Today’s liberalized economic world order is witnessing a silent competition for sustenance and excellence in almost every sector of the economy. Focusing on such competition – both national and global levels, the Technology, Information, Forecasting and Assessment Council (TIFAC) - an autonomous body under the Department of Science and Technology (DST) launched MISSION REACH in the year 2000. Amalgamating the three key pillars of economic growth – Industry, the Government and the Educational Institutions, Mission REACH aims to tap India’s vast man-power resources and higher educational institutions, to turn them into a force to reckon with.

Under this scheme of Mission Reach, as a mandate, TIFAC-CORE in Pervasive Computing Technology is a Research and Development Department of Velammal Engineering College, that offers two P.G., Programs in Engineering namely M.E., Mobile and Pervasive Computing and M.E., Embedded System Technologies. Besides this, the CORE has a memorandum of understanding (MoU) with novel organizations like TCS, TVS Logistics, Auroville Healthcare Ltd., etc., Also the CORE develops real time industry solutions for organizations like Tamil Virtual University and TVS. The CORE has been funded by Department of Science and Technology to enrich research resources in various domains like RFID, Sensor Networks, Mobile Computing and Embedded Systems.

Inculcating the idea of research for economic growth in the up coming generation as the main motive, the Department of TIFAC-CORE in Pervasive Computing Technology, has been organizing various programs such as workshops and hand on training on various software and hardware tools and faculty development programs. Research oriented student project work was initiated by the faculty in the last four months. We’ve got something really big coming soon, something that will inspire the young minds of engineers and provide a great platform to establish their skills. We’ll share more details about the future happenings with you in our next newsletter.

**Vision of TIFAC-CORE**

To establish a centre of relevance and excellence in pervasive computing technology, impart quality education, foster research to help industries to adopt the pervasive computing technology, thereby focus on applications of social relevance for the uplift of the nation and thus bridge the digital divide.
CSI INAUGURATION & GUEST LECTURE

Computer Society of India formed in 1965, the CSI has been instrumental in guiding the Indian IT industry down the right path since its formative years. Today, the CSI has 73 chapters all over India, over 500 student branches, and more than 100000 members including India’s most famous IT industry leaders, brilliant scientists and dedicated academicians. CSI Student chapter was established in Velammal Engineering College in the year 2005 and it was inaugurated for the academic year 2014-15 by our department on July 17th, 2014. Since then various mind powering activities were conducted and one among them was a guest lecture on “Recent Trends in Mobile Communication - Future Smart Phones” which was presented by Vanlin Sathya Research Scholar, IIT Hyderabad on 23rd December 2014. He gave an overview of recent research topics in 4G and 5G mobile communication technologies. The workshop also addressed the concepts of cellular structures like femto, phantom cells in mobile networks. Recent issues like Device to device (D2D) communication and their probable solutions were discussed.

Workshop on “ARM Cortex M4 Series Microcontroller”

A Two day Workshop on “ARM Cortex M4 Series Microcontroller”, in collaboration with TI India University Program & Starcom Information Technology Limited was organized by our department on 05/02/2015 and 06/02/2015 at VEC, BillGates Block hosted by Organizing Secretary Dr. B. Venkatelakshmi, Chief Coordinator, and the Conveners, Ms. Anitha Julian, & Mr. S. Vijayakumar, Assistant Professor(s), TIFAC-CORE, VEC, with a total of 45 student and faculty beneficiaries. Mr. Narendra Babu M.E – Sr. Application Engineer, Starcom information Technology was invited as the chief guest. The workshop also included lectures, demonstrations, and hands-on experiments.

The Tiva C Series TM4C123G LaunchPad Evaluation Kit is a low-cost evaluation platform for ARM® Cortex™-M4F-based microcontrollers from Texas Instruments. The design of the TM4C123G LaunchPad highlights the TM4C123GH6PM microcontroller with a USB 2.0 device interface and analog modules. The workshop is based on the low cost, expandable Tiva TM4C123G LaunchPad Evaluation Kit.
TEXAS INSTRUMENTS INDIA ANALOG MAKER CONTEST 2015

