MESSAGE FROM DEPARTMENT CHAIR

It gives me immense pleasure to present the July issue of our half-yearly E-newsletter. We have a series of events and activities in every semester which has continued to enhance the teaching-learning and research perspectives of the department. I congratulate all faculty members, students and alumni for the achievements and contributions they have made towards the department and the institute and I look forward to your support in future also. Wish you a great semester ahead.

- Dr. Ashalatha Nayak

Faculty Mentor

Dr. Srikanth Prabhu

Editor- in-Chief

Ms. Vidhya V.

Editorial Team

1. Mr. Ashwath Rao B.

2. Mr. Govardhan Hegde

3. Ms. Rajashree Krishna

4. Ms. Priya Kamath

6. Dr. Radhakrishna Bhat

7. Ms. Vidya Prabhu

8. Ms. Shana Ailene

DEPARTMENT EVENTS

SABRE TECHNOLOGIES | INDUSTRIAL ENGAGEMENT TALK FOR M. TECH STUDENTS

The Department in association with the Sabre Travel Technologies Pvt. Ltd organized an online industrial engagement talk for M.Tech students on 31st January 2022. The session provided a brief overview of Sabre Technologies and the benefits of industrial engagement program offered to the students.

MULESOFT | INDUSTRY ACADEMIA COLLABORATION FOR TRAINING AND CERTIFICATION

The Department in association with Salesforce organised an online information session on Mulesoft and its training and certification programme on 25th February 2022. The company aims to provide free training and certification on Mulesoft for the faculty members and the students. The company also plans to introduce few electives in the B.Tech and M.Tech computer stream programmes.
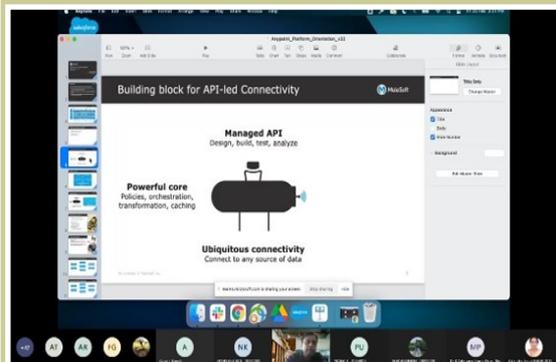
WORKSHOP ON NBA CO-PO ATTAINMENT LEVEL

The Department organized a half-day slot-wise faculty workshop on CO-PO attainment calculation from 13th to 14th June 2022. The workshop provided an awareness on calculation and data entry of CO-PO attainment for theoretical and laboratory subjects. The workshop was delivered by Ms. Shwetha Rai and Ms. Roopashri Shetty.

SUMMER TRAINING PROGRAM

A summer training program was organized under the aegis of MAHE Student Research Forum. In this regard, the department has conducted an online training program titled "PYTHON PROGRAMMING " from 27th to 1st July 2022. A total of 132 participants from various colleges under MAHE have attended the workshop. The event was coordinated by Dr. Narendra.V.G and his team.
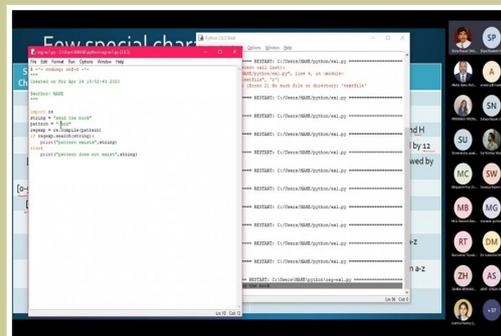
Ph.D. AWARDEES

♦ Mr. Anup Bhat B has been awarded a doctoral degree by MAHE, Manipal for his thesis titled "Design and Development of Efficient Algorithms for Mining High-utility Itemsets" under the guidance of Dr. Harish S V. and Dr. Geetha Maiyya.

♦ Ms. Diana Olivia has been awarded a doctoral degree by MAHE, Manipal for her thesis titled "Prediction of Clinical Status and Triaging in Mass Casualty Incidents using QoS aware Routing Protocol and Optimization Framework" under the guidance of Dr. Ashalatha Nayak and Dr.Mamatha Balachandra.

♦ Mr. B.Kishore has been awarded a doctoral degree by Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya, Kanchipuram for his thesis titled ""Local Based Approaches for the Classification of Texture Images" under the guidance of Dr. V. Vijaya Kumar, Dean, Anurag University, Hyderabad.

ALUMNI MATTERS

♦ Mr. Keshav Goyal (2018), Executive Director,, Shakun Industries, has been recognized amongst the Top 100 People's Manager in India by Great Manager Institute (GMI) in association with Forbes on 25th January 2022.

♦ Synapsica, the start-up launched by Ms.Meenakshi Singh (2009) emerged as the winner of NASSCOM Emerge50 Award 2021. The startup has built radiology workflow solutions using AI, Computer Vision, Natural Language Procesing and Distributed Computing.

♦ Mr. Amit Srivastav (1997) has been elevated as Head of Large Corporate Banking, Bank of India, Chennai. .

