



**PANIMALAR INSTITUTE OF TECHNOLOGY
(A CHRISTIAN MINORITY INSTITUTION)**

JAISAKTHI EDUCATIONAL TRUST

(AN ISO 9001:2008 CERTIFIED INSTITUTION)

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ENVISION'18

Technical Magazine DEPARTMENT OF INFORMATION TECHNOLOGY

Accredited by National Board of Accreditation





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POONAMALLEE, CHENNAI-600123

ENVISION '18
DEPARTMENT OF INFORMATION TECHNOLOGY

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About the College

Panimalar Institute of Technology started by **Jaisakthi Educational Trust** focuses mainly 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.

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.

Students :

Staff :

Industry and Profession :

Our well-equipped Engineers.

Our means.

End users.

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.

Lab Facilities



Message from the Secretary



**Dr.P.Chinnadurai,M.A.,Ph.D.,
Secretary and Correspondent,
Panimalar Institute of Technology**

I am very much honored and proud 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

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.



**Mr.C.Sakthikumar,M.E.,M.Phil. Director,
Panimalar Institute of Technology**

Message from the Principal



**Dr.T.JAYANTHY, M.E., Ph.D.,
Principal,
Panimalar Institute of
Technology**

I am very much proud 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

It is a great 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

ANDROID BASED AUTOMATED WHEELCHAIR CONTROL

Second International Conference On Recent Trends and Challenges in Computational Models(ICRTCCM-2017)

Dr.A.Joshi and Dr.R.Josphineleela

Abstract :

The physically challenged people are having the difficulties in walking due to illness, injury, or disability. The proposed system is easy and efficient to solve the problem of physically challenged people and also it has the best functionality and it is simple and low cost. Wheelchair provides mobility which does not depend, the ability to participate in society and earn a living. The handicapped person gives their voice to the android mobile, output of the Android mobile is voice command that is converted into text. The output of the mobile is given to the microcontroller and the proposed system movement is controlled using Bluetooth module with the help of DC motors. This proposed system has battery powered wheelchair with DC motors. Also an ultrasonic sensor is used to detect the obstacle.

AUTOMATIC DISABLING AND ENABLING OF MOBILE PHONES IN RESTRICTED AREAS

International Journal of Engineering Trends and Technology

Dr.A.Joshi

Abstract :

The purpose of this paper is to disable the mobile phones in restricted areas. Restricted means something is put under control or limits. The usage of mobile phones in some restricted areas like hospitals, petrol bunks, conference hall, temples, examination hall, and theatres should be avoided.

In order to reduce disturbances, distraction, and accidents to control noise pollution and to ensure safety and security the mobile phone should be disabled automatically without any manual help. Besides safety, public mobile phone use should be restricted in certain places to ensure there is peace and quiet, which allows concentration and focusing on work. This could be done by using a wifi module, Arduino controller and a mobile application. The mobile phones gets back to the normal mode when the user leaves the restricted area using the same mechanism.

ASSISTIVE ANDROID APPLICATION FOR HEARING IMPAIRED PEOPLE USING SIGN LANGUAGE

Advances in Natural and Applied Sciences

Dr.A.Joshi

Abstract :

Hearing impaired people rarely used mobile phones before the introduction of SMS/MMS. Now texting allows both the deaf and hearing people to communicate with each other. Mobile video chat may one day replace texting but are not suitable for hearing impaired callers. Sign Language is the primary means of communication in the deaf community. The problem arises when the deaf people try to express themselves to other people with the help of these sign language grammar.

Our proposed system provides a learning as well as an interactive application .It enables both normal and deaf people to learn the sign language and also provides communication between them via text messages and sign language videos.

A COMBINED APPROACH FOR HOME AUTOMATION USING RASPBERRY

IAETSD Journal for Advanced Research in Applied Sciences

Dr.R.Josphineleela

Abstract :

In this project, we propose the system for smart home automation using Fuzzy logic with WiFi. It has the capability to perform intelligently adaptive to user preferences, which are focused on improved user comfort, safety and enhanced energy performance. Internet of Things (IoT) is one of the promising technologies which can be used for connecting, controlling and managing intelligent objects which are connected to Internet through an IP address. Devices such as light switches, power plugs, fans, motor, temperature sensors, humidity sensors, and infrared sensors have been integrated in the system to demonstrate the feasibility and effectiveness of the proposed system. This system can control the home appliances automatically based on the threshold values set by the user as well as be remotely controlled by the user himself.

HUMAN STRESS MONITORING SYSTEM USING WEARABLE SENSORS

Advances in Natural and Applied Sciences

Dr.R.Josphineleela

Abstract :

Workers have a right to a safe workplace. A safe and healthy workplace is one of the keys to business success. To develop a system that can accurately predict the stress level with a given input set of data such as body temperature, pulse rate and blood pressure. To monitor the symptoms and diagnose the vital signs that is caused due to increase in stress. The collected data are analyzed and the victim is prescribed to consult the concerned doctor.

RFID AND UNIVERSAL NUMBER VEHICLE MONITORING, TRACKING AND TRAFFIC FREE SYSTEM

Middle-East Journal of Scientific Research

Mr.R. Vinston Raja

Abstract :

Radio frequency Identification (RFID) technology is having a major impact on the vehicle industry by attaching radio frequency tags to different entities. UIVN is the updated version of vim used in the 19th century, VIN is a visible plate whereas UIVN is invisible and it only emits the radiations which could be read by the reader placed in the toll gates and signals. RFID and UIVN can provide identification, tracking, location, security and other capabilities. The goal of this paper is to show how RFID and UIVN can be used to track the theft vehicle and identifies it, this technologies also enables us to monitor the logs of our vehicle and also used for electronic billing in toll gates and to detect traffic density.

EFFICIENCY OF MULTIMEDIA CLOUD COMPUTING TO SAVE INTELLIGENT PHONE POWER

Middle-East Journal of Scientific Research

Mrs. S. Irin Sherly

Abstract :

In spite of the melodramatic progress in the number of intelligent phones in present years, the examination of manipulated energy capacity of these machines has not been resolved satisfactorily. But, in the period of cloud computing, the limitation on power capacity can be relieved off in an effectual method by offloading heavy tasks to the cloud. In this

undertaking, we assess the power price of multimedia requests on intelligent phones that are related to Multimedia Cloud Calculating (MCC). In counseled arrangement we contrasted the power prices for uploading and downloading a multimedia file to and from MCC alongside the power prices of encoding the alike multimedia file on an intelligent phone. We counsel a novel method for storing a multimedia file like picture, audio, video, text on the cloud to reduce energy consumption. Our aftermath display that MCC provides the intelligent phones alongside far multimedia functionality and saves intelligent phone power from 30% to 70%.

IMPROVING SECURITY IN MOBILE NETWORK ACCESS USING SCREEN BRIGHTNESS AND SYMBOLS

Advances in Natural and Applied Sciences

Mrs.S. Irin Sherly

Abstract :

In today's mobile communications scenario, smartphones offer new capabilities to develop sophisticated applications that make daily life easier and more convenient for users. Such applications may involve mobile ticketing, identification, access control operations, online transactions etc., are often accessible through social network aggregators. The modern smartphones are very powerful devices but it also makes them very attractive targets for spyware injection. This kind of malware is able to bypass classic authentication measures and steal user credentials even when a secure element is used, and perform unauthorized mobile access to social network services without the user's consent. Such an event allows stealing the sensitive information or a full identity theft. In this work, we address this issue by introducing Bright Pass which is a novel authentication mechanism based on screen brightness. Bright Pass allows users to

authenticate with a PIN based confirmation in the presence of specific operations on randomly arranged objects (i.e. ., symbols). Furthermore, we empirically assess the security of Bright Pass through experimentation. Our tests indicate that Bright Pass and symbols protects the PIN code against automatic submissions carried out by malware while granting fast authentication phases and reduced error rates.