In order to the creative engineering skills, TEXAS INSTRUMENTS INDIA ANALOG & STARCOM conducts mind-boggling and challenging contest periodically. This year we had the privilege on hosting the project competition “TEXAS INSTRUMENTS INDIA ANALOG MAKER CONTEST 2015” on 16,17,18 Feb 2015, coordinated by Mr. Vijayakumar, Assistant Professor, VEC. 300 students from the department of E&I, EEE, TIFAC participated and 3 teams were shortlisted to be evaluated by TI to declare the winners. Texas Instruments, widely known as TI, is a multinational semiconductor company headquartered in Dallas, Texas United States. TI is a leading manufacturer of semiconductor products such as embedded processors (microprocessors, DSP, microcontrollers), analog circuits, wireless chip sets, and digital light processing chips. TI established its Indian operations in Bangalore in 1985. TI has a University Program which aims to bring the most advanced technology of the engineering industry to universities worldwide. TI India university program supports Indian universities for lab set-ups, IC samples, teaching materials, events, train-the-trainer programs, etc. Starcom Information Technology Limited provides Enterprise statistical analytics and Engineering Simulation software, software products and solutions for clients across the globe. The company’s business interests includes Products, Productized Solutions, Services and R&D in future technologies. Also Starcom Information Technology Limited is the Authorized Partner for Texas Instruments India University Program to set up Laboratories with MSP430, DSP (Digital Signal Processing) and Analog Development Tools.

10th CONVOCATION OF JAMSETJI TATA NATIONAL VIRTUAL ACADEMY

The 10th CONVOCATION OF JAMSETJI TATA NATIONAL VIRTUAL ACADEMY AND 9TH CONVENTION OF GRAMEEN GYAN ABHIYAN was held at MS Swami Nathan Research Foundation, Tharamani on 2nd Feb, 2015 and 3rd Feb, 2015. The main agenda of the program included, launch of Mobile Application for fisher men using CDMA mobile devices. Our students Mr. L. Balasubramanian and Ms. V. Aiswarya had the privilege to attend the conference along with the most important VIP’s and Research scholars. In the convocation 273 farmers were awarded for their research in the field of agriculture from various states. Also discussions on Interaction Information Dissemination System, Innovative ICT Tools, Hunger Map 2014, Mobile based Agro Advisories for Cotton & Oil seed and Role of ICT in Agrometricological Service.
Faculty Development Programme

RTOS OSEK

OSEK (Offene Systeme und deren Schnittstellen für die Elektronik in Kraftfahrzeugen) is a standards body that has produced specifications for an embedded operating system, a communication stack, and a network management protocol for automotive embedded systems. OSEK was designed to provide standard software architecture for the various electronic (ECUs) throughout a car. FDP on RTOS OSEK was conducted by Mr. S. Vijayakumar (Asst. Professors) on 25-11-2014 from 9.00AM to 12.10PM at Embedded Lab.

ANDROID

Android is a mobile operating system (OS) based on the kernel and currently developed by Google. Android is designed primarily for touch screen mobile devices such as smart phones and tablets, with specialized user interfaces for televisions (Android TV), cars (Android Auto), and wrist watches (Android Wear). J2ME allows developers to use Java and the J2ME wireless toolkit to create applications and programs for wireless and mobile devices. FDP on Applications on mobile computing (Android and J2ME) was conducted by Mrs. Anitha Julian, and Mr. R. Ganesan (Asst. Professors) on 24-11-2014 from 9.00AM to 12.00PM at Mobile Computing Lab.

ADVANCED DESIGN SYSTEM (ADS)

Advanced Design System (ADS) is an electronic design automation software system. It provides an integrated design environment to designers of RF/electronic products such as mobile phones, pagers, networks, satellite communications, radar systems, and high-speed data links. FDP on ADS was conducted by Mr. V. Saravanan (Asst. Professor) on 19-11-2014 from 9.00AM to 12.00PM at RFID Lab.

QualNet

QualNet is a state-of-the-art simulator for large, heterogeneous networks and the distributed applications that execute on those ad-hoc networks. Faculty development programme on Ad-hoc networks using qualnet simulator was conducted by Mr. A. Pravin Renold (Asst Professors) on 25-11-2014 at QUALNET Lab from 9.00AM to 12.10PM.
Dr. A. Balaji Ganesh was invited as Chief Guest and delivered the presidential address during Innovate(ice)’2015 – A National level technical symposium, held at SMK Fomra Institute of Technology, Chennai.

