

Darpan

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING//NEWSLETTER

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VOL. 9



MAKING A BETTER TOMORROW

DEPARTMENT VISION

To acquire global excellence in the field of Computer Science and Engineering, nurturing in professionals, technical competence, innovative skills, professional ethics and social commitment.



Toc H INSTITUTE OF SCIENCE AND TECHNOLOGY

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PROGRAM OUTCOMES (PO)

Engineering Graduates will be able to:

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

DEPARTMENT MISSION

- To equip students with a strong foundation in the area of Computer Science and Engineering using effective teaching -learning practices.
- To provide state-of-the-art infrastructure to suit academic, industry and research needs at the global level.
- To engage students and faculty in interdisciplinary research that promotes innovative ideas for sustainable development.
- To incorporate skill enhancement programmes for students and faculty to cope with the contemporary developments in technology.
- To inculcate effective communication skills, professional ethics and social commitment among professionals through value added programs.

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

Graduates of Computer Science & Engineering will:

1. Evolve as globally competent computer professionals, researchers and entrepreneurs possessing collaborative and leadership skills, for developing innovative solutions in multidisciplinary domains.
2. Excel as socially committed computer engineers having mutual respect, effective communication skills, high ethical values and empathy for the needs of society.
3. Involve in lifelong learning to foster the sustainable development in the emerging areas of technology.

PROGRAM SPECIFIC OUTCOMES (PSO)

Student of the Computer Science and Engineering program will:

PSO1: Professional Skills: Attain the ability to design and develop hardware and software based systems, evaluate and recognize potential risks and provide creative solutions.

PSO2: Successful Career and Entrepreneurship: Gain knowledge in diverse areas of Computer Science and experience an environment conducive in cultivating skills for successful career, entrepreneurship and higher studies.

GLORIOUS ACHIEVEMENTS

NBA ACCREDITATION

The Department of Computer Science and Engineering got accredited by NBA (National Board of Accreditation) for three years from 2017-'18 to 2019-'20. The academic efforts and other technical activities of the department was assessed and recognized through the NBA accreditation process and the students will now get international recognition and greater appreciation. Now, the students of CSE can avail B.Tech honors degree under the APJ Abdul Kalam Technological University (KTU).



'BEST STUDENT BRANCH AWARD' - FROM CSI FOR THE SIXTH TERM

Toc H CSI Student Branch has been honoured with the prestigious National level 'Best Accredited Student Branch Award' from Computer Society of India for the year 2016-'17, the sixth time in a row. With this, TIST has proven its continuing excellence in coordinating best in class professional society activities. TIST is the **only college in Kerala** which holds pride for this prestigious National level recognition continually since 2012. The institute has a very active student wing, which has distinguished itself by organizing international conferences, intercollegiate competitions, technical sessions and workshops, thus contributing towards the skill development of students.

Our student, **Mr. Siddharth Prajosh C** of 2014-'18 batch was conferred with the '**Highest Committed Student Branch Activist Award**', for being the active student member of the branch, the only student from Kerala who got selected for this recognition this year. **Asst. Prof. Elsaba Jacob**, of the CS Department, got the '**Longest Continuous SBC Award**', in recognition for the contributions to the CSI activities. **Asso. Prof. Sreela Sreedhar** (HOD, CSE) and Mr. Siddharth Prajosh C received the awards from Mr. Gautham Mahapatra, President, CSI, during the **52nd CSI Annual Convention** held at Science City, Kolkata on 21st January 2018. CSI Hon. Secretary, Prof. A K Nayak was also present during the cere-



FACULTY ACHIEVEMENTS

'OUTSTANDING WOMEN IN ENGINEERING AWARD'

Dr. Rasmi P S, Asso. Prof., CSE was honoured as the 'Outstanding Woman in Engineering', as part of Venus International Women Awards-VIWA 2018. This award is conferred for her initiatives and developments as a dedicated woman professional working in the field of science and technology and has exceptional record of significant contribution to the institute.



'CSI - LONGEST CONTINUOUS SBC AWARD'

Asst. Prof. Elsaba Jacob of CSE has been bestowed with the National level 'Longest Continuous Student

Branch Coordinator Award' from CSI, in recognition for the significant contributions to the CSI student chapter activities. This is the third time that she is chosen for this prestigious recognition as best coordinator. The award was presented during the 52nd CSI Annual Convention held at Science City, Kolkata on 21st January 2018.



REGISTERED FOR Ph.D

Ms. Mithu Mary George, Assistant Professor, Dept. of CSE registered for Ph. D in Kerala Technological University (KTU), in 2017-'18.



FIRST PRIZE IN PAPER PRESENTATION AT NATIONAL LEVEL TECHNICAL SYMPOSIUM

Ms. Mareena Ittan and Ms. Ayesha Zenab Kenza (2014-'18 batch) won first prize for paper presentation at Innovar 2k18, a National level Technical Symposium held at SVS College of Engineering, Coimbatore for their paper titled "EMG controlled Prosthetic Limb" on 9th March 2018.



TIST IEDC COORDINATORS

Siddharth Prajosh C, Sahana M Sherief, Manju Mohan (2014-'18 Batch), and **Raichel Suseel** (2015-'16) batch served as office bearers of the TIST Innovation and Entrepreneurship development Cell.

Student Projects

BEST SOCIALLY RELEVANT PROJECT – 'EMG CONTROLLED PROSTHETIC LIMB'

Team Members: Aysha Zenab Kenza, Lakshmi Mohan, Mereena Baby, Nikitha Sajan, Sharon Alex

Guide: Asst. Prof. Mithu Mary George

About Project:

In a world with steadily growing technologies, the less gifted still tend to struggle in managing their everyday activities. This project is designed to overcome the shortcomings of amputees. This is a simplified and low cost robotic hand, designed to mimic basic hand gestures. The working of the limb is based on the electric signals produced as a result of muscle movements. Those signals are interpreted by the Myo-armband, which converts it to accurate hand gestures. This is then read by a microcontroller, the Arduino through a Bluetooth dongle. Based on those signals, an appropriate number of server motors are rotated to move the limb. With advanced technologies like AI, the product can be made faster, easier and more efficient.



Recognitions Received:

- The project work is published in robotic blog page known as 'Microbot', who is also a business partner with IBM and Microsoft.
- First prize for paper presentation competition in the National Level Technical Symposium held at SVS College of Engineering, Coimbatore.
- 'Best Project Award' at the Computer Society of India All Kerala Summit event conducted at Toc H Institute

Public Featuring of the Project:

DD Malayalam Channel - 31.05.2018 (Visual Coverage). **Kairali People Channel** (Visual Coverage)

YouTube: The testing of the arm in an amputee can be viewed at https://youtu.be/j8_Rv5AEVDU

MIERobot: <https://www.mierobot.com/single-post/Prosthetic-Limb-An-amazing-project-Toc-H-Kerala>

The Hindu dated JUNE 03, 2018

<https://www.thehindu.com/news/cities/Kochi/engineering-students-develop-robotic-arm/article24070122.ece>

IEEE PROJECT: BLOCKCHAIN IN HEALTHCARE

Ms. Manju Mohan (2014-'18 Batch) (Team Lead for IEEE Technergize Initiative)

About Project:

Manju and her team of engineering students from multiple engineering colleges has put forward a project which maps blockchain with the healthcare industry. They were part of 7 months internship cum competition event called 'Technergize' which was a national level competition conducted by IEEE Computer Society, Kolkata Section and the final presentation was held at CSIS'18 held at Bodh Gaya, Bihar. They are one among the top 10 teams who got selected.