INSTANCE BASED MATCHING AND RETRIEVAL IN THE HETEROGENEOUS DATASETS USING INTERLINKING METHODOLOGY

Advances In Natural and Applied Sciences

Mr. J.S. Umashankar

Abstract :

State-of-the-art instance matching approaches don't perform well once used for matching instances across heterogeneous datasets that involves instantaneous comparison of instances within the supply with instances within the target dataset? Direct matching isn't appropriate once the overlap between the datasets is tiny. We tend to propose a brand new paradigm known as class-based matching. Given a category of instances from the supply dataset, known as the category of interest, and a collection of candidate matches retrieved from the target. For this refinement, solely knowledge within the target is employed, i.e., no direct comparison between supply and target is concerned. In this paper we proposed new approach called class-based matching, which matches a class of instances from the source dataset which is the class of interest and the filtered dataset is a set of candidate matches retrieved from the target. There is a difficult task with a small overlap between dataset that cannot be solved using state-of-the-art direct matching approaches. The proposed system

concentrates on direct matching in combination with class-based matching (CBM) and also it provides the security for those heterogeneous datasets.

UTILITY DIRECTED FEDERATION OF CLOUD COMPUTING ENVIRONMENTS FOR SCALING OF APPLICATION SERVICE

World Applied Sciences Journal

**Mr. D. Kamalakannan, Mr. R. Praveen Kumar, Mr. A. Palaniraj and
Mrs. S. Silambarasi**

Abstract :

The cloud cannot purchase their own hardware they promote the idea of leasing remote resources that frees from permanent maintenance prices and eliminate the burden of hardware. Cloud technology reduces price of installation by removing further hardware applications that require to be supplementary to super pc however fulfills enlisting. To the resources required. Through the new idea of "scaling-by credit card". The idea of hardware virtualization will represent a big breakthrough automatic and scalable preparation of advanced scientific code. The resources through business relationships contains specialised knowledge Centre corporations in providing reliable services that existing grid infrastructure fail to deliver. For scientific applications there exist many integrated environments for clear programming and high performance. during this the user composes progress application at a high level of abstraction employing a UML graphical modeling tool. The abstract progress is given in an exceedingly XML kind to middleware services for clear execution on to the grid. Clouds promote the idea of leasing remote resources instead of shopping for own hardware, that frees establishments from permanent maintenance prices and eliminates the burden of hardware deprecation. Clouds eliminate the physical overhead value of adding new hardware similar to work out nodes

to clusters or supercomputers and also the monetary burden of permanent over-provisioning of sometimes required resources. Through a brand new idea of “scaling-by credit-card”, Clouds promise to instantly scale up/down associate degree infrastructure consistent with the temporal wants during a value effective fashion. the idea of hardware virtualization will represent a big breakthrough for the automated and ascendible readying of advanced scientific software package and might conjointly considerably improve the shared resource utilization.

STRUCTURE FOR COLLECTING MASTERING GADGETS FROM DIGITAL DOCUMENTS

Middle-East Journal of Scientific Research

Mr. M. Krishna raj

Abstract :

To be compelling, technology-supported learning systems require a proper Space Module, which improve academic representation of the area to be educated. The Space Module is viewed as the center of any TSLs as it speaks to the information about a topic to be imparted to the learner. Electronic reading material may be utilized as the source to fabricate the Area Module, recreating how normal educators carry on while setting up their subjects: they pick an arrangement of reference books that will give the primary instructive resources(DRs)— definitions, cases, works out—for the subject and depend on them for planning their lectures. Artificial knowledge methods give the way to the programmed development of the Space Modules from electronic course books which may fundamentally add to lessen the improvement cost of the Area Modules. This venture presents DOM-Sortze, a system for the programmed era of the Area Module from

electronic reports. DOM-Sortze fills in as an area free, consequently no particular space information is utilized with the exception of the handled electronic course reading and the learning assembled from it.

ENHANCED ANTI-CONSPIRACY STATISTICS SHARING SCHEME FOR SYSTEM PROTECTION

Middle-East Journal of Scientific Research

Mrs. N. Senthamilarasi

Abstract :

The information outsourcing advancement challenges the methodologies of conventional get to control structures, for example, reference screen; that a trusted server is accountable for portraying and authorizing access control arrangements. The primary extent of the venture is utilized to convey the client information in the outsider region for on request get to. The client get to the subtle elements as benefit level in light of get to control. The double encryption is prepared in the cloud environment which is shifted shape one gathering to another for secure process. The paper propose a novel calculation to be specific cipher text strategy ascribe based encryption to authorize get to control rules with effective characteristic and client renouncement capacity. Double encryption component which exploits the trait based encryption and particular gathering key partaking in every quality gathering. The cipher text-strategy EABE gives a versatile method for disentangling information with the end goal that the encrypt or characterizes the quality set that the decode or needs to have to unscramble the cipher text. Along these lines, uncommon customers are permitted to disentangle particular bits of data per the security approach.

This satisfactorily takes out the need to trust on the limit server for foreseeing unapproved data get to.

PRODUCTIVE RESOURCE ASSIGNMENT APPROACH TO SUPPORT THE EXECUTION OF CLOUD COMPUTING

Middle-East Journal of Scientific Research

Mr. J. Chennikumar , Ms. M. Sundhari

Abstract :

Distributed storage offering number of administrations where you can transfer, report, information, pictures, recordings and different documents to a site to impart to other. These documents can access from any area or any sort of gadget (portable workstation, cell phone, tablet and so forth). Distributed computing appropriates the computational assignments on the asset pool which comprises of huge PCs so that the administration customer can increase most extreme calculation quality, more storage room and programming administrations for its application as indicated by its need. Today's number of client in cloud are increment step by step they utilized cloud benefits But as the interest for cloud administrations builds, the following increments in cost and multifaceted nature for the cloud supplier may get to be unendurable means a gigantic measure of information moves from client to host and has to client in the cloud environment. Now and again two or various client ask for a similar asset. In light of the over these contemplations, how to choose fitting host for getting to assets and making a virtual machine (VM) to execute applications with the goal that execution turns out to be more effective and get to cost turns out to be low are the testing assignments. To tackle this issue and increment the execution of distributed computing environment booking of

errand performed with a specific end goal to increase most extreme benefit. This venture gives a methodology for employment booking. In this paper, an endeavor has been made to propose a host determination show in view of least execution time to minimize cost. Our examination additionally endeavors to plan the employments such a route, to the point that cloud supplier can increase most extreme advantage for his administration and Quality of Service (QoS) prerequisite client's occupation. This technique upgrades the execution of cloud administration.

