ICT CHRONICLE

Annual Newsletter of the Department of Information and Communication Technology, Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal-576104

Vision: "Excellence in Information and Communication Technology Education through continuous learning and teamwork"

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MESSAGE FROM PREDECESSOR HOD

In the occasion of completing my tenure of the Head of the Department, I am delighted to announce the third edition of "ICT Chronicle", an annual newsletter of the Department of Information & Communication Technology, MIT, Manipal. It gives me a great pleasure to share with you, the progress being made by the department in research, placement and teaching-learning activities. In the era of engineering and technology, this newsletter will motivate teachers and students to share their creativity and ideas with the community and will help in their overall development. The relentless effort of ICT Chronicle team in bringing out this newsletter is highly commendable. I am very confident that the department will reach greater heights and meet all the objectives under the able leadership of the incoming HOD, Dr. Smitha N Pai. I wish her all the very best. I congratulate and thank all the faculty, supporting staff and students for their contributions to make the department flourish and to be recognised as one of the top departments in the Institute in teaching learning, placement and research.

MESSAGE FROM HOD

This newsletter brings with it the achievements, attainments in various areas from individuals of ICT Dept. It is my pleasure to be invited to pen a word or two. The department has carved a niche for itself with respect to various programs, research, sports and realization of various innovative initiatives. This bulletin brings a platform to showcase their potential and encourage others to move forward and display their latent qualities. Taking the tradition forward, we look ahead for more accolades from the faculty, students and staff members in the coming years as well. I appreciate Dr. Balachandra who is the pioneer of this newsletter and who has taken it way forward to this stage. Wishing him the very best in all endeavors.

♣ WORKSHOPS

PING 2020

The annual workshop of the ICT Dept., PING 2.0.2.0 with the theme "Data Visualization" was conducted on 21st and 22nd February, 2020. Mr. Sudhanva, Application Architect, IT Console Solution, IBM. Muniyandi Perumal, Chief Application Architect, Services Platform with Watson solution, IBM. Mr. Mayur Gandhi, Lead Analytics Solution Architect, IBM. Viswanatha K, Senior Data Scientist, IBM, were the resource persons. They focused on overview of data science and visualization using Cognos, open source dashboards and applications of Cognos using python programming. **Dr. Balachandra** and **Dr. Preetham Kumar** were the conveners of the workshop.
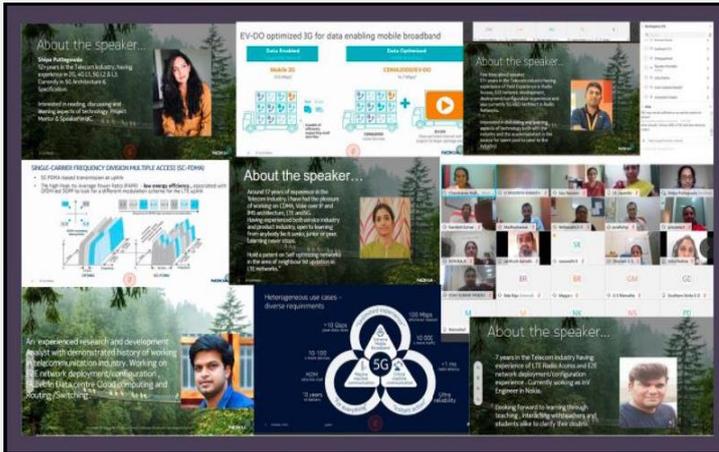
LTE and 5G

Four days of online FDP on "LTE and 5G" was jointly organized by the departments of ICT, CSE, ECE, CA of MIT, Manipal in collaboration with RV College of Engineering, Bengaluru, and NOKIA Bengaluru. FDP had hands-on experiential learning through simulations. This was a unique skill development program aimed for teaching faculty to upgrade their know-how on LTE/5G technologies and its application in real-time use cases. Thereby, they can further impart the latest knowledge to the budding student engineers. The FDP was conducted from 21st September to 24th September, 2020. The convener of the event was **Dr. Poornalatha G**.