Featured Link: <https://www.mierobot.com/single-post>

SENTRUZER AR-VR PROBE

Team Members: Alen Joy, Antony Varghese, Joel John, Melvin Martin, Saurav Mohan V

Guide: Asst. Prof. Anuraj C K

About Project:

Sentruzer project is a probing robot moving at ground level with multiple cameras attached. The captured visuals can be send to a VR controlled display screen on a real time basis. The visuals can be from a preferred direction and angle of the user, controlled through the application and servo motors. It can be navigated towards places which are inhabitable and hostile to humans. A robot provides a human line of sight perspective than a drone and makes it more satisfactory to the user. A combination of real time video rendering and VR provisions give a good user experience along with precision and other desirable features.



VIDMAP (VIDEO ANNOTATION)

Team: Amrutha T G, Manju Mohan, Merin Peter, Nikita Pinheiro

Guide: Dr. N Vishwanath

About Project: Video Annotation, also widely known as video concept detection aims to automatically assign descriptive concepts to video content. VIDMAP is a video annotation tool that aims to give a description about an input video, i.e. annotating videos with sentences. Since video content includes objects, events and scenes, generating sentences for videos will help to better understand the underlying activities happening in the video and it is easier for users to search with flexible queries.

RESULTS & PLACEMENT

UNIVERSITY RESULTS

B.TECH RESULTS:

April 2018 (2014-'18 batch) – 72.13% pass with 15 distinctions and 27 first classes in the B. Tech Degree Examination, April 2018.

M.TECH RESULTS:

April 2018 (2016-'18 batch) - 100% pass with distinction in the M. Tech Degree Examination, April 2018.

B.Tech Result Analysis

Batch	Semester	Pass Percentage
KTU		
2015-'19 batch	S6	65%
	S5	60%
2016-'20 batch	S4	72%
	S3	61%
2017-'21 batch	S2	76%
	S1	56%
CUSAT		
2014-'18 batch	S8	77%
	S7	77%

PLACEMENTS

• 90% of the eligible students of B.Tech 2014-'18 batch got placed in various reputed companies like Infosys, UST Global, IBS Software etc.

B.TECH CSE - TOPPERS 2018



1st

Saina A S
CGPA – 8.9



2nd

Anciya T A
CGPA – 8.88



3rd

Aparna R
CGPA – 8.62

M.TECH CS (Data Security) TOPPER 2018



1st

Fariya Faizel
CGPA – 9.10

LAURELS – STUDENTS

TECHNICAL EVENTS

- » Thara Jose (2016-'20) won first position in the Campus Career Queen competition Disha 2018 organized by 'Prayana' in March 2018.
- » Raichel Suseel (2015-'19) was the first runner up in Campus Career Queen competition by Disha 2018 organised by 'Prayana' in March 2018.
- » Merin Anna Joy and Taniya Joseph (2016-'20) secured second position in Treasure Hunt at Tarangam '18 held at AISAT, Kalamassery during 2nd -3rd February 2018
- » Albin Xavier and Alvin Mohan (2016-'20) secured first position in Logoslayer held as a part of IEEE Day celebration at TIST on 4th October 2017
- » Merin Anna Joy (2016-'20) secured first prize in CodeFoss as a part of IEEE Day celebration at TIST on 4th October 2017
- » Yadev Jayachandran (2016-'20) secured second prize in Quiz competition conducted as part of National Technology Day at TIST on 12th May 2017.

ONLINE CERTIFICATIONS

- » Thomas Biju (2014-'18) secured online certification on 'Internet Connection: How to get Online?' from Coursera, in partnership with CISCO in December 2017.
- » Thomas Biju (2014-'18) secured NPTEL online certification on 'Cloud Computing' in August 2017.
- » Thomas Biju (2014-'18) secured NPTEL online certification on 'Introduction IOT' in August 2017.

SPORTS & ARTS:

- » Mereena Ittan (2014-'18) secured second place for Basketball in the CUSAT University Meet, January 2018
- » Mereena Ittan (2014-'18) secured second prize for high jump in the CUSAT University Meet, January 2018



The department of CSE secured **overall championship in 'MUDRA 2018'**, the arts fest conducted at TIST.



ANNUAL REPORT 2017-'18

CSAT & CSI STUDENT BRANCH ACTIVITIES

LAUNCH OF CSAT & CSI ACTIVITIES 2017-'18:

The launch of activities of CSAT – Computer Science and Engineering Student's Association and CSI Student Branch of Toc H Institute of Science & Technology for the academic year 2017-'18 was inaugurated on 18th August 2017, by Dr. M V Rajesh Maliyeckal, Head of Dept. of ECE, College of Engineering, Poonjar [Immediate Past Chairman, CSI Cochin Chapter]. The function was presided over by Prof. Dr. P J Joseph, President, Toc H Public School Society. Assoc. Prof. Sreela Sreedhar, HOD-CSE presented the annual report. Prof. Dr. Preethi Thekkath, Principal, and Dr. Ravindran Nair, Dean-Academics and Student Affairs, felicitated the gathering. HODs and faculty from different departments and students from CSE attended the event. The inaugural ceremony was followed with an expert session on 'Big Data and The Internet of Things: Two Sides of the Same Coin'.

DARPAN 2017, THE ANNUAL NEWSLETTER RELEASE:

The Annual newsletter of the department, 'DARPAN 2017' was released during the event by the chief guest. Awards were distributed for the toppers of B.Tech and M.Tech.



ALL KERALA CSI STUDENT SUMMIT 2018



At a glance...



The Department of Computer Science and Engineering of Toc H Institute of Science and Technology, Arakkunnam, in association with the Computer Society of India, organized a one day intercollegiate technical event 'ALL KERALA CSI STUDENT SUMMIT 2018' on 17th March 2018. The chief guest of the day was Dr. Ricky Jacob (CEO, PaySack, Bengaluru). Mr. Pramod C Menon (Service Delivery Manager, Wipro Technologies Ltd., Kochi), who is an Alumni of CSE, was the special invitee. Dr. Ricky officially declared the launch of the program and delivered the keynote address on 'Future in Engineering'. He shared his experiences with students and gave directions towards future careers. The talk proved to be very motivational for the students for taking up new initiatives. Mr. Pramod, who is also an alumnus of TIST, shared his experiences in different roles in his career and gave a message to students regarding their career path.

Technical Session

Dr. Ricky Jacob, CEO, Paysack, delivered a technical session on 'Cloud, Mobile and Information Security'.

Motivational Session

Mr. Pramod Chandran, Service Delivery Manager, Wipro, Kochi, delivered a motivational session on 'How to mould your Career?'.

MAJOR EVENTS

Events included **Quiz Competition, Coding Competition, Project Expo and A-Frame VR Demo (Mozilla)**.