PROXY RE-ENCRYPTION FOR ENHANCING SECURITY OF SHARED DATA IN CLOUD

International Journal of Advanced Research in Science

Mrs. Dharani R

Abstract :

In normal Public Key Encryption the data owner needs to download and decrypt the requested data, and further re-encrypt it under the target user's public key which introduces extra computation cost and communication overhead to the data owner and that contradicts the motivation of cloud computing. Another way to think of is to allow data owners to define access policies and encrypt the sharing data with the attribute-based encryption under the access policies, only authenticated users whose attributes matching their policies can decrypt the cipher text. However, here also data owner needs to download, decrypt and re-encrypt the requested data in case data access policies change dynamically and frequently. To overcome these drawbacks Proxy Re-Encryption scheme gives a concrete solution for secure data sharing in cloud computing which deprives user's direct control over the outsourced data. By making cloud server responsible for re-

encryption this application reduces communication overhead, extra computational cost which have been introduced to data owners.

SENSOR BASED DAM GATE CONTROL SYSTEM & ALERT USING ZIGBEE

International Journal of Advanced Research in Science

Mrs. Dharani R

Abstract :

Floods are natural phenomenon that brings havoc to human life. It is necessary to bring dam controlling system to overcome the threats posed by floods. This system focuses on using Zigbee for providing availability and the provisioning of an alarm system for intimation of the nearby area in case of any emergency. It has an added advantage of being transparent to the public and also controls the speed of the motor for outflow of water. The system comprises of the dam controlled by a control room and uploading the data to the website such that it can be accessed by the public.

WHEEL CHAIR CONTROL BASED ON BIOMETRIC WITH AUTOMATIC OBSTACLE DETECTION

International Journal of Scientific Research in Computer Science, Engineering and Information Technology

Mr. Praveen Kumar R

Abstract :

This paper basically provides a real time model of a low cost wheel chair based on the guiding movement of the tongue, for the persons disabled with quadriplegia. The model is realized through the data comparison in

serial communication with the special purpose microcontroller IC. In this paper tongue is our object detected by using infrared signals to serially interact with the controller, which in turn, controls the wheel chair movements. This communicative act with as the wireless, be here we use RF transmitter and receiver after then controlled by the wheelchair. In this model Ultrasonic sensor used to detect obstacles and Image processing is done to recognize the obstacle and provides them information about the obstacle.

SMART IRRIGATION AND NUTRITION MONITORING SYSTEM

Advances in Natural and Applied Sciences

Mrs. G. Dhanalakshmi

Abstract :

In this project we are using PIC16F877A, controller to monitor the field. In this water level sensor and Soil nutrition sensor is used to monitor the field environment and flooding of the fields. If any abnormalities means send SMS to the owner. The Water level sensor is used to monitor the water level of ground. The controller have program for control the water level so we can control the water level using two pump motors.

If water level will high it will compare it to program then the water pump motor will supply water to the ground. The Soil nutrition is used to identify the nutrition Level in the soil. Also the temperature sensor is used to track environmental changes and also maximize energy efficiency and grow healthier crop with higher yield. Controller status and everything is displayed in LCD. The whole process is controlled by microcontroller.

DYNAMIC RIDE SHARING FOR USERS IN AUTONOMOUS VEHICLE IN STATE LEVEL MOBILITY

International Journal of Multi-Disciplinary Research

Mrs. P. Sheela rani

Abstract :

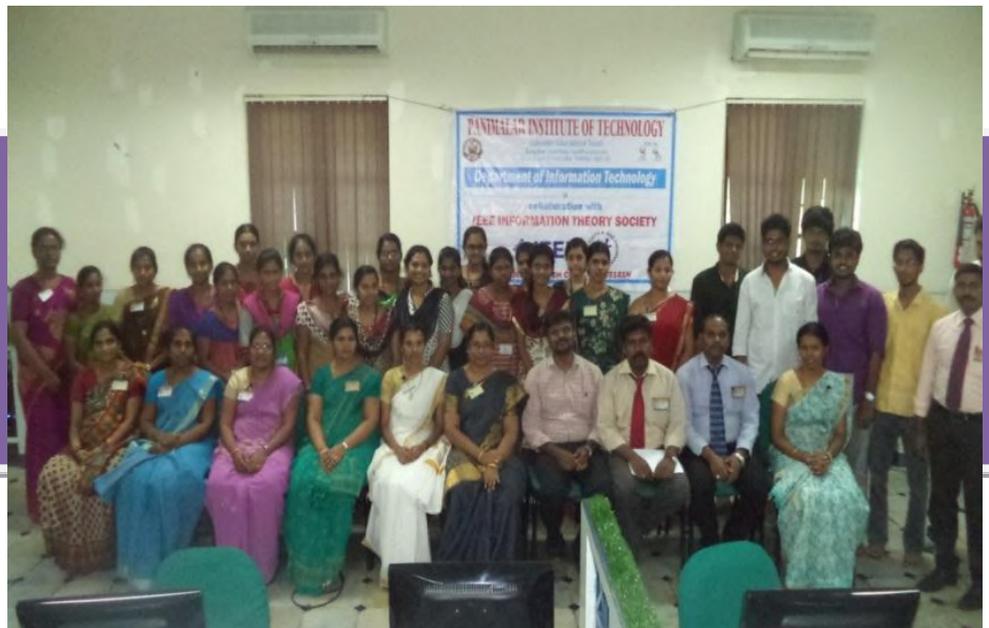
Taxi is a vital transportation mode in urban areas delivering scores of passengers to their destinations. However the demand for taxis in peak time is much higher. Increasing the taxi count is not a wise plan because it can increase road traffic additionally. Therefore utilizing the out there resources in an effective way will be a good solution for this problem. The main objective of this project to provide dynamic ride-sharing system that accepts taxi passengers' real-time ride requests sent from smart phones and schedules proper taxis to pick up them via ridesharing and private riding, subject to time, capacity, and monetary constraints.

A car-pooling option for private car owners whoever travels in a regular route and personalized context aware safety prediction and recommendation for destination location for ensuring precautions?

Department Events and Activities

Certificate Course on Rasperry pi :

A certificate course for III year students on "Rasperry Pi Python" in association with IEEE and CSI , Department of Information Technology was organized from 29th May 2017 to 2nd June 2017. Dr.A.Joshi HOD/ IT, welcomed the chief guest Mr.Arun Prabakar, Assistant Manager, NSIC Technical Services Centre, The National Small Industries Corpn. Ltd . He gave a brief introduction about the basic concepts of Python . During his provoking lecturer , he discussed the some real time examples and also demonstrates the various experiments using the Rasperry Pi Kit . He also discussed various logics to the students how to write the programs in Python . This session enabled the students to get practical exposure in Rasperry Pi Python .The students interacted with the resource person enthusiastically .



Internal Placement Training Class :

- ✓ II year students attended the Placement Training Class training program conducted by the Internal faculty members at Panimalar Institute of Technology, Weekly five session from 05.07.2017 to 28.07.2015.
- ✓ III year students year students attended the Placement Training Class training program conducted by the Internal faculty members at Panimalar Institute of Technology, Weekly five session from 05.07.2017 to 28.07.2015.
- ✓ IV year students attended the aptitude training program conducted by the Outside Resource persons from organized by the Panimalar Institute Of Technology placement Cell.

Guest Lecturer

- ✓ Final Year students of our department attended the Guest Lecturer "HOW TO PREPARE FOR INDIAN NAVY" presented by Mr. N Mr. Yaswanth from "Indian Navy",at Panimalar Institute of Technology, on 23.08.2017.
- ✓ Final Year students of our department attended the Guest Lecturer "Cloud Computing" organized by the Department of Information Technology presented by Mr. S. Baskar from " Linux Expert System ",at Panimalar Institute of Technology, on 28.07.17



- ✓ Third Year students of our department attended the Guest Lecturer "Internet of Things " organized by the Department of Information Technology presented by from "Mr. Albert Einstein, Founder & President, Einnel Technologies and Mr. Stalin Michael, CEO, Einnel Technologies, USA at Panimalar Institute of Technology, on 20.07.17
- ✓ Third Year students of our department attended the Guest Lecturer "Design & Analysis Of Algorithm" presented by Dr.John Augustine, IIT Prof organized by the Department of Information Technology presented by from at Panimalar Institute of Technology, on 05.10.17.



