from the self-driving system.



The driver can sit in the back of the cab while the truck drives itself—albeit in the right lane only.



A shipment of Budweiser was loaded onto an autonomous Otto truck last year.



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Inside the cab is a custom-built, liquid-cooled, breadbox-size micro-supercomputer that, Berdinis claims, provides the most computing muscle ever crammed into so small a package. It is needed to crunch the vast stream of sensor data and shepherd it through the guidance algorithms that adjust braking and

steering commands to compensate for the truck's load weight. Rounding out the hardware lineup is a drive-by-wire box to turn the computer's output into physical truck-control signals. It does this through electromechanical actuators mounted to the truck's mechanical steering, throttling, and braking systems. Two big red buttons in the cab—Otto calls them the Big Red Buttons—can cut off all self-driving activity. But even without them, the system is designed to yield to any urgent tugs on the steering wheel or heavy pumps of the pedals from anyone in the driver's seat.

Even if drivers stay on in the cab, it's not clear the economics will work out in their favor.

Otto was founded early in 2016 by Anthony Levandowski, who had been with Google's self-driving-car effort, and Lior Ron, who headed up Google Maps, along with two others. It was a natural move to build on Google's vast experience with its autonomous cars, which have driven more than two million miles on U.S. roads in several states, with an eye toward the four million trucks in the U.S. alone. Volvo Trucks, Daimler Trucks, and Peterbilt have been working on their own autonomous-truck technology.

There are other anticipated savings from having trucks drive themselves across America's 230,000 miles of highway. Fuel is about a third of the cost of operating a long-haul truck, and while drivers are capable of wringing maximum miles per gallon from their trucks, many are too heavy-footed on the pedals. (Berdinis says the best drivers are 30 percent more fuel-efficient than the worst ones.) Otto's equipment is programmed to keep trucks pegged to optimal speeds and acceleration.



Otto says it has no intention of getting drivers out of the cab entirely—at least for the next decade.

Then there's the potential to cut down on accidents. Truck and bus crashes kill about 4,000 people a year in the U.S. and injure another 100,000. Driver fatigue is a factor in roughly one of seven fatal truck accidents. More than 90 percent of all accidents are caused at least in part by some form of driver error. We don't yet know what fraction of those errors would be eliminated by autonomous technology—or what new errors might be introduced by it—but tests of self-driving cars suggest the technology will cut down on mistakes.

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ASSOCIATE PROF/ IT DEPT

POETRY ABOUT INFORMATION TECHNOLOGY

INFORMATION TECHNOLOGY

The information you have is not what you want
The information you want is not what you require
The information you require is not what you can get
The information you can get costs more than you desire

Mrs.N.SENTHAMILARASI
ASST PROF/IT DEPT

INFORMATION TECHNOLOGY

Do you ever sit and back and think
Is this all that I have mastered?
Waking up in the morning
Late for the third, time.
If only there was more of it
We could pocket it and keep it
Use it only when we really need it
It
It
IT
Where would we be
If you couldn't read this or save it
Tweet it or fave it
We Wouldn't have, anything

NANDHINI.S
II YEAR IT-A

THE TROUBLE WITH EDUCATION

Too much of it
has a tendency
to produce P. A. S.*

Once you know everything,
there's no excitement
to be had
in any direction.

Learning something new
is exhilarating,
pops my cork.

An invigorating day happens
when I can write
new information
on the R. A. M.**
of my brain.

Oh, how I pity those
who simply have
nothing else to learn.

*Pompous A__ Syndrome
** Random Access Memory

Mrs.N.SENTHAMILARASI
ASST PROF/IT DEPT

MY LAPTOP

My Laptop has a name
Its Apple MacBook Air 13-Inch (2015)
Its life begins with a disk drive
It got various basic dialects such as C, FORTRAN, or Pascal
It has a random access memory without brain
I upgrade it when the going gets tough,

I hope my motherboard would find a fatherboard so I could have anotherboard
It house input and output devices without having a home
It performs specific operations like physicians
It use a touchpad instead of a house mouse,
If you want to go forward, backup
It can display information in a human understandable form

It got gates and windows?
It's hardware problems are due to truck driver errors
Sometimes its program is so sick
I feel like shooting it and put it out of its memory
Output and Kaput
It defragmented my entire life
Because I find its faith in technology amusing
The operating table on my laptop is called Facebook...

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