♦ Mr. Atul Batra (1993) has been listed in the "TOP 20 CTOs of India" by Analytics Insight Private Limited. He is also serving as the member of NASSCOM executive council since 2017.

STUDENT ACHIEVEMENTS

ADITYA PRADHAN RECEIVES BEST PAPER AWARD

The paper titled "Acute-on-Chronic Liver Failure Mortality Prediction using an Artificial Neural Network" by Aditya Pradhan, has been selected as one of the best papers of 2021, published in Scopus Indexed Quartile 1 - Engineered Science Journal. He worked under the mentorship of Dr. Dasharathraj K Shetty, Associate Professor, Humanities & Management.

STUDENTS SELECTED FOR GOOGLE WOMAN IN ENGINEERS PROGRAM

Aastha Chakraborthy got selected to a 2-year prestigious woman engineers program, offered by TalentSprint and supported by Google.

WON 2ND POSITION IN GOOGLE GIRL HACKATHON

Rhea Adhikari has grabbed the 2nd Position nationally at the Google Girl Hakathon conducted by Google India. The team took up the problem statement "Digital Literacy and Assistance for the Elderly" and developed an in-app solution "In Touch", with custom object detection and voice overlays to help acclimatize Senior Citizens to the ever evolving technology rumble.

GUINNESS WORLD RECORD AWARDEE

A Guinness world record has been set by first year student Sanatan Ganesh Shenoy, under the most birth dates memorized category. He successfully memorized 24 random dates and fictional names in 2 minutes in July.

STUDENT WINS BEST INTERN AWARD

Nikhitha Kamath got best intern award for her internship in the Infineon Technologies during January to June 2022 .

STUDENT TEAM WINS 2ND PRIZE IN WORLD ENDURANCE CHAMPIONSHIP

Mr. Gitansh Kaushik along with his team "redrabbitracers" has represented India internationally in motorsports on 27th April 2022 and stood 2nd in the category at the World Endurance Championship held at the Dubai Kartdrome.

FIRST RUNNERUP IN HACKATHON

Shyam Sundar Bharathi and Ajay Rajendra Kumar, won First Runner Up in the 'Transfusion Medicine Hackathon 2022' organized by organized by Asian Association of Transfusion Medicine – India Chapter in association with IHBT, KMC, Manipal and Innovation center, MAHE, Manipal. The team developed an app titled "Smart Donor" which acts as a virtual smart card for blood donors and makes the donation process flawless and intuitive.

MIT STUDENT GETS U.S. PATENT

Mr. Ningombam Aryamann Singh and his team has received U.S. patent for the invention titled "Smart Earbud device of an earphone". This technology provides a smart earbud device including a first bud and a first base.

SECOND PRICE IN FORMULA AI HACK 2022

The student team "MIT Boys" comprising of Hariharan B (CSE), Rohan Prasad (CSE), ,Sankeerth Sankar(CCE), Gautam Prabhu (CCE), and Ankush Nath (IT) secured global second place in Formula AI Hack 2022, an online hackathon conducted , by Hackmakers and sponsored by Oracle Redbull Racing from 18th to 22nd February 2022.

MANY FEATHERS TO HIS CAP

Sohom Datta has been awarded 500USD by Mozilla as a part of the Mozilla Client Bug Bounty Program for reporting an issue in Firefox's Gecko browser engine. He was awarded 1000 USD by Google on April 1st as part of the Chrome Vulnerability Rewards program for finding and reporting CVE-2022-1146, a security issue in Chrome's Blink rendering engine. He has also reported CVE-2022-25851, a high severity DoS attack issue to snyk.io. He was selected as a Google Summer of Code contributor for 2022.

FACULTY ACHIEVEMENTS

◆ Dr. Narendra V.G, Mr. Ashwath Rao B and Ms. Musica Supriya received a funding support to execute National Language Translation Mission funded by Department of Electronics and Information Technology.

◆ Dr.Srikanth Prabhu, in collaboration with the research team from Murray State University, has developed a machine learning model to predict the remaining useful life of physical devices and published their paper in IEEE Big Data 2021 conference. He is collaborating with Dr. Riyaz Ahmed from National Forensic University on facial analysis. He has also got elected as the Joint Secretary of IEEE (CS), Bangalore section, EXECOM.

◆ The faculty members have published fourty eight research papers in Scopus indexed journals and conferences during January to June 2022.

◆ Dr. Manjunath K N received a travel grant of 1170 USD under Carl storm under represented minority fellowship from National Institute of Health, USA to present their research paper in Gordon Research Conference at Maine, USA. He was also specially invited by the Residence of France in India, French embassy office in New Delhi to take part in 35th anniversary celebration of Erasmus+ programs in India. He was a resource person for a National level online FDP on recent advancements in Medical Technology. He also delivered a webinar on searching the right place for publication as part of IEEE Education week.

◆ Dr. Mamatha Balachandra received certificate of appreciation from Inventrom Pvt. Ltd (Bolt IoT) for her efforts taken as a college representative and work done towards encouraging student internships and improving industry ties.