- ✓ Second Year students of our department attended the Guest Lecturer “Database Management System” organized by the Department of Information Technology presented by “Mr. Joel S Davis” Project Manager, from “Infosys”, at Panimalar Institute of Technology, on 20.07.17.



- ✓ Second Year students of our department attended the Guest Lecturer “SDLC- A Real Worls Views” in collaboration with IEEE and CSI organized by the Department of Information Technology and CSE presented by “”, from “Sysvedha”, at Panimalar Institute of Technology, on 19.01.18.



- ✓ Second Year students of our department attended the Guest Lecturer “Motivational Talk” in collaboration with IEEE and CSI organized by the Department of Information Technology presented by “Mr.Jeeva”,from “Microsoft”, and Mr.Anirudh from Mercedes Benz at Panimalar Institute of Technology, on 25.01.18.



- ✓ Third Year students of our department attended the Guest Lecturer "Higher Studies" in collaboration with IEEE and CSI organized by the Department of Information Technology presented by Mr. Murali Karthikeyan, Head - Academics (GATE), T.I.M.E Education Chennai Private Ltd,at Panimalar Institute of Technology, on 14.02.2018.



- ✓ Third Year students of our department attended the awareness program "Robotics" in collaboration with IEEE and CSI organized by the Department of Information Technology presented Mr.H.Balaji Chief executive Officer,Prag Robotics Private Limited,at Panimalar Institute of Technology, on 12.02.2018.
- ✓ Our Alumni talked about the current demand for industry He stressed on most important factors that an interviewer look for in the candidate.

Conducted by Department of Information Technology in association with IEEE and CSI for II year students on 04.10.2017



INDUSTRIAL VISIT:

- II year students(Girls) visited the **Uniq Technologies** on 14.07.2017 (Friday)
- II year students(Girls) visited the **VIS Technological Park**, Bangalore on 22.07.2017 (Saturday)
- II year students(Boys) visited the **UNIQ Technologies** T.Nagar , Bangalore on 14.07.2017 (Friday)

- II year students(Boys) visited the **VIS Technological Park**, Bangalore on 14.07.2017 (Friday)
- II year students(Boys) visited the **CDAC, Electronic City**, Bangalore on 14.07.2017 (Friday)
- III year students(Girls) visited the **Micro Star PVT LTD**, Anna Nagar on 14.07.2017 (Friday)
- III year students(Girls) visited the **CDAC, Electronic City**, Bangalore on 21.07.2017 (Friday)
- IV year students(Boys) visited the **Global Techno Solutions**, Ashok Nagar,Anna Nagar on 16.08.2017 (Wednesday)
- IV year students(Girls) visited the **Global Techno Solutions**, Ashok Nagar,Anna Nagar on 23.08.2017 (Wednesday)
- IV year students(Boys) visited the **Indian Institute Astro Physics**, Kodaikanal on 14.07.2017 (Friday)
- IV year students(Girls) visited the **Indian Institute Astro Physics**, Kodaikanal on 22.07.2017 (Friday)

SHORT TERM COURSES

A short-term course on "PHP" was conducted by our Department for the II and III year students during the month of Sep 2017. More than 20 students attended the short term course to sharpen their skill.



- Value Added Course on **"PYTHON"** Conducted by Department of CSE in association with IEEE and CSI for III Year during the months of August, September, & October 2017.



- Online technical quiz competition (C,C++, Data structures, Java, DBMS and OS) for IV year and III students. Conducted

by Department of Information Technology in association with IEEE and CSI on 20.09.2017.



TEACHERS DAY

Department of Information Technology in association with IEEE and CSI , celebrated the teachers on 5th Sep, 2017. They organized several events such as Technical Quiz, Technical Connections and technical Dumshreds for the second year and third year students.





WORKSHOP

Three Days Mobile Game Development Workshop was conducted from 21.09.2017 to 23.09.2017 for the II, III and IV year students of IT, presented by Mr.Prem Selvakumar from Qneuro India Private Limited at Panimalar Institute of Technology.

Five Days IoT Workshop was conducted from



18.01.2018 to 20.01.2018 and 09.02.2018 to 10.02.2018 for the II and III students of IT, presented by Mr.Balaji from Infoziant Technology, at Panimalar Institute of Technology.



A three days certification course on "CCNA" was conducted for the Third and Second year students of our department around 28 students attended the workshop to enhance the knowledge in the area network, conducted by "Mazenet Solution" at Panimalar Institute of Technology ,from 15.02.2018 to 17.02.2018.



TRAINING PROGRAM

Eight days technical training program on Database for third year, presented by Mr.Joel S Davis, Project Manager from Infosys, organized by the Department of Information Technology at Panimalar Institute of Technology.



Students Activities :

- IV Year students actively participated in poster making contest conducted by Department of Electrical & Electronics ,at Panimalar Institute of Technology on 21.09.2017 .
 - K.Hamsageetha.

- A.Sai Swetha
- S.Pavithra



CLUB INAUGURATION :

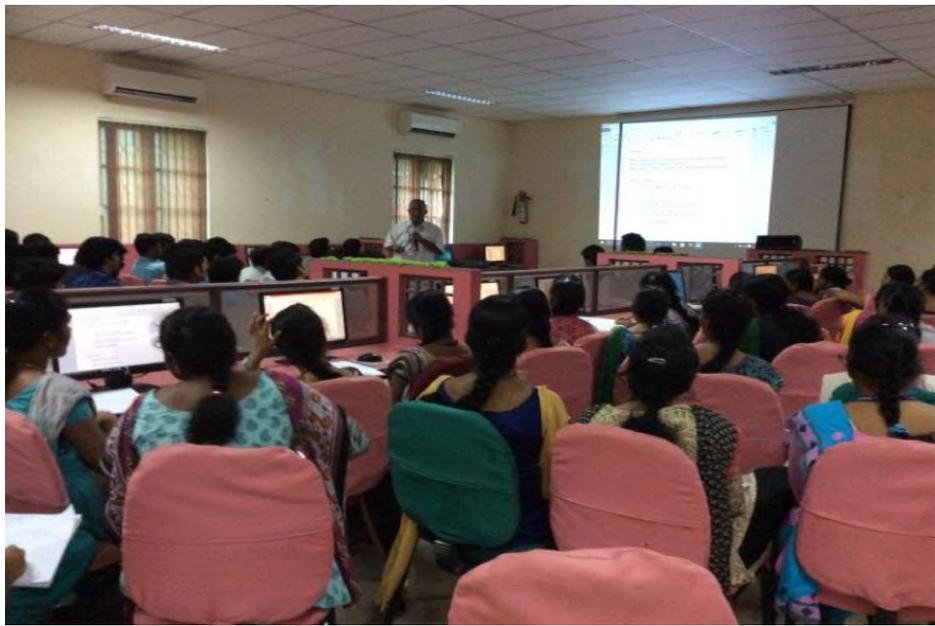
- Mobile Application Development club was inaugurated by the chief Guest Mr.Prem selvakumar from unity software and Dr.A.Joshi HOD/IT on 21.09.2017 at Panimalar Institute of Technology.
- Robotics Club was by the chief Guest M K Swaminathan Founder & CEO, AROBOT Director, MooVita India-Singapore and Dr.A.Joshi HOD/IT on 25.09.2017 at Panimalar Institute of Technology.