ATAL FDP on Cyber Security

Dept. of ICT organized one week online FDP, on "Cyber Security" sponsored by AICTE Training and Learning (ATAL) Academy from 9th November to 13th November, 2020. During the FDP, many interesting topics such as Intrusion Detection and Prevention Techniques, Introduction to Cyber Security, Vulnerabilities and Safeguards, Cryptography and Cryptanalysis, Cyber Forensics, Cyber Laws, Ethical hacking, Hand Writing analysis and many more, were thoroughly discussed. Resource persons from various industries and academics were invited. The organizing chair and coordinator for this event was **Dr. Balachandra**, **Mr. Akshay K C** and **Ms. Chetana Pujari**, were the co-coordinators.
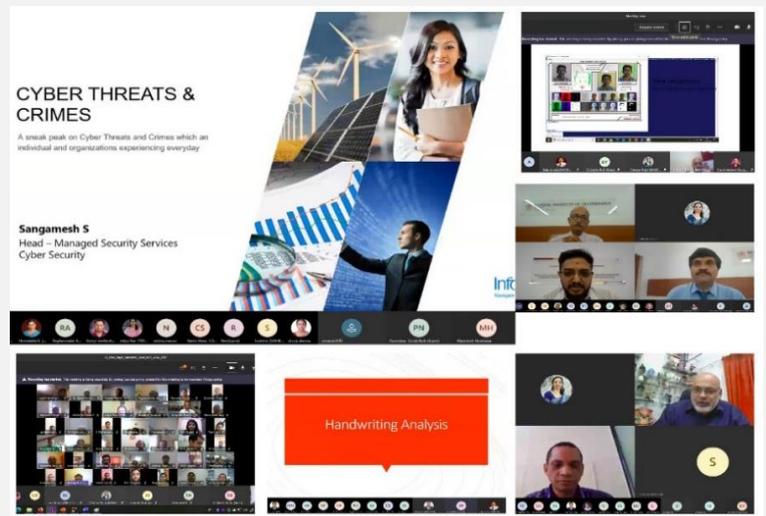
AICTE STTP on Natural Language Processing

STTP on NLP was organized in two series, first series from 16th November to 21st November, 2020 and second series from 14th December to 19th December, 2020. The STTP was sponsored by AICTE under AQIS. STTP had resource persons from various industries and academics, who disseminated their knowledge and expertise in the field of NLP through theory and hands-on sessions. Each day was organized into four sessions which mainly focused on various trending areas of NLP such as Document Categorization, Text Classification and Summarization, Sentiment Analysis, NLP in Cyber Forensic, Ontology and NLP, Morphology, Graphology etc. The STTP was coordinated by **Dr. Smitha N Pai.**

♣ CENTERS

- ξ Center for Cyber Security under MAHE is coordinated by Dr. Balachandra.
- ξ Center for Artificial and Machine Intelligence under MAHE is coordinated by Dr. Sanjay Singh.

♣ GUEST LECTURES/ SEMINARS

5G Network by NOKIA

A guest lecture on the topic "5G Network" was organized by the Dept. of ICT for the students and faculty on 29th February, 2020. Ms. Shilpa Puttegowda, 5G R&D Specification Expert, NOKIA was the speaker for the session. She provided an overview on 5G network. She also emphasized on the need for 5G, its architecture and standards. The speaker demonstrated the working of through videos helped the audience to understand the concept better. **Dr. Poornalatha G**. coordinated the program.

Nokia Bangalore University Collaboration presents

Speaker: Shilpa Puttegowda
5G R&D, Specification Expert
M.S Embedded Systems, Manipal University

12 years of experience in Software Development with expertise in Telecom domain

IBM Tech Talk Webinars: Artificial Intelligence

Two webinars on the topics "Artificial Intelligence: The Present and Future" and "Artificial Intelligence & Cognitive Computing Platform" were organized by the department on 29th July and 1st August, 2020. The In the first webinar Mr. Viswanatha K, IBM, Bengaluru, provided an overview on Artificial Intelligence, key terminologies, its application and future scope. In the second webinar, Mr. Muniyandi Perumal, IBM, Bangalore was the speaker. He made it apparent to the audience, how AI and Cognitive Computing are different from one another in which Cognitive Computing tries to replicate how humans would solve problems while AI seeks to create new ways to solve problems that can potentially be better than humans. The events were co-ordinated by **Dr. Balachandra** and **Dr. Preetham Kumar**