12 teams from different Colleges participated in the quiz program. Rahul Murali and Arun Gandhi from Toc H Institute of Science and Technology secured the first prize.

16 teams participated in CodeHunt. Thomas Jose & Silesh Chandran (Rajagiri School of Engineering and Technology) secured first prize and Pranav P K & Binil Biju (MA College, Kothamangalam) secured the second prize.

Project expo had about 25 projects exhibited, including CNC Router, PSYBOT, Surveillance Drone, Disease Prediction through Gene Analysis, Spoof Detection on Smart Phone, Clustering based Collaborative Filtering, Sentruzer VR Probe, Home Automation, Multi Utility Desk, Multi-purpose Staptier, Smart Case, Economic Drone, VidMap (Video Annotation), Dr.Bot, Lip Movement Prediction, Autonomous Car, Automatic Student Attendance using Facial Recognition, Forensic Facebook using NLP, Online Payment system using Steganography and Visual Cryptography, EMC controlled Prosthetic Limb, Smart Mirror, Smart Backpack, Traveller's Pillow. EMG controlled Prosthetic Limb project by Aysha Kenza, Mareena Ittan, Sharon Alex, Nikitha Sajan and Lekshmi Mohan secured the first prize. CNC Router project by Roshan Joseph, Krishnadas, Vishnu M R and Rohit Raj (ME, TIST) secured the second prize.

A-Frame VR Demo was also done in association with Mozzila Kerala.

SHORT TERM TRAINING PROGRAM (INDUSTRY INTERNSHIP) ON 'PROJECT MANAGEMENT, FOSS TOOLS & VERSION CONTROL'

Industry Internship training on 'Project Management, FOSS Tools and Version Control using GIT' was conducted by Mr. Raphy P Varghese, CEO, gooseBerry.media, Technolodge, Piravom from 4th to 14th June 2018 (10 days) for S2 students. This was a unique internship program to build Leaders for the Industry. The program covered technical and behavioural aspects, including aptitude test, resume preparation, group discussions, mock interview, team formation, developing product idea, FOSS, project management training in - UNIX and GIT commands, GIT - version control and project management, Web designing using HTML5, CSS3, UI/UX, web hosting, idea pitching and product presentation. All the activities were done in groups, which helped inculcate in the students a sense of teamwork and cooperation with one another. The best performing teams were awarded.



FDP

FDPs ORGANISED (Total: 2)

- CSE department organised 2 days FDP on 'Moodle' in association with CSI TIST student chapter from 14th July to 15th July 2017.
- CSE department organised two days FDP on 'Machine Learning and Block Chain' in association with MieRobot, Bangalore and CSI during 7th – 8th March 2018.



SOCIAL COMMITMENT & EMPOWERMENT ACTIVITIES

EMPOWERING HOUSEWIVES IN COMPUTER EDUCATION:

Department of CSE, in association with NSS unit of TIST and CSI Cochin Chapter, conducted a two week free course on basic computer training for the housewives from 18th – 29th June 2018. The participants were trained in basic computer usage, Microsoft office and internet. They were also familiarized with smart phone usage, and at the same time, given awareness on the security aspects of the smart world. Those who completed the course were given certificates.



DISTRIBUTION OF SCIENTIFIC CALCULATORS TO SCHOOL STUDENTS

As a part of social commitment & awareness activities, The Department of CSE distributed Scientific Calculators to Plus Two Students of Govt. Schools nearby on 11th May 2018. The programme was conducted at Kakkoor in association with Grameena Vayanasala, Kakkoor.



Awareness Session: A session on ‘Engineers & Society’ was delivered to the public on the same day by Asso. Prof. Sreela Sreedhar, HOD CSE, Toc H Institute of Science & Technology, in connection with this programme.

VISIT TO JANEY CENTRE FOR SPECIAL EDUCATION, EROOR

As a part of social commitment activities, the students of 2014-’18 batch CSE along with HOD, Ms. Sreela Sreedhar and faculty members, Ms. Mima Manual and Mr. Anuraj C K had visited Janey Centre for special education, Eroor on 27th April 2018. This centre is intended to aid students having special needs for attaining an advanced level of individual self-reliance and achievements in the society. Students had organized many games and entertainment events. They distributed food packets to them. A financial support for them was also handed over to the authorities on the day. It was a special experience meeting those children who teach the acceptance of life conditions with the way they smile and play.

SOCIAL OUTREACH PROGRAM ON CYBER SECURITY AWARENESS IN ASSOCIATION WITH JANAMAITHRI POLICE AT SCHOOLS:

Yadev Jayachandran of 2016-’20 batch along with faculty Ms. Panchami V had taken cyber security awareness sessions for the students and parents at Govt. Higher Secondary School, Mannathoor on 26th September 2017. Yade, along with faculty member Mr. Abin Oommen Philip had taken cyber security awareness sessions for the students of St. Johns School, Vadakara, Kootattukulam on 31st August 2017. This initiative was in association with Janmaithri Police of Kerala State.

SOCIAL OUTREACH PROGRAM AT SCHOOL:

Yadev Jayachandran of 2016-’20 batch of the Dept. of CSE had taken an motivational session for students at Infant Jesus Public School, North Paravur on 22nd July 2017 to enhance their passion for technology. The topic was ‘Trends in Information Technology’, which gave an overview of latest technologies and guided the interested students regarding how they can start with.



MEMORANDUM OF UNDERSTANDING (MoU)

The Department also holds MoUs with the following organizations.

- Technolodge, The First Rural IT Park in Kerala
- Centre for Development of Advanced Computing (C-DAC)
- ICT Academy of Kerala (ICTAK)
- Oracle Academy
- Red Hat Academy
- VSB Technical University, Ostrava, Czech Republic

QUALITY IMPROVEMENT PROGRAMS

INFOSYS CAMPUS CONNECT

CSE Department successfully conducted Infosys Campus Connect Foundation Program 4.0 sessions for CSE S7 (2014-’18) students. Asst. Prof. Abin Oommen Philip (CC Coordinator) along with other faculty handled the sessions.

1. Placement Training

Five days placement training program by Konfidence group and Insight JobGuru group was organised from 27th June to 1st July 2017 for S7 CSE students. The training process involved aptitude training, group discussions and mock interviews. The session was really helpful in improving the analytical, quantitative and verbal skills of students.

2. Technical Session

Mr. Sarath Sreekumar and Mr. Suraj from Kites Software Pvt. Ltd., Kochi delivered a technical session on 'Recent Trends and Technologies in Computer Science' to S7 students on 14th July 2017. The session proved to be useful in understanding the current trends and opportunities in the IT sector.



3. Motivational Session

Mrs. Mary Theresa Lopez, Professor, Dept. of Science and Humanities, TIST, handled a session on 'Importance of Communication Skills and Positive thinking' to S1 CSE students on 18th July 2017.

4. Motivational Session

Ms. Reena Madhu, Asst. Professor, Dept. of Applied Psychology, TIST handled a motivational session on 'Positive Thinking and Professional Ethics' to S3 students on 24th July 2017.