MICROSOFT CERTIFICATION

A eight days workshop on software development cum Microsoft certification course was conducted for the final year of our department around 18 students attended the workshop to enhance the knowledge in the area of how to develop the application, conducted by Vijayalakshmi software solution, at Panimalar Institute of Technology ,from 03.10.2017 to 10.10.2017.



HIGHER EDUCATION:

Department of Information Technology day in association with IEEE and CSI organized the Lecture Programme on Higher Studies program for the IV year students on 09.09.2017.



STUDENTS ACHIEVEMENTS

- Third year student R.A.Kamalaeswari our department actively participated in the event “Brain Buster” and she won a “III Prize ” conducted by Prince Shri Venkateshwara padmavathy Engineering College on 01.08.2017
- Third year student R.Sibiyal our department actively participated in the event “Non-Technical Minute to WinIT” and she won a “II Prize ” conducted by Prince Shri Venkateshwara padmavathy Engineering College on 01.08.2017
- Final year student of our department presented their project of Will-Walk For- Change ,in the competition of “Smart India Hackathon 2017” ,students are awarded by cash prize of Rs.5000 conducted by the Rajalakshmi Engineering College “on 26.08.2017 & 27.08.2017
 - P.HARINI
 - S.SANDHYA
 - V.TARULATHA
 - B.AKSHAYA



STUDENTS ACTIVITIES (Workshop, Conference & Symposium)

- Third year student of **G.Ishwarya** our department actively participated in the event " Brain Buster" conducted by Prince Shri Venkateshwara padmavathy Engineering College on 01.08.2017.
- Third year student of **U.Shree Preethi & M.Reethika** our department actively participated in the event "Non-Technical Minute to WinIT" conducted by Prince Shri Venkateshwara padmavathy Engineering College on 01.08.2017.
- Third year student of our department presented their project of Will walk for Change, in the competition of "Smart India Hackathon 2017" ,conducted by the Rajalakshmi Engineering College "on 26.08.2017 & 27.08.2017.
 - **G.Ishwarya**
 - **R.A.Kamalaeswari**
 - **Indhu**



- Third year(3 student) of our department presented the paper "HealthCare System using IoT",in the paper presentation event organized by the Rajalakshmi Engineering College "on 8/9/2017."
 - Divya Dinesh
 - G.V.M.Lakshmi
 - Ramya
 - Anjana



- Third year(3 student) of our department presented the paper "Device Using IoT for Visually Impaired", in the paper presentation event organized by the Rajalakshmi Engineering College "on 8/9/2017."
 - Mahetha K.Rajan
 - R.Sahana
 - L.Sailaja



STAFF ACHIEVEMENTS

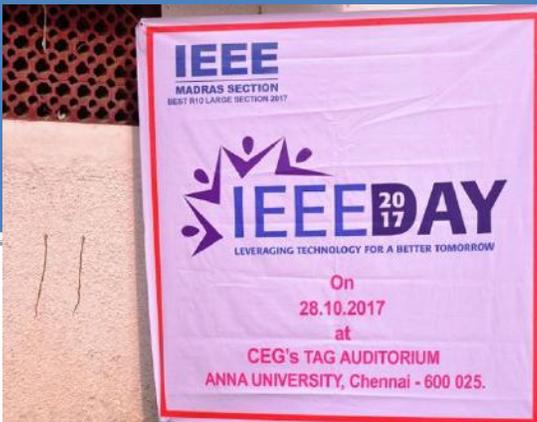
- ✓ **Dr. A. JOSHI, Professor & Head, Dept. of IT Received Best HOD Award from CSI Mumbai, TechNext India 2018.**



- ✓ **Dr.R.JOSPHINELEELA, Professor has received IEEE membership achievements certificate from IEEE R10 Large Section Award Celebration held on 28th oct 2017-IEEE Day-2017.**
- ✓ **Mrs.R.Jeena , Assistant Professor has received “Paper Presenter Award at International Conference” under CSI Academic Award on 21st January 2018.**
- ✓ **Mrs.S.Irin Sherly , Assistant Professor has received “Paper Presenter Award at International Conference” under CSI Academic Award on 21st January 2018.**

✓ **Dr.R.Josphineleela, Professor** has received **“Paper Presenter Award at International Conference”** under **CSI Academic Award** on **21st January 2018.**

✓ **Dr.R.JOSPHINELEELA, Professor, Dept. of IT** Received **Best Faculty of the year Award** from **CSI Mumbai, TechNext India 2018.**



Students Counseling

- **Students Counseling System”** has been conducted for the **II Year ,III year & IV Year ,Counseling System** effectively address the problems of the students such as stress, fear of change, academic related issues and challenges faced by students.

II Year -28-07-2017

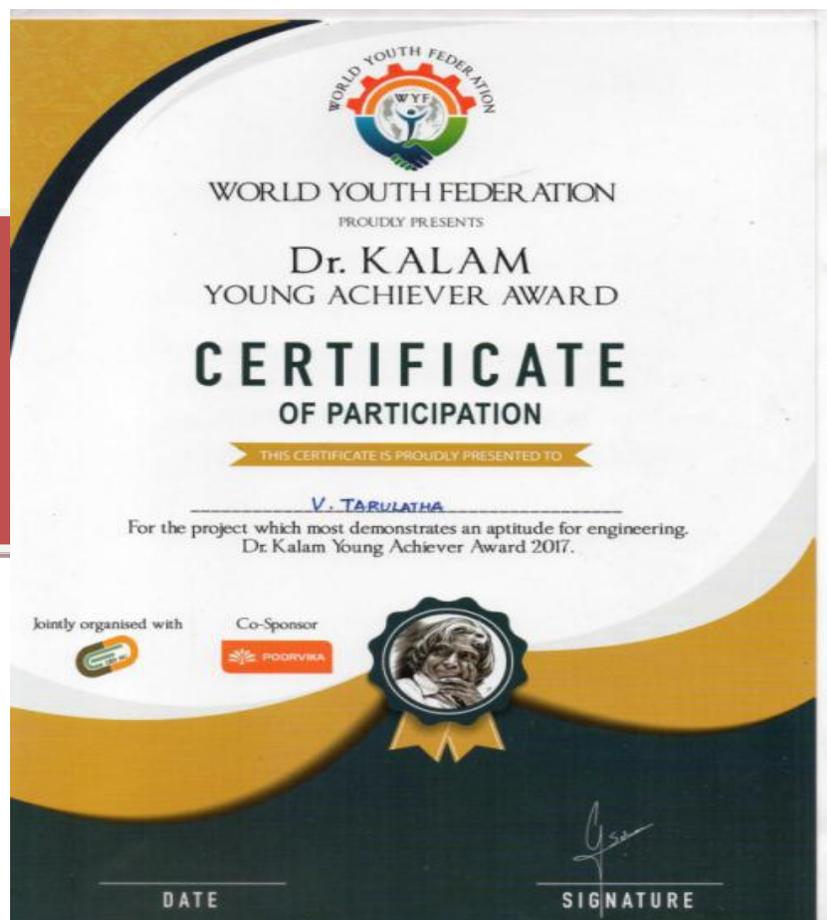
III Year – 27.07.2017

IV Year -31-07-2017



Young Achiever Award:

Final year students Ms.V.Tarulatha and Ms P.Harini of our department presented their project in the world youth Federation competition, she has received Dr.Kalam Young Achiever award of 2017" for the best project demonstrates an aptitude for engineering conducted by Anna University on 6th Oct 2017



Students Activity:

Third year student of our department Ms.Maheetha k. Rajan and Ms. Swetha kumar has been qualified in the IdeaCamp conducted

between Oct 12-14, 2017 by FORGE Technology and they are eligible to compete for the next level "BootCamp" Tamil Nadu State Level Innovator Award Competition 2017 on Nov 30 - Dec 3, 2017.