◆ Mr. Amitkumar Gundad, an Apple certified trainer, has been invited by the Apple India office to deliver practice-oriented sessions on " iOS application development with Swift 4" in BMS Institute of Technology Bangalore.

◆ Dr. Vivekananda Bhat K and Mr. Ashwath Rao secured a grant worth $10200 and access to AWS cloud quantum computing facility from MeitY Quantum computing Applications Lab, Government of India in March 2022 for their proposal titled "COVID-19 diagnosis and assessment using quantum machine learning".
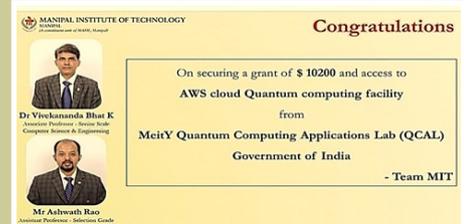
◆ The Samsung work-lets mentored by Dr. Srikanth Prabhu, Dr. Roopalaxmi , Mr. Govardhan Hegde and Mr. Ahamed Shafeeq , have been awarded Certificate of Excellence as part of the Phase-3 Samsung PRISM program held during June 2021 to January 2022. The teams are also rewarded with Amazon vouchers worth $900 for the work-lets based on multi-camera object tracking, frame stitching and time synchronization .

MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

VISION
Excellence in Technical Education through Innovation and Teamwork

MISSION
Educate students professionally to face societal challenges by providing a healthy learning environment grounded well in the principles of engineering, promoting creativity and nurturing teamwork.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VISION
Excellence in Computer Science & Engineering education through continuous learning, research and teamwork

MISSION
To impart excellent Computer Science & Engineering education for professional roles in a changing and challenging technological world, to advance knowledge through quality research in important emerging areas in the discipline and to build a strong relationship with industry, academia and society.

B.Tech Computer Science and Engineering

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

PEO1: Carry out engineering projects and develop new products in the area of Computer Science and Engineering and pursue higher studies.

PEO2: Innovate and be creative in the profession; apply analytical skills and demonstrate research capabilities in the field of computer science and engineering.

PEO3: Work in multidisciplinary environments and be responsive to the changing needs of the society.

PEO4: Communicate effectively, display leadership skills, and demonstrate professionalism.

PEO5: Engage in lifelong learning, apply the knowledge judiciously and remain continuously employable.

PROGRAM OUTCOMES (PO)

Engineering Graduates will be able to:

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: 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.

PO4: 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.

PO5: 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.

PO6: 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.

PO7: 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.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: 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.

PO11: 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.

PO12: 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.

PROGRAM SPECIFIC OUTCOMES (PSO)

PSO1: Analyse and solve real world problems by applying a combination of hardware and software.

PSO2: Formulate & build optimised solutions for systems level software & computationally intensive applications.

PSO3: Design & model applications for various domains using standard software engineering practices.

PSO4: Design & develop solutions for distributed processing & communication.

M.Tech Computer Science and Engineering

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

PEO1: To carry out projects and demonstrate design, analysis, and programming skills to solve computational problems in science and multidisciplinary engineering domain.

PEO2: Be actively involved in research and development and engage in lifelong learning leading to new innovations to meet the societal challenges.

PEO3: To take up a career in industry, academia or become successful entrepreneurs and excel as socially committed professionals by respecting ethical practices and maintaining integrity.

PEO4: To apply the knowledge of mathematics, research methodology and computer science and engineering education to pursue higher studies.

PEO5: To demonstrate leadership skills, teamwork and effective communication of the technical information and remain continuously employable.

PROGRAM OUTCOMES (PO)

PO1: An ability to independently carry out research /investigation and development work to solve practical problems.

PO2: An ability to write and present a substantial technical report/document.

PO3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO4: Apply problem solving skills and advanced concepts in Computer Science to breadth of topics in industrial applications.

PO5: Use mathematical foundations and research based knowledge for facilitating novel contributions to contemporary areas of computer science.

M.Tech Computer Science and Information Security

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

PEO1: To carry out projects and demonstrate design, analysis, and programming skills to solve computational problems in security and multidisciplinary engineering domain.

PEO2: Be actively involved in research and development and engage in lifelong learning leading to new innovations to meet the societal challenges.

PEO3: To take up a career in industry, academia or become successful entrepreneurs and excel as socially committed professionals by respecting ethical practices and maintaining integrity.

PEO4: To apply the knowledge of mathematics, research methodology and computer science and information security education to pursue higher studies.

PEO5: To demonstrate leadership skills, teamwork and effective communication of the technical information and remain continuously employable.

PROGRAM OUTCOMES (PO)

PO1: An ability to independently carry out research /investigation and development work to solve practical problems.

PO2: An ability to write and present a substantial technical report/document.

PO3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO4: Apply problem solving skills and advanced concepts in Computer Science and Information Security to breadth of topics in industrial applications.

PO5: Use mathematical foundations and research based knowledge for facilitating novel contributions to contemporary areas of cryptography and information security.