Mr. A. Pravin Renold, TIFAC-CORE in PCT was invited as the Chief Guest for the workshop entitled “Hands on training on WSN using Cooja Simulator”, by the Department of Computer Science and Engineering of Karpagam College of Engineering at Coimbatore on February 6th 2015. The keynote speech was delivered by Mr. Renold on the role of wireless sensor networks in the changing trend towards smart city and the need for interdisciplinary research in sensor networks.

University Rank Holders

Our students have shown their academic caliber time and again. Here are our academic high performers who have inspired others to ……

Toppers

ME - Mobile & Pervasive Computing
1. Merrin A.P (1st year)
2. Dharini N. (2nd year)

ME - Embedded System Technologies
1. Ephi G. (1st year)
2. Reeni J (2nd year)

Placement Activities

Our students were placed in top IT companies in the placement drive conducted by our college during this academic year. There were 24 offers, among them, 6 had dual offers. 5 students from MPC and 14 from EST were placed in CTS, INFOSYS and CAPEGEMINI.

One week training was conducted by the Training and Placement cell for our first year students from 09.02.2015 to 13.02.2015 in order to equip them with the required skills to confront the forthcoming placement drives.

Papers Published


N. Deepa, A. Balaji Ganesh, published a paper on Sol-gel based portable optical sensor for simultaneous and minimal invasive measurement of pH and dissolved oxygen measurement, in the journal, Elsevier, January 2015.

Faculty Accomplishments

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STUDENT PROJECTS AREAS

EMBEDDED SYSTEMS

Now-a-days the magical word Embedded system has been echoing through all the corners of the world and without it the advancement in every field would be a question mark. What is Embedded systems? An embedded system is a system that has software embedded into computer-hardware, which makes a system dedicated for an application(s) or specific part of an application or product or part of a larger system. Such system have a strong influence in our lifestyles, from a simple toy to a complex rocket, embedded system plays a vital role.

INTERNET OF THINGS (IOT)

The IoT is a radical evolution of the current Internet, which has been transformed from providing human interconnection into a network of interconnected devices. These devices interact with the physical world using Internet protocols and standards in order to collect data from the environment. The IoT will enable the transformation of sensed or gathered data into intelligent information, thus embedding intelligence into our environment.

WIRELESS SENSOR NETWORKS

A Wireless sensor Network (WSN) is a distributed, self-organized network of little, energy-strained wireless nodes that move to hold out complicated tasks. Wireless sensor networks is an emerging technology used in atmosphere and habitat observation, structural observation aid and disaster management, surveillance. A WSN monitors the environment, by sensing its physical properties. It is a network of autonomous nodes which will acquire, process and transmit sensory information over wireless medium to the user terminals via the sink.

DIGITAL IMAGE PROCESSING

Medical image processing has experienced dramatic expansion, and has been an interdisciplinary research field attracting expertise from engineering, biology, medicine, applied mathematics, Computer-aided diagnostic (CAD) processing has already become an important part of clinical routine. There has been several challenges such as the process and analyse a significant volume of images so that high quality information can be produced for disease diagnoses and treatment. Medical image processing has always been a pioneer’s area of interest.
Do the difficult things while they are easy and do the great things while they are small. A journey of a thousand miles must begin with a single step.