TAMIL NADU STUDENT INNOVATORS 2017

IN SEARCH OF THE TOP 100 INNOVATIVE IDEAS OF STUDENTS IN HIGHER EDUCATION

In a quest to catalyse technology oriented innovation and innovation led entrepreneurship among the young minds of Tamil Nadu, the Entrepreneurship Development & Innovation Institute, Tamil Nadu (IEDII), in collaboration with Forge Innovation Accelerator, Coimbatore has launched the Tamil Nadu Student Innovators 2017 program. The main goal of this program is to discover, nurture, and fund innovative ideas from students and young graduates that have the potential to become innovative products and successful enterprises.



www.forgeforward.in/tnsi/

[facebook.com/FORGEAccelerator](https://www.facebook.com/FORGEAccelerator) www.forgeforward.in twitter.com/FORGE_FORCE

FOR APPLICATION QUERIES PLEASE CONTACT:

Arundhathi, Operations Associate [arundhathi@forgeforward.in] [ph: +91-96776 75333]

LAST DATE FOR APPLICATION: 30th SEPTEMBER 2017

*We already have the First 45 ideas &
We are now in the hunt for the Next 55!*



IN 3 months... DO YOU WANT?

*...students working on developing innovative ideas,
...having studied and validated real-world problems working with experts,
...ready to build, test and trial prototypes.*

DO YOU WANT to create a STUDENT TASK FORCE for INNOVATION, in your INSTITUTION?

HOW?

STEP #1

• Identify students who are tech-oriented and want to hack, make, & build solutions for real-world problems;

STEP #2

• Get them to apply for the TNSI Program with their Ideas @ www.forgeforward.in/tnsi

STEP #3

• Selected Ideas (Student Teams) attend the 3-day **IdeaCamp** organised by Forge;
• **IdeaCamp** is a 3 day residential program offering experiential learning of tools and techniques to shape, refine, validate, and pitch ideas;
• Training program at value of **Rs. 10,000** per student is sponsored by EDII;

• **IdeaCamp #1** on 21-23, September, 2017 @ FORGE.FACTORY, KCT Campus, Coimbatore

STEP #4

• Top 30 Student Teams (across the state) selected for the grand finale **BootCamp + DemoDay**;
• Top 10 Teams selected for PitchFest shall pitch to the Jury and shall each receive a cash prize of **Rs. 25,000** per team;

• Top 3 Teams get selected for **FORGE.FELLOWS**, a pre-incubation program offered by Forge with prototyping grant of **Rs. 5 Lakhs**;

WORKSHOP,FDP,SEMINAR ARRANGED IN THE DEPT FOR STAFF

IoT Workshop:

Department of IT conducted One Day Workshop on Embedded Systems With IoT On Raspberry Pi on 15.11.2017 (Wednesday) with the help of Signals & Systems (SANDS) India Pvt. Ltd. The resource persons are Mr.E.MURUGAN, Project Engineer & Ms.M.ABINAYA, Project Engineer from (SANDS) India Pvt. Ltd.



Seminar on “R Program” :

Department of Information Technology in association with IEEE-ITS and CSI organized the seminar on “R Program” for faculty members, presented by industry expert Dr.Dharani from “Vani Analytics private Limited” at Panimalar Institute of Technology on 22.11.2017



Department of Information Technology in association with IEEE-ITS and CSI organized One Day Hands on Training Workshop on IoT for the faculty members conducted by the industry expert Mr.Senthil ,Technical Lead from HP Enterprise at Panimalar Institute of Technology on 29.11.2017.

Workshop on Green Computing :

Department of Information Technology in association with IEEE-ITS and CSI organized One Workshop on Green Computing for the faculty members conducted by the industry expert Mr.Anand, from Pheonix System at Panimalar Institute of Technology on 30.11.2017.



FACULTY ATTENDED FDP & WORKSHOP IN OTHER COLLEGES

S. NO.	STAFF MEMBERS	TITLE	ORGANIZATION	DATE	DURATION
1.	Mrs.G.DHANALAKSHMI	Data science and big data analytics	Sri ram engineering college	11/09/2017 & 15/09/2017	5
2.	Ms. JAYASREE R.V Ms. SHEELA RANI .P	Digitalization and its transformation	Cognizant technology solutions india pvt. Ltd. Mepz	23/09/2017	1
3.	Mr. PALANI RAJ A Mr. WINSTON RAJA R	Deep learning in bigdata	Sri venkateswara college of engineering	09/11/2017 & 10/11/2017	2
4.	Mrs. M.RAJESWARI	R programming	Ictact	16/11/2017	2

	Mrs. S.IRIN SHERLY Mr.R. PRAVEEN KUMAR Mr. R. WINSTON RAJA		academy	& 17/11/2017	
5.	Mrs. JAYA SREE RV Mrs. M.RAJESWARI	AICTE sponsored national seminar on convergence of IoT, Big data and cloud Computing	SSN College of Engineering, chennai	23/11/2017 to 25/11/2017	3



Technical Articles

The Top 5 Lies Your Cloud Salesperson will tell you :

If you are thinking about migrating your data to the cloud, you'll want to watch out for some over generalizations, all-or-nothing statements, and even a few outright lies. Here are five statements that should raise a "red flag" if they come up in conversation.

Lie #1:

All cloud service level agreements (SLAs) are the same.

It's true: a lot of providers use the same four digits when it comes to availability – 99.95%.

But what do you have to do to ensure that you actually get that number? That's what makes the difference between cloud SLAs! Think of it this way... did you ever look into buying a car because of a great advertisement, only to discover that the little asterisk next to the interest rate nixed the deal for you because it required a huge down payment? The same thing happens with cloud SLAs. *For example,* Cloud Provider A might have an SLA of 99.95%, but when you look into it, that SLA is only valid if you take certain actions.

For instance, you may have to contract with them across multiple availability zones or buy in to certain aspects of their solution (both of which will increase your costs). That's fine if you want to do that, but not

fine if you don't. Cloud Provider B, on the other hand, might give you an SLA of 99.95% with no strings attached: you simply have an SLA of 99.95% per virtual machine per month. Period, end of statement. The SLA is entirely their responsibility, and you don't have to worry about modifying your system and application architecture to be covered by the SLA. So if someone tells you that all cloud SLAs are the same, take out your magnifying glass. There may be an asterisk hiding in there somewhere.

Lie #2:

Virtual machines (VMs) are much easier to use than physical servers. Like any good lie, this has a kernel of truth in it. Virtual machines are easy to set up because you don't have to go through the typical procurement cycle and racking and stacking of a physical server. And yes, you can set up the operating system in a flash. However, a virtual machine is just a container. Once you have the container set up, what you put inside that container takes the same amount of effort as it would with a physical server. You still have to deploy applications, set up your IT processes, etc.