Corporate Life

Guest Lecture on "Corporate Life" was delivered by Ms. Ashwitha V, alumnus, B.Tech. CCE (2019 batch) Associate Developer, SAP ARIBA, Bangalore on 12th September, 2020. She addressed UG students and shared experience of corporate life. She gave ideas to crack placement interviews for getting a job. She highlighted few key points for the success in corporate journey. The event was coordinated by **Dr. Krishna Prakasha**.
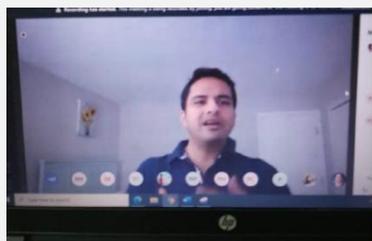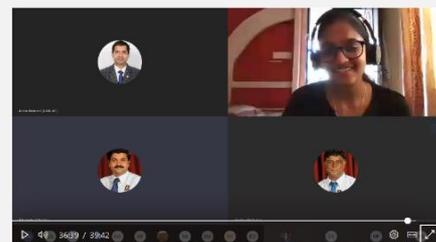
A guest talk was organised on 19th September, 2020 for under graduates of B.Tech (IT) and B.Tech (CCE). Mr. Ashish Jaiswal, alumnus B.Tech IT (2010 batch) who is working as a senior software engineer in Microsoft Corporation, USA was the resource person. He discussed about the product he works on (PowerPoint) and importance of investing more on intelligence of this product. Further, he discussed on placement and addressed queries of students. Students found the session to be very informative and were motivated. The event was coordinated by **Mrs. Rashmi N**.

Alumni Talk

Mr. Akash Budhia, Alumnus B.tech IT (2012 batch) addressed undergraduate students during Alumni and Experts' talk series, organized by the Office of Alumni, Public & International Relations on 10th November, 2020 .

MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL

Alumni and Experts' Talk Series
#11

Mr Akash Budhia
Senior Engineering Manager
OYO

Inventing & Reinventing Yourself for Professional World

A guest talk was organized on 7th December, 2020 for the students and faculty of MIT, Manipal. Mr. Jaideep Rao, an alumnus B.E. IT (2012 batch) who is working as a contributor at Sigachi and volunteer at India Education Collective, was the resource person. He discussed about the growth planning factors, what to expect and what not to expect for the growth and about inventing and reinventing oneself. Then a general discussion was carried out followed by Q&A. Students found the session very inspiring. **Mrs. Divya S.** coordinated the session.

♣ FACULTY ACHIEVEMENTS

Executive Committee Members 2020

Poornalatha G
VICE-CHAIR

Manohara Pai M M
MEMBER EXECOM

Radhika M Pai
MEMBER EXECOM

IEEE Mangalore Sub-Section
R0011901

Dr. Sanjay Singh and Dr. Poornalatha G are recognized as ACM Senior members for technical and professional accomplishments by ACM.

Dr. Sumith N was conferred with Best thesis award on 27th January, 2020 with cash prize of Rs. 25000, by Board for IT Education Standards.

Dr. Adesh N.D was awarded "Special Mention of the Jury" in Compute Science and Engineering for his Ph.D. thesis by Board for IT Education Standards on 21st November, 2020.

Interaction with Outside World

Dr. Ramakrishna M. has worked as Post-Doctoral Research Associate at Dept. of Computer Science, University of Bath, UK from July 2019 to March 2020. The research work focused on "Design and Development of 6-DoF VR Photography". This position was funded by EPSRC-UKRI Innovation Fellowship.

Mr. Ghanashyam Prabhu is carrying out research at INSIGHT, Centre for Data Analytics, Dublin City University. He is working with wearable sensor applications on Gait Analysis.

Mr. Arjun C V is currently carrying out research at Technological University Dublin. The research work aims at modelling cognitive load with EEG and deep learning for human computer interaction and instructional design.

Dr. K Rajesh Rao is currently working with City, University of London, UK towards the EnergyShield European Union Project in the area of Cyber Security.