5. HTML/CSS Workshop

A one day workshop on HTML/CSS for interactive website building was conducted for S1 students on 25th July 2017. Mr. Jerin A Mathews, CTO, Rectfy (CSE Alumni), Mr. Mohammed Ashique Kuthini of B.Tech 2015-'19 batch and Mr. Yadev Jayachandran of B.Tech 2016-'20 batch handled the sessions. Students were given hands on training on web page development.



6. Session on GATE Awareness & Relevance

Mr. Baasil, Mr. Sanjay from Rubix Academy for Career Excellence, Muvattupuzha delivered a GATE awareness session and conducted mock test on 11th August 2017 for S5 and S7 students. In this session, the students were given detailed awareness on the importance of acquiring GATE score in higher education as well as for better employment.



7. Technical Session: IOT & Big Data - Two sides of same coin

Dr. Rajesh Maliyackal, COE, Poonjar delivered a session on 'IOT & Big Data - Two sides of same coin' for S1, S3, S5



students on 18th August 2017 as part of the CSE association inauguration. The session outlined the important aspects of IoT and current trends in Big Data Analytics.

8. Motivational Session on SV Journey

Mr. Abraham Solomon, CTO, Nimkraft (CSE Alumni) delivered motivational session on his Silicon Valley journey experiences to S1 and S7 students on 18th August 2017.

9. Motivational Session on Entrepreneurship

Mr. Jibin Jose, CEO, Flip-Motion Inc, CA (CSE Alumni) delivered a session on 'Entrepreneurship: directions and challenges' to S1 and S7 students on 18th August 2017. The session proved to be a motivating one for the students who aspire to be future entrepreneurs and gave an insight of the possible challenges in becoming a successful entrepreneur.



10. Webinar on 'Fiction to Reality using Technology'

A webinar on 'Fiction to Reality using Technology' by Mr. K Nanda Kumar in association with Suntech, Oracle Academy and ICTAK was organized for S7 and M.Tech students on 29th August 2017.

11. Placement Training

A residential placement training program (soft skills) was conducted for S3 students from 24th to 26th August 2017 at TIST Campus. Mr. Renjith Kesav from Insight Job Guru handled the sessions.

12. GATE Awareness & Relevance

Mr. Ashish Babu from TIME conducted GATE awareness session and mock test for S7 on 9th September 2017.

13. Android Workshop

Mr. Jerin A Mathews, CTO, Rectify (CSE Alumni) conducted a workshop on 'Android Mobile Application Development' on 22nd and 23rd September 2017 for S5 Students. The participants were given hands on training on how to make basic mobile applications.



14. Social Commitment Session - MAD

Ms. Athira, Ms. Radhika Krishna, Mr. Jaidev, and Mr. Suraj conducted a motivational session regarding the activities of 'Make A Difference (MAD)' for S5 and S3 students on 27th September 2017. The event gave an insight on how each one can contribute to the enhancement of the society.

15. Webinar on 'The Future Currency – Bitcoins'

Mr. Gokul Alex from Infinity labs, UST Global delivered a webinar session on Bitcoins to S7 students on 27th September 2017.

16. Technical Session

Mr. Siddharth Prajosh & Yadev Jayachandran (B.Tech CSE Students) handled a session on 'Mozilla Firefox57 Quantum Sprint' and 'Mozilla Web Testing' to interested B.tech students on 4th October 2017.



17. Technical Workshop

Mr. Elwin George from Livewire, Muvattupuzha handled live demo session on Linux LAN on 5th October 2017 for S7 Students. The session detailed on various aspects of networking.

18. Placement Training

Placement training sessions by Konfidence was organized from 9th to 11th October 2017 for S7 students.

19. Android Workshop

Two days Android pilot workshop was conducted for B.Tech students on 11th and 25th October 2017 by Mr. Yadev Jayachandran (DSC lead at TIST) and Mr. Jerin A Mathews (CTO, Rectfy). This was done as a part of the Developer Student Clubs activities.

20. Workshop on IPV6 and Network Security

Two days workshop on IPV6 and Network Security was conducted from 19th to 20th October 2017 for M.Tech Data Security students. Mr. Naveen Lakshman from Protocol 41 Technology Solutions handled the sessions.

21. Webinar - The Infosys Story

Webinar session on 'The Infosys Story' by Mr. S D Shibulal, Co-founder, Infosys was organized on 25th October 2017 for S5 students.



22. Webinar – 'Humanoid from God's own Country'

A webinar session on 'Humonoid from God's Own Country' by Mr. Jayakrishnan T, Asimov Robotics Pvt. Ltd., Kalamassery was organized on 22nd November 2017 for CSE students.

23. Technical Session

Mr. Binol George, Branch Head, Livewire, Muvattupuzha handled a technical session on 'Scope of Security in Industry' for M.Tech students on 4th January 2018.

24. Orientation Session

Student Orientation Programme was conducted by Mr. Renju Kuruvilla, ICT Academy of Kerala for S2 students on 4th and 5th January 2018.



25. Technical Session

A technical session on '4th Industrial Revolution and Emerging Trends in IT' by Dr. Mendus Jacob, CEO and MD, IPSR (Director of MCA, Marian College, Kuttikanam) was organized for B.Tech students on 6th January 2018.



26. Linux Workshop

A workshop on Linux Administration was conducted by Mr. Binol George, Centre head, Livewire, Muvattupuzha on 11th January 2018 for S6 students. This was conducted as a bridge course for Network Programming lab under KTU.



27. Technical Session

A session on IoT was conducted for S7 and M.Tech students on 15th January 2018 by Dr. Manjaiyya, Professor, Mangalore University.



28. Placement Training

Residential training was conducted by trainers from Insight Job Guru for S6 Students on 19th and 20th January 2018.



29. Alumni Interaction

An interaction session with Mr. Vinu Kumaran, Development Head, Canadian Imperial Bank of Commerce (CSE Alumni) was organized for S8 students on 30th January 2018.

30. Interaction Session

An interactive session 'The GEEKS Dev Meet' was organized for CSE students with Mr. Shilendra S, Silicon Valley .10, fellow KSUM on 2nd February 2018.



31. Technical Session

Siddharth D, First Byte Digital Solutions, Kochi handled a technical session on React Native for CSE students on 10th February 2018.

32. Demo session on Wordpress

A live demo session on Wordpress was organized for S6 students by Mr. Saurav Mohan (CSE student) on 12th February 2018.

33. Webinar

A webinar session by Alan Williams on Introduction to Oracle, No SQL DB, DB Security, AI, Block chain, and Career Orientation was organized for B.Tech and M.Tech students, as part of oracle student day on 26th February 2018.

34. Technical Seminar

A seminar on 'Machine learning & Ethereum block chain' by Mr. Anirban Ghatak, Senior Director, Mierobot.com was organized for M.Tech and S8 students on 7th March 2018.



35. Technical Session

Dr. Ricky Jacob, CEO, Paysack, delivered a technical session on 'Cloud, Mobile and Information Security' to CSE students on 17th March 2018 as part of CSI Students Summit.

36. Motivational Session

Mr. Pramod Chandran, Service Delivery Manager, Wipro, Kochi, delivered a motivational session on 'How to mould your Career?' to CSE students on 17th March 2018 as part of CSI Students Summit.