Lie #3:

Most companies are moving their entire datacenter to the cloud. Small companies? Maybe. Medium and large companies? No. They might be moving part of their data center footprint to the cloud to make certain IT operations more agile or responsive, but there are very rarely wholesale migrations. The reason is simple: the larger the company, the more moving parts they have. Those moving parts include numerous business units, legacy systems, mainframes, existing data centers, and third-party integrations, to name a few. Some applications might not function properly

in the cloud. Some data might be too sensitive to ever reside in a cloud environment. The result: hybrid environments are a fact of life.

Lie #4:

You'll save a ton of money in the long run with the cloud. Can companies save money by migrating to the cloud? Sure. But cost savings aren't the be-all and end-all of why companies migrate. Companies might migrate because the cloud affords them more agility, increased responsiveness, greater flexibility, quicker time to market, or the ability shift from a capex to an opex model, to name just a few factors. Sometimes (I know this sounds heretical!) the company's costs will actually go up in the process. In those instances, it is the company's responsibility to weigh costs against benefits to see where the greatest value lies.

Lie #5:

We take care of everything! Really? In that case, will you be delivering coffee to me in the morning? If you hear this line, ask immediately, "What do you mean by 'everything'?" Once you have a clear explanation provided to you in a documented format, compare it with what you think "everything" should be. If the two match up, you can keep going. If they don't match up, determine what would have to happen to get your version of "everything" to be delivered by the provider. If you blindly accept the statement "We take care of everything," I can pretty much assure you that you have false expectations and will have a bad experience somewhere down the line.



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

Energy-efficient encryption for the Internet of Things

Special-purpose chip reduces power consumption of public-key encryption by 99.75 percent, increases speed 500-fold. Most sensitive web transactions are protected by public-key cryptography, a type of encryption that lets computers share information securely without first agreeing on a secret encryption key. Public-key encryption protocols are complicated, and in computer networks, they're executed by software. But that won't work in the internet of things, an envisioned network that would connect many different sensors -- embedded in vehicles, appliances, civil structures, manufacturing equipment, and even livestock tags -- to online servers. Embedded sensors that need to maximize battery life can't afford the energy and memory space that software execution of encryption protocols would require.

MIT researchers have built a new chip, hardwired to perform public-key encryption, that consumes only 1/400 as much power as software execution of the same protocols would. It also uses about 1/10 as much memory and executes 500 times faster. The researchers describe the chip in a paper they're presenting this week at the International Solid-State Circuits Conference.

Like most modern public-key encryption systems, the researchers' chip uses a technique called elliptic-curve encryption. As its name suggests, elliptic-curve encryption relies on a type of mathematical function called an elliptic curve. In the past, researchers -- including the same MIT group that developed the new chip -- have built chips hardwired to handle specific elliptic curves or families of curves. What sets the new chip apart is that it is designed to handle any elliptic curve.

"Cryptographers are coming up with curves with different properties, and they use different primes," says Utsav Banerjee, an MIT graduate student in electrical engineering and computer science and first author on the paper. "There is a lot of debate regarding which curve is secure and which curve to use, and there are multiple governments with different standards coming up that talk about different curves. With this chip, we can support all of them, and hopefully, when new curves come along in the future, we can support them as well."

Joining Banerjee on the paper are his thesis advisor, Anantha Chandrakasan, dean of MIT's School of Engineering and the Vannevar Bush Professor of Electrical Engineering and Computer Science; Arvind, the Johnson Professor in Computer Science Engineering; and Andrew Wright and Chiraag Juvekar, both graduate students in electrical engineering and computer science.

Modular reasoning

To create their general-purpose elliptic-curve chip, the researchers decomposed the cryptographic computation into its constituent parts. Elliptic-curve cryptography relies on modular arithmetic, meaning that the values of the numbers that figure into the computation are assigned a limit. If the result of some calculation exceeds that limit, it's divided by the limit, and only the remainder is preserved. The secrecy of the limit helps ensure cryptographic security. One of the computations to which the MIT chip devotes a special-purpose circuit is thus modular multiplication. But because elliptic-curve cryptography deals with large numbers, the chip's modular multiplier is massive. Typically, a modular multiplier might be able to handle numbers with 16 or maybe 32 binary digits, or bits. For larger computations, the results of discrete 16- or 32-bit multiplications would be integrated by additional logic circuits. The MIT chip's modular multiplier can

handle 256-bit numbers, however. Eliminating the extra circuitry for integrating smaller computations both reduces the chip's energy consumption and increases its speed.

Another key operation in elliptic-curve cryptography is called inversion. Inversion is the calculation of a number that, when multiplied by a given number, will yield a modular product of 1. In previous chips dedicated to elliptic-curve cryptography, inversions were performed by the same circuits that did the modular multiplications, saving chip space. But the MIT researchers instead equipped their chip with a special-purpose inverter circuit. This increases the chip's surface area by 10 percent, but it cuts the power consumption in half. The most common encryption protocol to use elliptic-curve cryptography is called the datagram transport layer security protocol, which governs not only the elliptic-curve computations themselves but also the formatting, transmission, and handling of the encrypted data. In fact, the entire protocol is hardwired into the MIT researchers' chip, which dramatically reduces the amount of memory required for its execution.

The chip also features a general-purpose processor that can be used in conjunction with the dedicated circuitry to execute other elliptic-curve-based security protocols. But it can be powered down when not in use, so it doesn't compromise the chip's energy efficiency.

-V G Nanda Kumar
II nd year "IT-A"

Crowd workers, AI make conversational agents smarter

Conversational agents such as Siri, Alexa and Cortana are great at giving you the weather, but are flummoxed when asked for unusual information, or follow-up questions. By adding humans to the loop, Carnegie Mellon University researchers have created a conversational agent that is tough to stump.

The chatbot system, called Evorus, is not the first to use human brainpower to answer a broad range of questions. What sets it apart, says Jeff Bigham, associate professor in the Human-Computer Interaction Institute, is that humans are simultaneously training the system's artificial intelligence, making it gradually less dependent on people.

Like an earlier CMU agent called Chorus, Evorus recruits crowd workers on demand from Amazon Mechanical Turk to answer questions from users, with the crowd workers voting on the best answer. Evorus also keeps track of questions asked and answered and, over time, begins to suggest these answers for subsequent questions. The researchers also have developed a process by which the AI can help to approve a message with less crowd worker involvement.

"Companies have put a lot of effort into teaching people how to talk to conversational agents, given the devices' limited command of speech and topics," Bigham said. "Now, we're letting people speak more freely and it's the agent that must learn to accommodate them."

A research paper on Evorus, already available online, will be presented by Bigham's research team later this year at CHI 2018, the Conference on Human Factors in Computing Systems in Montreal.

Totally automated conversational agents can do well answering simple, common questions and commands and can converse in depth when the subject is relatively narrow, such as advising on bus schedules. Systems with people in the loop can answer a wide variety of questions, Bigham said, but with the exception of concierge or travel services for which users are willing to pay -- agents that depend on humans are too expensive to be scaled up for wide use. A session on Chorus costs an average of \$2.48.

"With Evorus, we've hit a sweet spot in the collaboration between the machine and the crowd," Bigham said. The hope is that as the system grows, the AI is able to handle an increasing percentage of questions, while the number of crowd workers necessary to respond to "LONG TAIL" questions will remain relatively constant.