DST Grant Project

The progress on the DST grant project on Smart Aquaculture was presented by **Dr. Manohara Pai M M** and team to the Minister of Fisheries, Govt. of Karnataka on 4th October, 2020 and visited the site "Moodukudru" where Smart Aquaculture system has been deployed for the project. Minister of Fisheries, appreciated the progress and invited the team to join with the departmental activities to help the local fish farmers with technological solutions to improve with their aquaculture productivity.

Faculty as keynote speaker/resource person

Dr. Smitha N Pai was the resource person for Webinar on "Machine Learning using Python", organized by the SJEC, Mangalore on 28th July, 2020.

Dr. Sumith N was the resource person during five day FDP on "Research Challenges and Trends in Information Technology" organized by Sahyadri College of Engineering and Management from 4th to 8th August, 2020.

Dr. Manohara Pai M M was the resource person for an online session of the workshop "BIOSENSORS: Fundamentals to Advances Scope & Applications" and delivered a lecture on the topic "Printed Sensor Innovations and Its Applications in Health Care A Case study: Design and Development of Sensor-based Smart Insole and Temperature Profiler for Foot Ulcer Prediction in Diabetes" on 6th August, 2020 organized by Department of Medical Electronics Engineering/ Department of Electronics and Telecommunication/ Department of Electronics and Communication of MSRIT Bengaluru.

Dr. Ramakrishna M and Mr. Akshay K C were the resource persons for TEQIP – III sponsored 1 day online workshop "Mastering LATEX for Technical and Scientific Documentation", organized by Department of Industrial Biotechnology, Government College of Technology Coimbatore, on 10th August, 2020. It was organized for PG students, research scholars, scientists, and teaching faculties of various colleges and universities.

Dr. Poornalatha G. was TPC Chair for the 4th IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (IEEE DISCOVER 2020) held on 30th and 31st October, 2020. She was the Chief Guest and delivered keynote address during the inauguration of IEEE student branch at P.A. College of Engineering, Mangalore, on 6th October, 2020.

Dr. Manohara Pai M M was the Guest of Honor for the inauguration programme of the workshop on "Cage Fish Farming" organized by Mr. Srinivas Poojary , Minister of State for Fisheries, on 13th November, 2020. As part of the workshop, the Smart Water Quality monitoring system was demonstrated which is deployed as part of the DST supported research project useful to the fish framers and prospective entrepreneurs attending the workshop. The SP of Coastal police was also present during the function.

Dr. Manohara Pai M M was the President for the inauguration of the IEEE SIGHT MIT Manipal Chapter and International Symposium on 23rd November, 2020. He gave the presidential remarks and also delivered a Keynote address on the topic "Food security through Smart Aquaculture: An IoT enabled Approach".

Dr. Ramakrishna M has delivered a talk on "Journey of PhD - Challenges and Achievements" to the Full-time Research Scholars on "Online Lecture Series for PhD Scholars," at MIT, Manipal on 16th December, 2020.

Cryptonite @ ShaktiCTF Competition

Cryptonite is the official ethical hacking and cybersecurity team of ICT, CSE, DCA departments' students of MIT, MAHE. The team focuses on areas such cryptography, forensics, research, reverse engineering and web exploitation. The team strives to have a deeper understanding of traditional methods and techniques in cybersecurity and their implications in today's world. Cryptonite is currently ranked 26th in India out of 2525 teams and is amongst the top 400 teams globally. The faculty advisors of the team are **Dr. Balachandra**, and **Mrs. Nisha P Shetty** from Dept. of ICT. Ms. Cynthia Maria Royden Dsouza (III SEM CCE) and Gauri Bhardwaj (III SEM CCE) from Cryptonite have participated and the secured the 8th place ShaktiCTF competition. This competition was for Women-only, Jeopardy style online Capture The Flag (CTF) competition which was held by Team Shakti (Amrita Vishwa Vidyapeetham) during 4th December and 5th December, 2020 through virtual mode.

Smart India Hackathon (SIH 2020)

MIT organized an Internal Hackathon as a preliminary round to select and nominate best 7 teams (5 for Software Projects and 2 for Hardware Projects). This Hackathon was organized on 18th January, 2020 for a duration of 12 hours. Around 33 teams had participated in the event. Problem statements were provided by various industries. and government sectors on the SIH 2020 portal.