37. Placement Training

Mr. Krishnaswamy A and Mr. Kishan S of Konfidence group conducted placement training sessions for S7 students from 21st May to 23rd May 2018.

QIP/TRAININGS ATTENDED BY FACULTY

- All faculty from CSE department attended 5 day FDP on 'Advanced Web Technologies' organized by the Dept. of IT in association with ISTE TIST student chapter from 12th June to 16th June 2017. Sessions included HTML/ Bootstrap 4, Flask, JS, CSS, JS, Node JS, Angular JS and WordPress.
- All faculty from CSE department attended Webinar on Infosys Campus Connect 4.1 by Mr. Hari S from Infosys on 5th July 2018.
- Asst. Prof. Elsaba Jacob attended five days FDP on Design Project from 15th to 19th July 2017 at Rajagiri School of Engineering and Technology, Kakkanad.
- Asst. Prof. Ceira Sara Cherian attended two days workshop on Graph Theory on 25th and 26th of July 2017 at KMEA College of Engineering and Technology, Edathala.
- Asst. Prof. Ceira Sara Cherian and Asst. Prof. Rinu Rose George attended a two day FDP on 'Web Technologies' at Muthoot Institute of Technology and Science on 15-16 December 2017
- Asst. Prof. Ceira Sara Cherian attended a three day KTU FDP on 'An Excursion to topics in Algorithm Design' at Model Engineering College from 28-30 December 2017
- Asso. Prof. Jesna Anver attended two days KTU FDP Two Day Workshop on Network Programming Lab at Model Engineering College on 13-14 December 2017. This workshop presented a two day hands on training course based on the latest KTU syllabus of Sixth Semester Computer Science.

- Asst. Prof. Mima Manual and Asst. Prof. Panchami V attended an FDP on 'Security and Forensics in Cyber Space: Advances and Future Directions' conducted by the Department of Computer Science and Engineering, ER&DCI Institute of Technology sponsored By APJ Abdul Kalam Technological University is conducting during 19 - 21 December 2017.
- Dr. N Vishwanath, Asso. Prof. Sreela Sreedhar (HOD), Asso. Prof. Jesna Anver, Asst. Prof. Saira Varghese, Asst. Prof. Leda Kamal, Asst. Prof. Elsaba Jacob, Asst. Prof. Panchami V attended an interaction session with Dr. Ajith Abraham, Director, MIR Labs, USA on 30th January 2018.
- Dr. N Vishwanath, Professor, CSE participated in two days Workshop on "Conceptual Practices of IoT & AI for Engineering Applications" held during 4th - 5th May 2018 at St. Joseph's Institute of Technology, Chennai.
- Asst. Prof. Panchami V attended two days Workshop on 'Women in Cyber Security Research WCR '18 at IIITMK, TECHNOPARK from 25th - 26th May 2018.
- Asst. Prof. Saira Varghese attended FDP on Compiler Design at Rajagiri School of Engineering and Technology in June 2018.
- Assoc. Prof. Sreela Sreedhar and Asst. Prof. Abin Oommen Philip attended 5 days workshop on 'Machine Learning' organized by MIEROBOT, Bangalore, in association with TIST Arakkunnam, from 23-27 July 2018 at TIST.

ONLINE COURSES ATTENDED

Asst. Prof Abin Oommen Philip completed the following online courses in 2018.

1. Blockchain Essentials - IBM
2. Intro to Python for data science - Datacamp
3. Python datascience toolbox - Datacamp
4. Statistical Thinking for Data science - data camp
5. Matlab - Matlab On Ramp

STUDENT PARTICIPATIONS

CO-CURRICULAR (EXTERNAL)

2014-'18 Batch

- Siddarth Prajosh (2014-'18) participated in Robo Soccer event in 'Invento '17' held at Govt. College of Engineering, Palakkad from 10th to 12th March 2017.

2015-'19 Batch

- Abhishek A A, Aravind Das A M, Arya R participated in CodeFoss as a part of IEEE Day celebration at TIST on 4th October 2017
- Aravind Das A M, Raichel Suseel, Vishakh S Nath participated in IKNOCK 18 competition held in connection with Fugeniz.8 at SNGCE on 15th and 16th February 2018
- Krishnapriya Santhosh, Krishnapriya Satheesh participated in VR and NAO events in the Techfest at IIT Bombay during 29-31 December 2017
- Sankar P G and Sreehari N P participated in Eden 2k18 organized by Marian Engineering College Kazhakkuttam from 25th – 28th January 2018

2016-'20 Batch

- Jishnu N V and Joel Suresh (2016-'20) participated in 'Code Scramble' competition held as a part of 'Abhiyanthriki 2017' held at Rajagiri School of Engineering and Technology on 17th & 18th March 2017.
- Akshay K N, Amal M K, Anjaly R, Krishnendhu Menon T N, Rahul Murali, Arun Gandhi and Jishnu N V (2016-'20) has participated in 'Criminal Minds – Criminal Case Hunting' and treasure hunt competition in Ragam'17 conducted by National Institute of Technology, Calicut from 24th to 26th March 2017.
- Abhay P A, Prince Francis participated in CodeFoss as a part of IEEE Day celebration at TIST on 4th October 2017
- Yadev Jayachandran attended Google Developer Days 2017 on 1st and 2nd December 2017 at BIEC,

Bengaluru.

- Merin Anna Joy and Taniya Joseph participated in Battle Field at Tarangam '18 held at AISAT, Kalamassery in 2nd -3rd February 2018
- Abhay P A participated in InternShala Graphic Design contest2.0 organised in association with PUMA Sports India Pvt. Ltd. In February 2018
- Afrin Azeez, Aiswarya Sen, Akshay K N, Amal M K, Anjali R, Ann Mary Tom, Ashika Chinnu Sabu, Dona Dennison, Jishnu N V, Krishnendu Menon, Malavika Girish, Mariya Paul, Sharon Biji Eshow participated in Google Android Development during Techfest at IIT Bombay during 29-31 December 2017

2017-'21 Batch

- Anjana Unnikrishnan, Anusha P R, Arya Anand, Ashna Benny, Harilakshmi N P, Jeethu Baiju, Nikitha Mariam Cherian, Tushara K R attended Career Training session conducted at WOMENDEV meet up on 26th January 2018 at 4tune factory, Kochi
- Ashmy V, Aswin Pinheir, G Steffy, Jwalin Sreebai, Shilpa M, Shilpa Edward participated in AI Summit during Techfest at IIT Bombay during 29-31 December 2017
- Farzan F A participated in Kochi StartUp Weekend powered by Google for Entrepreneurs and techstars
- Farzan F A participated in 'Swatantra '17', 6th International Conference on Free Software and Free Knowledge on 20th and 21st December 2017
- Farzan F A participated in Eden 2k18 organized by Marian Engineering College Kazhakkuttam from 25th – 28th January 2018
- I P Rakesh Kumar participated in IOT - IBM Watson at TIST from 6th -7th October 2017 organised by Robocart.com in association with Innovation Cell, UMIC, IIT Bombay.