G-CLOUD

G-Clouds or Government Clouds are bringing in efficiency and effectiveness in Digital delivery of e-governance to citizens in various countries. Thailand is a country which is transforming its Government services by providing a G-Cloud which provides SAAS services for its various Central and Provisional Departments and also provides a digital interface for its citizens. The UK Government has built a G-Cloud whose adoption has been fairly successful and provides digital services by qualified vendors and service providers and allow many older digital applications to go online and improve Governmental ICT usage and delivery. Estonia stands out as an outstanding digital nation that is not only an ICT superpower but has also successfully deployed it for its citizens. Consider this, now the Citizens' personal income tax in the country is done in less than 5 minutes and a new company can be setup in 20 minutes. Digital health records and e-prescriptions is a way of life for effective health care delivery to its citizens. Children’s progress in schools is tracked on the e-school solution and citizens have mobile connectivity for finding parking slots to ease parking woes. Estonia has also implemented online voting for the parliament and has provided its citizens with a national e-ID for Digital identification, a Mobile ID card and a physical digital ID card. It is also a pioneer in the deployment of digital signatures which are valid for almost all transactions. The country has an e-cabinet which uses paperless solutions for decision making in the Government. In addition, it has e-police and e-border solutions to ensure the country’s protection. Estonia has strong cyber security solutions build into all its digital solutions. Post successful implementation in the country, Estonia is now exporting its government solutions to other countries. Further, the company plans to migrate its existing Digital ecosystem to the cloud. The US Government has been the largest investor in Cloud computing and the foundation was laid by its first CIO Vivek Kundra in 2011. The adoption of cloud by the Government of USA continues unabated and has made significant contribution to reliable and secure cloud computing. Other countries that are using or working on deploying G-Clouds are Hong Kong, Finland, Japan, Spain, Slovenia and the European Union. The G-Cloud will allow countries to digitally secure themselves and their citizens while benefitting from the digital delivery of government services. G-Cloud can play a significant role in agriculture, municipalities, environmental monitoring, land records, citizen ID services, health care, education, business, law enforcement, utilities and other government services. India is working on its own G-Cloud named as Meghraj, though it is still early days, but we should see the launch of the India G-cloud serving Central and State Government, and local bodies in providing better services and information delivery to Indian citizens. Other G-Clouds worth mentioning in India is the cloud for Indian Banking named as Meghdoot being built by RBI’s subsidiary IDBR in Hyderabad, this cloud will bring about a sea change in digital delivery of banking services to Indian citizens. Aadhar the Citizen ID Project is another government agency which has build a G-Cloud for its deployment.

A.P. MERRIN and M.HEMALATHA

Contact Lens Computer

A computer embedded into a contact lens could make for the ultimate heads-up display. For those who find Google Glass indiscreet, electronic contact lenses that outfit the user’s cornea with a display may one day provide an alternative. A group led by Jang-Ung Park, a chemical engineer at the Ulsan National Institute of Science and Technology, mounted a light-emitting diode on an off-the-shelf soft contact lens, using a material the researchers developed: a transparent, highly conductive, and stretchy mix of graphene and silver nanowires. The researchers tested these lenses in rabbits—whose eyes are similar in size to humans’—and found no ill effects after five hours.

MYTHREEHEE H
1. Low-___ diet
5. Relaxed
10. Ancient European
14. Untruthful economist
15. Mother-of-pearl
17. AEA President associated with a triangle (full name)
20. TV, radio, etc.
21. Development economist Maximo and family
22. Leslie Caron musical
25. Depend (on)
26. Time difference specification
29. It does not imply causality: abbr.
31. Functional
35. http://www.freakonomics.com, for example
36. “See ya!”
38. USC Center to study entertainment/commerce
39. Brookings AEA President (full name)
43. Swiss river
44. Economist Randall at Indiana Business School
45. Common Market letters
46. Navigates
49. Source of macro data: abbr.
51. Active one
53. Surrealist Joan
55. Washington mountain
58. Tropical fruit
62. AEA President and CEA Chair (full name)
65. “A Death in the Family” author
66. Kind of down
67. Business cycle dating AEA President
68. Keynes’ long-run equilibrium
69. Smelly cigar
70. Neuter

DOWN
1. Slang for U.S. dollar
2. Yorkshire river
3. Originally Bell
4. Barbecue
5. QED
6. Researcher’s response to an epiphany
7. Ella Fitzgerald specialty
8. Mu or epsilon
9. General Equilibrium AEA President
10. Bag distributed at ASSA meetings
11. Therefore
12. Source of perjury by an expert witness
13. Road crew’s supply
14. Related to the congregation
15. Morays
16. Prospector’s find
17. Finegan, Kennedy, McKinnon, Murphy, etc.
18. AEA President famous for critique
19. Nirvana attainer
20. Sale
21. Cold War game theory model
22. Smelly cigar
23. Create barriers to entry
24. Curtain fabric
25. Made a new edition of collected essays
26. Arizona Indian
27. Takes away weapons
28. Rice-a-____

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