Keeping humans in the loop also reduces the risk that malicious users will manipulate the conversational agent inappropriately, as occurred when Microsoft briefly deployed its Tay chatbot in 2016, said Ting-Hao Huang, a Ph.D. student in the Language Technologies Institute (LTI). Huang developed Evorus with Bigham and Joseph Chee Chang, also a Ph.D. student in LTI.

During Evorus' five-month deployment with 80 users and 181 conversations, automated responses to questions were chosen 12 percent of the time, crowd voting was reduced by almost 14 percent and the cost of crowd work for each reply to a user's message dropped by 33 percent.

Evorus is a text chatbot, but is deployed via Google Hangouts, which can accommodate voice input, as well as access from computers, phones and smartwatches. To enhance its scalability, Evorus uses a software architecture that can accept automated question-answering components

developed by third parties. This research is supported by Project InMind, a Carnegie Mellon effort sponsored by **Yahoo!**/Oath to develop advanced technologies for personalized digital assistants.

-V G Pranav Kumar

II nd year "IT-A"



SMARTLY CONTAINING THE CLOUD INCREASES COMPUTING EFFICIENCY, SAYS FIRST-OF-ITS-KIND STUDY

Ultimately advances in container technology have the potential for widespread improvement of cloud computing performance. Not too long ago booting up a computer meant there was time for a lengthy coffee break even before the workday started. For a decade now though, thanks to the cloud, computers have accessed information from virtual machines that exist in the ether, allowing software to launch quickly on demand.

Now, in a first-of-its kind study funded by IBM and the National Science Foundation, Virginia Tech researchers have discovered ways to further improve computing efficiency using management tools for cloud-based light-weight virtual machine replacements called containers -- frameworks that allow the micro services that power data retrieval from the ether -- to deploy in a more agile manner.

The research team will present their findings in Oakland, California, at FAST'18, the 16th USENIX Conference on File and Storage Technologies in February. Unlike the software-heavy virtual machines, containers share the core of the underlying operating system, which enables faster deployment of software programs without diminishing performance.

Containers are just now being studied as part of the cloud infrastructure, but our research indicates that how they function in the cloud is critical to developing and distributing future computer systems that maximize efficiency," said Ali Anwar, lead author on the paper that details the research and a Ph.D. candidate in Virginia Tech's Department of Computer Science in the College of Engineering.

the study was a collaboration with IBM and offers a large-scale survey of the commonly used container management framework known as Docker, a platform that facilitates the deployment of micro services by

providing a registry service that acts as a central repository for software components focusing on specific functionalities called images. When users want to publish their images, the registry makes them accessible to others.

The team analyzed an unprecedented amount of data from five geographically distributed data centers over 75 days spanning 38 million requests and 181.3 TB of traces, or time stamped logs that document a program's execution. The customer set of the study ran the gamut from individuals to small- and medium-sized businesses to large government institutions.

The research uncovered an important aspect of container technology that utilized caching and prefetching of information. The team found that these were important in reducing latency. "This study is crucial to understanding whether containers are amenable to prefetching and how such techniques can improve cloud efficiency," said Ali Butt, co-author and a professor of computer science. "Prefetching data to setup containers even before they are requested by the users allows applications to run far more quickly." But explains the advantage of prefetching in a modern-day metaphor as the difference between setting up a meeting time at 10 a.m. and being ready :30 seconds before with coffee in hand, as opposed to showing up at the designated time.

Existing research of containers indicated that performance issues became apparent in the lifecycle of a container when the number of stored images and concurrent user requests for data increased. The container registry Docker grows by about 1,500 new daily public repositories, and retrieving images from such a growing repository can account for 76 percent of the container start time. This means that using the cloud for the email you're trying to send or the purchase you are trying to make online takes that much longer to process.

Another key finding includes that younger nonproduction registries experience lower loads compared to longer-running production systems, which can inform how the registry load is affected.

Our collaboration with Virginia Tech really allowed us to see how data in the wild was performing and how the current micro services were working to achieve tasks of retrieving and posting data," said Mohamed, collaborator on the study and member of IBM's container storage research group, Ubiquity. "Without the ability to use such a large and varied data set from IBM, we couldn't have come to the conclusions we did."

In performing this large-scale analysis, the team developed a valuable tool to analyze registry data for further research, and also open source the data and tool for the benefit of the broader cloud computing community.

Ultimately advances in container technology have the potential for widespread improvement of cloud computing performance. "Container transparency allows a cloud provider to gain insight into applications security, compliance, and performance, enabling new kinds of user-facing application-centric services," said Mohamed.

Fetching your coffee won't be one of them, however.

-P Prem Sai Reddy

IInd year "IT-A"

AI in India

AI initiatives underway in India

Advances in AI have garnered extensive interest from the private and public sectors, with the field now being seen as a potential disruptor in the mass production of consumer goods and other labour-intensive activities from which human potential can be freed for higher endeavours.

Private sector

AI has subtly made inroads into the daily lives of Indian citizens in the form of app-based cab aggregators and digital assistants on smartphones. The interest can be gauged from the fact that leading IT service outsourcing companies have begun thinking, talking and (a few) launching AI platforms. But these are just small steps towards achieving the ultimate goal of AI—namely replacing human intelligence. The systems being developed, as of now, are perfecting the process of increasing the efficiency of solving a repetitive problem. This will eventually lead to solutions to ever-changing problems.

In contrast, the start-up sector is able to directly attack these problems as it does not carry the baggage of IT outsourcing firms. Indian start-ups are working across a plethora of

AI problems— identifying patterns in objects, people, style and preferences to advice on retail shopping; building conversational services and using them over social media apps and for online shopping; developing better diagnostic services; bringing in cognition in robotic process automation; helping in cross-channel discovery of preferences and working in multiple languages. These are just a few of the areas that Indian start-ups are

working on. Commercial applications of AI are huge and Indian start-ups are beginning to identify them and tap into the market, which is still nascent.

Government and public sector

Public policy in India on the application of AI has thus far lagged when compared to AI's subtle usage by start-ups who have so seamlessly blended AI into the services provided to customers. If we look at the applications that we use/have used at some point of time (e-commerce platforms, chat services, social media services and so on), they have all been employing AI in some form and at some level of maturity or the other. Though India is making rapid progress in terms of technology, companies and researchers are yet to utilize the full potential of AI. While the USA is currently in the process of implementing laws concerning driverless vehicles, India still lags behind. Instead of waiting for technology to reach a level where regulatory intervention becomes necessary, India could be a frontrunner by establishing a legal infrastructure in advance. Alternatively, early public sector interest in AI could trigger a spurt of activity in the AI field in India. The main dichotomy that the regulations will have to deal with relates to who will be liable for the activities of AI systems. These systems are designed to be creative and to continue learning from the data analyzed. Hence, designers may not be able to understand how the system will work in the future.

Also, the role of an AI system, as in the case of a driverless car, could be to assist the user. In such a situation, deciding liability for what the AI system has done will be difficult. Therefore, this issue needs to be discussed and delved into deeply before arriving at any conclusion.

The digital movement in India has created data which is readable by machines. At the same time, technologies have also reached a level of

maturity where they can think like humans in real time and, at times, in a cost-effective way. Thus, they are suitable for use in governance.

-Vamsikrishna M

IIIrd year "IT-C"



**99 little bugs in the code.
99 little bugs in the code.
Take one down, patch it around.**

127 little bugs in the code...



Cosmos welcome technocrats,
Wondrously lead by
technominds,
Bid adieu to technophobes,
It is the era of technophiles.

ROHINI.V
III YR ITA