TRAINING PROGRAMS (EXTERNAL)

- Akshay K, Alin Alex, Raichel Suseel, Aravind Das A M, Betty Babu, Carral Vincent, Praful Konnullu, participated in FOSS workshop at FOSSMett '18 conducted at NIT Calicut from 16th – 18th February 2018
- Sankar P G and Sreehari N P participated in Ionic Technologies Workshop organized by Marian Engineering College Kazhakkuttam from 27th January 2018

- Elsa Thomas, Nikhila Joy, Ranjana Raju, Sereena Job participated in workshop sessions on ANSYS held at NIT Calicut on 17th – 18th February 2018
- Varsha Hari participated in AutoDesk fusion 360 workshop at Shaastra 2018 at IIT Madras
- Anjana Unnikrishna, Anusha P R, Arya Anand, Navya Divakar, Roshni A T, T K Anjana Murari attended Texas IoT workshop on 20-21 January 2018 at

Drishti '18 at CET Trivandrum

- Farzan F A participated in workshop on Apache Spark for beginners, Introduction to React js in ICEFOSSat FISAT, Angamaly on 6th and 7th October 2017
- Farzan F A participated in Ionic Technologies Workshop organized by Marian Engineering College Kazhakkuttam from 27th January 2018

PAPER PRESENTATIONS/PUBLICATIONS

B.TECH STUDENTS

- Aysha Zenab Kenza and Mareena Baby presented a paper by EMG controlled Prosthetic Limb on at Innovar 2k18, a National level Technical Symposium held at SVS College of Engineering, Coimbatore for their paper titled “EMG controlled Prosthetic Limb” on 9th March 2018.

M.TECH STUDENTS

Ms. Fariya Faizel published a paper titled ‘Watermarking scheme for the security of critical multimedia data’ in the International Journal of Latest Engineering and Management Research (IJLEMR) ISSN: 2455-4847 www.ijlemr.com Volume 02 - Issue 11 November 2017 PP. 32-38

FACULTY

- Asst. Prof. Saira Varghese presented a paper “Varied Approach to Attribute based Access Model for Secure Storage in Cloud” in the IEEE sponsored International Conference on Innovations in Information, Embedded and Communication Systems (ICIIECS '17) held on 17th and 18th March 2017, organized by the Dept. of Electronics and Telecommunication Engineering, Karpagam College of Engineering Coimbatore.
- Asso. Prof. Sreela Sreedhar published a paper titled “Mixed Fingerprint Encryption Using LFSR to Secure Images” in IJOER, International Journal of Engineering Research, ISSN: 2321-7758 Vol.5., Issue.1., 2017

January-February.

- Asst. Prof. Anuraj C K published a paper “Analytical Study on Encryption Techniques and Challenges in Network Security” in the International Journal of Emerging Trends & Technology in Computer Science (IJETTCS) Volume 6, Issue 6, November - December 2017.
- Asst. Prof. Abin Oommen Philip published a paper titled “A Vision of Connected and Intelligent Transportation System” in the International Journal of Civil Engineering & Technology (IJCIET) - Scopus Indexed. Volume:9, Issue:2, Pages:873-882, February 2018.

INDUSTRIAL VISITS

IV to SmartLink, Goa

The students of 7th semester visited SmartLink, Goa on 18th July 2017. The students were accompanied by Asst. Prof. Abin Oommen Philip and Asst.



Prof. Dhanya. SmartLink is a networking company where the students were familiarized with switching, broadband routing, IP surveillance etc.

IV to RD Clock Technologies Pvt. Ltd., Mangalore

The students of 7th semester visited RD Clock Technologies Pvt. Ltd., Mangalore on 21st July 2017. RD Clock Technologies focuses on three fields, food processing, home automation and software develop-

ment. Sessions included popular communication protocols, and the students were exposed to their home automation products.

IV to IPSR Calicut

S5 CSE students visited IPSR Calicut on 24th August 2017 along with faculty Asst. Prof. Ashly Joseph and Anuraj C K.



IV to Technolodge Kakkoor

B.Tech S3 CSE students visited Technolodge Kakkoor on 18th August 2017 along with Asst. Prof. Mithu Mary George and Asst. Prof. Leda Kamal.



IV to CTS Infopark, Kochi

B.Tech S4 students visited CTS, Kochi on 25th January 2018 along with faculty members Asst. Prof. Mima Manuel and Asst. Prof. Mithu Mary George.



IV to Pallivasal, Idukki

B.Tech S6 students visited Pallivasal, Idukki on 24th February 2018 along with faculty members Asst. Prof. Panchami V and Asst. Prof. Abin Oommen Philip.



IV to FabLab, Kochi

Selected students of S1 along with Asst. Prof. Mima Manuel and Asst. Prof. Rinu Rose George visited FabLab, Kochi on 20th June 2018.



ALUMNI INTERACTIONS

- An Alumni meet was organized on 16th October 2017 at CSE department. Pass out students from different batches attended the meeting and shared their experiences. Faculty and students interacted with the Alumni members.
- An interaction session with Mr. Bijin Abraham, Graduate Developer at Yellowfin International, Australia (CSE Alumni) was organized for S8 students on 20th December 2017.
- An interaction session with Mr. Vinu Kumaran, Development Head, Canadian Imperial Bank of Commerce (CSE Alumni) was organized for S8 students on 30th January 2018.
- TIST organized Alumni meet 'Reminiscence '18' on 14th April 2018. Many CSE alumni participated in the meet and shared their experiences.



IEDC EVENTS

CSE students participated in various student summits and training sessions under IEDC in various colleges, including Young Entrepreneur Summit Kerala (YES Kerala), IDEA Day and IEDC Summit 2018.



CSAT – CSI STUDENT COORDINATORS

Mr. Sreehari N P (CSI TIST - Secretary)

Ms. Raichel Suseel (CSAT - Secretary)

Mr. Yadev Jayachandran (CSI TIST - Joint Secretary)

Ms. Thara Jose (CSAT - Joint Secretary)

ACADEMIC EXCELLENCE

GEORGEKUTTY P THATTIL MEMORIAL ENDOWMENT: (The award is presented each year to the CSE topper, in memory of our beloved student, Georgekutty P Thattil (2010-'14 Batch) who passed away on November 2nd 2011, sponsored by his family.) - Ms. Saina A S (2014-'18 Batch)

B.TECH PROFICIENCY:

Ms. Sreelekshmi R Nair (2015-'19 Batch) - CGPA 8.35 till third year

Ms. Varsha Hari (2016-'20 Batch) - CGPA 9.07 till second year

Ms. Ashna Benny (2017-'21 Batch) - CGPA 9.33 till third year

FACULTY AND STAFF



TEAM CSE

Teaching faculty: 17

Technical staff: 9

Number of faculty having Ph. D: 2

Faculty doing research in various fields: 6

Professors

1. Dr. Manjaiah D H, Professor,
Mangalore University (Adjunct)

2. Dr. N Vishwanath

Associate Professors

1. Dr. Sreela Sreedhar, **HOD**

2. Dr. Rasmi P S

3. Ms. Jesna Anver

Assistant Professors

1. Ms. Saira Varghese

2. Ms. Leda Kamal

3. Ms. Elsaba Jacob

4. Ms. Panchami V

5. Mr. Abin Oommen Philip

6. Ms. Mima Manual

7. Ms. Ceira Sara Cherian

8. Ms. Ashly Joseph

9. Ms. Rinu Rose George

10. Ms. Mithu Mary George

11. Ms. Anju Kuriakose

12. Mr. Anuraj C K

System Administrator

1. Mr. Ritesh P

Lab Instructors

1. Ms. Jisha Rajeev

2. Ms. Manju C N

3. Mr. Joby Varghese

4. Ms. Smitha P K

5. Ms. Fareeda Begum

6. Ms. Remya Tomy

7. Mr. Manoj M John

8. Mr. Sreelal C U

System Technician

1. Mr. Babin Babu

Lab Assistant

1. Ms. Lizzy K M

BEST PRACTICES

CLASS COMMITTEE MEETINGS

Class committee meetings are conducted regularly in every semester for all the batches. This is an interaction program with the student representatives and faculty, so that feedbacks can be assessed regularly and action plans can be taken up.