Further MIT was one of the nodal centres to facilitate the Virtual Grand Finale of SIH-Software Edition 2020. MIT had hosted the SIH for problem statements given by BEML Limited, Bharat Electronics Limited, NCR Corporation (India) Private Limited. Total 22 teams with 132 participants have competed against 6 problem statements from 1st August to 3rd August, 2020. The event was conducted online using workspace of MIT on SLACK tool. A team of 12 faculty coordinators from Dept. of I&CT and Dept of CSE and 21 student coordinators of various departments had involved in the conduction of Hackathon, which was headed by **SPOC, Dr. Sucheta Kolekar,** Dept. of ICT. Faculty have gone through extensive training sessions given by MHRD & AICTE on SLACK tool which was used as a primary method of communication and sharing along with Microsoft Teams. The faculty of the department, Mr. Akshay K.C, Mr. Raghavendra Ganiga, Mrs. Swathi B. P., Ms. Chetana Pujari, Mr. Chethan Sharma, Ms. Ipsita Upasana were actively involved in the process of hackathon.
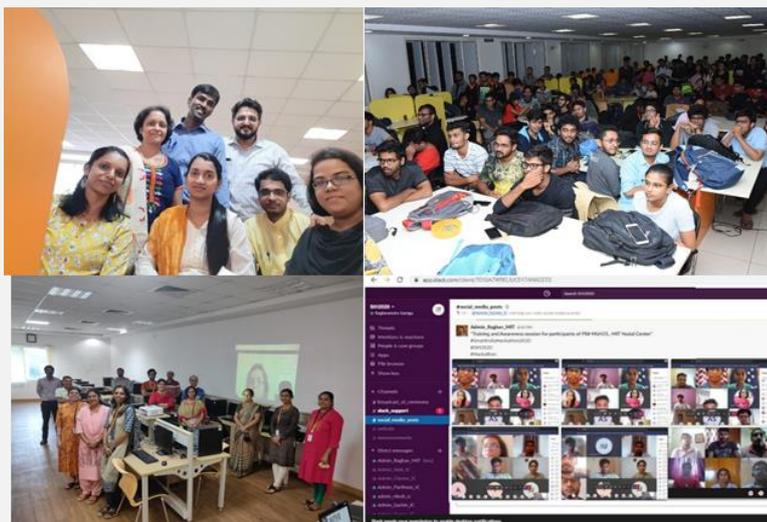
Ph.D. Awardees

Mr. K Rajesh Rao has been awarded doctoral degree by MAHE, Manipal, for his thesis titled "Development of Secure Cloud Services for Storing and Accessing Data in Role Based Access Control Applications" under the guidance of Dr. Ashalatha Nayak, HOD & Professor, Dept. of Computer Science and Engineering, MIT, Manipal.

Mrs. Girija Attigeri has been awarded doctoral degree by MAHE, Manipal, for her thesis titled "Efficient Methodology to Identify the Outliers in Financial Big Data for Fraud Detection" under the guidance Dr. Manohara Pai M.M, Professor, Dept. of ICT and Dr. Radhika M. Pai , Professor, Dept. of ICT, MIT, Manipal.

Mr. Tribikram Pradhan has been awarded doctoral degree by Indian Institute of Technology (BHU) Varanasi, for his thesis titled "Multi-objective Academic Recommender System" under the guidance of Dr. Sukomal Pal, Dept. of CSE, Indian Institute of Technology (BHU), Varanasi.

Publications

The faculty members have published around forty-two research papers in various Scopus and Web of Science indexed journals and also presented around sixteen papers in various international conferences. Students of the department have also contributed for publications.

Research Grants Received

Dr. Manohara Pai M. M. has received Research Grants worth Rs. 1,90,408 and Dr. Krishna Prakasha has received Research Grant (Credits) worth 5,13,000.