PTI MEETINGS

Parent Teacher Interaction meetings are conducted once in a semester for all the batches. The activities and achievements of the department are briefed to the parents during this meeting. One to One meeting with teaching faculty is also arranged to keep track of the performance of their wards so that proper follow up actions can be taken. Feedback from parents on academics and infrastructure are collected for continual improvement.

FEEDBACK MECHANISM

The department follows online feedback mechanism. The feedbacks for each subject are taken twice a semester to assess the faculty performance. Infrastructure feedback is also taken to assess the infrastructure provisions.

GROUP ADVISORY & SPECIAL MENTORING

Department follows group advisory system for effective mentoring of students. The students of each class are divided into groups and a teaching faculty is assigned as mentor for their support. Special Mentors are also provided for under performers and constant monitoring is being done. Meeting with Principal is arranged for Toppers as well as Low performers once in a semester, so that their problems if any can be solved effectively. Counseling and Psychology department of TIST provides further assistance in mentoring.

STUDENT INTERSHIPS:

All students of 1st, 2nd & 3rd year B.Tech and 2nd year M.Tech undergo internship trainings in reputed companies during their semester break. This gives them an exposure to live industry scenario.

BRIEF ON 2018-'19 ACTIVITIES & ACHIEVEMENTS

Ph. D:

Hearty Congratulations to Dr. Sreela Sreedhar, HOD, CSE for completing her Ph.D in Information and Communication Engineering (Anna University, Chennai).



MoA WITH ASAP:

TIST signed an MoA with ASAP (Additional Skill Acquisition Programme) to conduct certification courses in Artificial Intelligence and Machine Learning in the initial phase. Dr. Sreela Sreedhar, HOD-CSE is serving as the nodal officer, along with Dr. N Vishwanath and Asst. Prof. Abin Oommen Philip as resource persons. TIST is one among the selected ASDC from 19 engineering colleges across Kerala to run the Advanced Skill Development Centres (ASDC).



BEST OUTGOING STUDENT OF TIST – 2018:

Ms. Manju Mohan of 2018 pass out batch is selected as the 'Best Outgoing Student of Toc H Institute of Science and Technology.



KTU CERD FUNDING:

The project titled "Cooperative vehicle platooning using machine learning and computer vision" was selected under Research Seed Money Scheme for project funding by APJKTU.

Team Members - Harikrishnan Vijayan, Roshan Josey, Sankar P G, Sreehari N P – 2015-'19 batch

Principal Investigator - Asso Prof. Dr. Sreela Sreedhar

Co-Investigator - Asst.Prof Abin Philip



REDHAT CERTIFICATIONS:

Kailas P A, Abhishek A, Nidhin John, Mohammed Sahl Saju Kasim, Jim Brown T Baby, Albin Xavier and Mohammed Asif from CSE is RHCSA certified, through the REDHAT ACADEMY PARTNER offered by IPSR.



FLOOD RELIEF ACTIVITIES:

Keeping up with the Institutes' motto "Service is the Rent we pay for our room on Earth", the students and staff of TIST served at various rehabilitation and relief centers in and around the city. Under the coordination of NSS and Yi TIST, the volunteers initiated cleaning, rehabilitation, data entry, survey, goods supply and coordination activities. CSE department also contributed to the supply of relief goods. The students under the coordination of Binu Varghese (M.Tech CSE) took part in the "Rebuild Kerala Initiative" by Velloor Gram Panchayath. The students contributed to the Rebuild Kerala Mobile App based Survey and other activities.

WORKSHOP ON MACHINE LEARNING

Department of CSE, in association with MieRobot organised an industrial training program on Machine Learning for the S7 CSE students. An Online + Hands-on training mode was successfully tried out for the training. The students underwent a month long online training on Python essentials for ML, followed by 5 days hands-on implementation of various Machine Learning algorithms from July 23-July 27, 2018. Mr Anirban Ghatak, Senior Director MieRobot was the resource person.

BID ADIEU

Ms. Panchami V (Assistant Professor)
Ms. Smitha P K (Lab Instructor)
Ms. Fareeda Begum (Lab Instructor)
Mr. Sreelal C U (Lab Instructor)
Mr. Babin Babu (System Technician)
Ms. Lizzy K M (Lab Assistant)

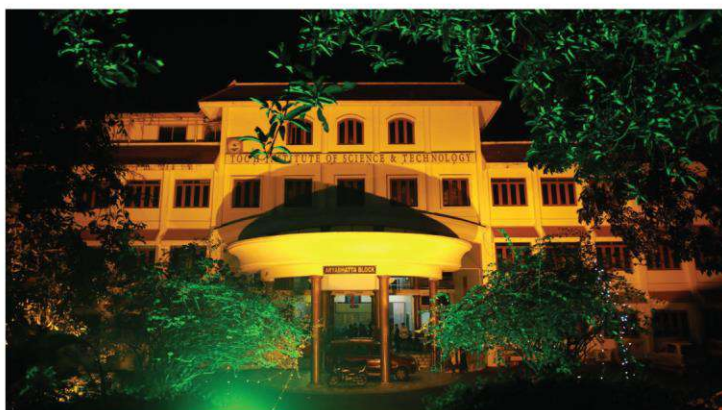
9TH INTERNATIONAL CONFERENCE ON BIO-INSPIRED COMPUTING AND APPLICATIONS (IBICA '18)
& 8TH WORLD CONGRESS ON INFORMATION AND COMMUNICATION
TECHNOLOGIES (WICT '18)

The Department of CSE successfully conducted the 9th International Conference on ‘Innovations in Bio-Inspired Computing and Applications’ from 17-19 December 2018. The conference was conducted in association with Machine Intelligence Research Labs (USA) which aimed to provide a platform for world research leaders and practitioners, to discuss the full spectrum of current theoretical developments, emerging technologies, and innovative applications of Bio-inspired Computing. Dr. Oscar Castillo, Senior Professor at Tijuana Institute of Technology, Mexico inaugurated the conference on 18th December 2018 at Toc H.

The three day conference witnessed plenary sessions on

- “On the Wiener Index Spanning Tree Problem” by Dr. Sheng-Lung Peng, National Dong Hwa University, Taiwan.
- “Bio-Inspired Optimization of Type-2 Fuzzy Logic Systems” by Dr. Oscar Castillo, Tijuana Institute of Technology, Mexico.
- “New Computational Intelligence Techniques in Software Reliability Engineering” by Dr. Florin Popentiu Vladicescu, University Politehnica of Bucharest, Romania.

The conference proved to be a significant one where researchers from Europe, US, Africa, and Asia presented about 51 different papers, based on the topics like Fuzzy Logic, Data Mining and Knowledge Discovery, Artificial Neural Networks, Particle Swarm Optimization, Genetic Algorithms, Applications of Bio-inspired Computing etc. The proceedings of the conference will be published by Springer: Advances in Intelligent Systems and Computing. The event was co-sponsored by KSCSTE (Kerala State Council for Science, Technology and Environment).





Quantum Computing

Into the new era of computing

CONTENT COURTESY: D-WAVE, IBM-Q, WIKIPEDIA

Over 50 years of advances in mathematics, materials science, and computer science have transformed quantum computing from theory to reality. Today, real quantum computers can be accessed through the cloud, and many thousands of people have used them to learn, conduct research, and tackle new problems.

Quantum computers could one day provide breakthroughs in many disciplines, including materials and drug discovery, the optimization of complex systems, and artificial intelligence. But to realize those breakthroughs, and to make quantum computers widely useable and accessible, we need to reimagine information processing and the machines that do it.

As of 2018, the development of actual quantum computers is still in its infancy, but experiments have been carried out in which quantum computational operations were executed on a very small number of quantum bits. Both practical and theoretical research continues, and many national governments and military agencies are funding quantum computing research in additional effort to develop quantum computers for civilian, business, trade, environmental and national security purposes, such as cryptanalysis. Noisy devices with a small number of qubits, also dubbed noisy intermediate-scale quantum (NISQ) devices by John Preskill, have been developed by a number of companies, including IBM, Intel, and Google. IBM has made 5-qubit and 16-qubit quantum computing devices available to the public for

experiments via the cloud on the IBM Q Experience. D-Wave Systems has been developing their own version of a quantum computer that uses annealing.

The basic principle of quantum computation is that the quantum properties can be used to represent and structure data, and that quantum mechanisms can be devised and built to perform operations with this data. Rather than store information using bits represented by 0s or 1s as conventional digital computers do, quantum computers use quantum bits, or qubits, to encode information as 0s, 1s, or both at the same time. This superposition of states, along with the other quantum mechanical phenomena of entanglement and tunneling, enables quantum computers to manipulate enormous combinations of states at once.

Large-scale quantum computers would theoretically be able to solve certain problems much more quickly than any classical computers that use even the best currently known algorithms, like integer factorization using Shor's algorithm (which is a quantum algorithm) and the simulation of quantum many-body systems. There exist quantum algorithms, such as Simon's algorithm, that run faster than any possible probabilistic classical algorithm. A classical computer could in principle simulate a quantum algorithm, as quantum computation does not violate the Church–Turing thesis. On the other hand, quantum computers may be able to efficiently solve problems which are not practically feasible on classical computers.



3D Metal Printing

Revolutionizing the way we build

While 3-D printing has been around for decades, it has remained largely in the domain of hobbyists and designers producing one-off prototypes. And printing objects with anything other than plastics—in particular, metal—has been expensive and painfully slow.

Now, however, it's becoming cheap and easy enough to be a potentially practical way of manufacturing parts. If widely adopted, it could change the way we mass-produce many products.

In the short term, manufacturers wouldn't need to maintain large inventories—they could simply print an object, such as a replacement part for an aging car, whenever someone needs it.

In the longer term, large factories that mass-produce a limited range of parts might be replaced by smaller ones that make a wider variety, adapting to customers' changing needs.

The technology can create lighter, stronger parts, and complex shapes that aren't possible with conventional metal fabrication methods. It can also provide more precise control of the microstructure of metals. In 2017, researchers from the Lawrence Livermore National Lab-

oratory announced they had developed a 3-D-printing method for creating stainless-steel parts twice as strong as traditionally made ones.

Also in 2017, 3-D-printing company Markforged, a small startup based outside Boston, released the first 3-D metal printer for under \$100,000.

Another Boston-area startup, Desktop Metal, began to ship its first metal prototyping machines in December 2017. It plans to begin selling larger machines, designed for manufacturing, that are 100 times faster than older metal printing methods.

The printing of metal parts is also getting easier. Desktop Metal now offers software that generates designs ready for 3-D printing. Users tell the program the specs of the object they want to print, and the software produces a computer model suitable for printing.

GE, which has long been a proponent of using 3-D printing in its aviation products (see "10 Breakthrough Technologies of 2013: Additive Manufacturing"), has a test version of its new metal printer that is fast enough to make large parts. The company plans to begin selling the printer in 2018. —Erin Winick

OUR DISTINGUISHED ALUMNI



Anoop K Nayak
Site Reliability Engineer
LinkedIn
2010-'14 batch



Jibin Jose
Co-founder and CEO
Flipmotion, Inc || Travoid.io
Los Angeles, California
2010-'14 batch



Pramod Chandran
Project Manager
IBS Software, Kochi
2004-'08 batch



Divya Anna Marcus
Software Engineer
Intel Corporation
2004-'08 batch



Ansu Som
BI Manager
Microsoft, Washington
2005-'09 batch



Vinu Kumaran
Development Lead at CIBC
Ontario, Canada
2003-'07 batch



Gokul Kishan
Lead IT Auditor
Net Connect .Ltd Bangalore
2004-'08 batch



Bijin Abraham
Graduate Developer
Yellowfin International
Melbourne, Australia
2010-2014



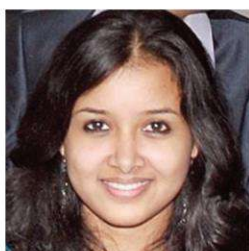
Sandeep Zechariah George
Ph.D* , Univ. of Calgary, Canada
(Product Solution Developer at Adobe)
2003-'07 batch



Aswini sen
Software Development Engineer
Amazon Web Services, Virginia
2007-'11 batch



Chandini R Nair
Research Fellow
Univ. of Windsor, Canada
2008-'12 batch



Anu M Chacko
Network Consulting Engineer
Cisco Bangalore
2006-2010 batch



Revon Mathews
Software Engineer
Intel Corporation, San Francisco
2006-2010 batch



Meethu Mathew
Senior R&D Software Engineer
Flytxt Tvm.
2006-2010 batch



Nayana Varghese
Test Analyst, AccessHQ
NSW Australia
2008-2012 batch



Sonny K Raju
Software Engineer (iOS/tvOS)
Accedo.tv, Toronto, Canada
2006-2010 batch



Manju Mohan
Software Engineer
IBS Software
2014-2018

BEST DEPARTMENT AWARD 2017-'18

The Department of Computer Science and Engineering has been honoured with the 'Best Department Award' of Toc H Institute of Science and Technology for the third time considering the best all round performance in the academic year 2017-'18, for the third time. The award was presented during the graduation day ceremony held in September 2018.



OUTGOING STUDENTS (2014-'18)



**ഗ്രാമവിദ്യാഭ്യാസത്തിലുമായി
കാക്കൂർ ഗ്രാമീണ വായനശാല**

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