♣ STUDENT ACHIEVEMENTS

I'm Sherlocked event Winner

Mr. Ayush Mann, III Sem, B.Tech IT, won first prize and cash prize of Rs. 5000 at "I'm Sherlocked" during the three-day cultural festival at IIM Bangalore, Unmaad 2019 from 31st January to 2nd February 2020.

A Rural Development Hackathon

Mr. Ishan Kumar and Ms. Shatakchi Sahay, B.Tech III Sem, B.Tech IT, won 3rd position, cash prize of Rs. 3000. from Sashido and incubation, KSUM, Kochi, Promotion of Innovation and Entrepreneurship cell of IEEE Kerala hosted Innovation-A Rural Development Hackathon. The hackathon was conducted online, at the national level on 1st March and 2nd March, 2020. The finalists had to present their ideas and product prototypes in front of a panel of judges.

Mr. Revels 2020

Mr. Aryan Chandwani, VII Sem, B.Tech IT, won "Mr. Revels 2020" in the annual cultural Revels Festival of MIT held on 4rd to 7th March, 2020.
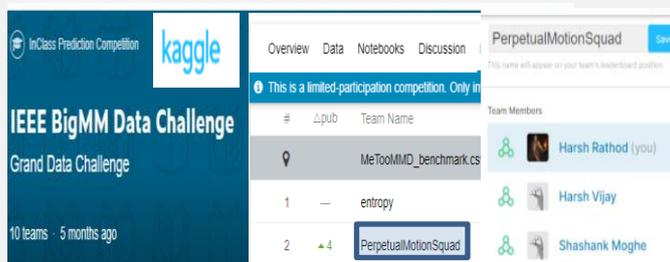
Kaggle Competition

Mr. Harsh Rathod, III Sem, B.Tech IT, and team were second on the leaderboard for Kaggle competition, IEEE BigMM 2020, Grand challenge (BMGC). The completion was active from April to July 2020. The team also published a paper titled "Stance Classification with Improved Elementary Classifiers using Lemmatization" in IEEE Conference.

MIT COVID-19 CHALLENGE

Ms. Praseedha Praveen Kalbhavi, III Sem, B.Tech CCE, along with her team, participated in "MIT COVID-19 CHALLENGE: Hack4theFuture" organized by the Massachusetts Institute of Technology from 6th November 6 to 8th November, 2020. It was a 48-hour virtual event and her team "XtressCare", which comprises 5 sophomores from MIT, emerged as one of the winners of this global challenge.

Scholarship recipient

Ms. Prakriti Parihar, VII Sem, B.Tech CCE, is awarded Grace Hopper Celebrations of women in computing India 2020 student Scholarship.

Sports

Mr. Swapnil Samanta, VII Sem, B.Tech CCE, was part of MIT-B team which won second prize in the Inter-MAHE Tennis Tournament held on 28th and 29th February, 2020 at the Recreation Centre in the Manipal Institute of Technology (MIT) Campus. They won over KMC Mangalore in a semifinal match.

Mr. Shrey Deshmukh, III Sem, B.Tech CCE, participated in Revels 2020 Athletics held from 4th to 7th March, 2020. He was awarded "Best Athlete Male Award of Revels'20" and won 1st prize in 800m Men, 1st in 5000m Men and 2nd in 1500m Men.

He participated in outstation competition for the Armed Forces Medical College fest 'Silhouettes' was held in Pune from 19th February to 23rd February 2020. Various colleges across India had come to participate in the Track and Field events. He won 3rd place in 1500m Men.

He participated in Manipal Marathon 2020 which was held on 9th February, 2020. He won 3rd place in 10km event MAHE Male Student Category.

Mr. Siddharth Karthikeyan, III Sem, B.Tech CCE, represented MIT Athletics Team in a 4x400m relay in Silhouettes, National Level Cultural and Sports Fest, AFMC Pune, conducted from 19th February to 23rd February 2020 and won second prize

Ms. Krithika M. Pai, V Sem, B.Tech CCE and **Ms. Avitha Shetty**, V Sem, B.Tech IT, were part of the MIT Badminton Team, which won Runners-up Trophy in the Revels Cup held at MIT Manipal during 4th March to 7th March 2020.

There is no medicine like hope, no incentive so great, and no tonic so powerful as expectation of something tomorrow.......Orison Swett Marden