



MITS
MADANAPALLE

**MADANAPALLE INSTITUTE OF
TECHNOLOGY & SCIENCE**
(UGC-AUTONOMOUS INSTITUTION)

**Report on International Online Faculty Development Programme
Organized by Department of Computer Science & Engineering
On “Emerging Tools & Techniques in Machine Learning and Data Science”
in Association with Computer Society of India (CSI)
5th February 2024 to 10th February 2024**



Report Submitted by: Dr. R.Nidhya, Professor, Department of Computer Science and Engineering

Coordinators : Mr T Thangarasan Assistant Professor/CSE, Mr J Nagaraj Assistant Professor/CSE

Total no. of Participants : 225

Mode of Delivery: Online Mode through Microsoft Teams

The Programme started at 10 AM with a welcome address by Dr R Kalpana, Professor & HoD, Department of Computer Science & Engineering, MITS. The presidential address was delivered by Dr C Yuvaraj Professor & Principal, MITS. Dr Goutam Chakraborty Distinguished Professor & Dean/CSE, MITS were addressed the gathering. Then Chief Guest of the day Dr R Arun Kumar, Senior Lecturer in Digital Forensics & Cyber Security, University of South Wales, United Kingdom was introduced by Dr R Nidhya. In welcome address, HoD mam highlighted FDP participants from various states of nation as well from foreign countries also. Then the session took over by the chief guest for the session.

Day 1: 05.02.24 (Monday)

Resource Person: Dr R Arun Kumar, Senior Lecturer in Digital Forensics & Cyber Security, University of South Wales, United Kingdom

Topic : Large Language Model(LLM) Security & Adversarial Attacks

The resource person started the session by extended his thanks to Management, Principal, HoD, Organizers. He started explaining about LLMs have become increasingly popular because they have broad applicability for a range of NLP task. The various security and adversarial attacks of LLM have been discussed in detail. He clearly shown demo of how to use online tool for preventing possible attacks on LLM to the participants. The session ended with Q&A session with participants.

Day 2: 06.02.24 (Tuesday)

Session 1:

Resource Person: Dr D Pavithra, Associate Professor/IT, Dr NGP Institute of Technology

Topic : Machine Learning Using R Programming

Day2 first session was handled by Dr D Pavithra. Dr R Nidhya introduced her to the participants and session was continued by the Resource Person. She explained about basics of R Programming and how to implement Machine Learning applications using R. She started explaining the mathematical models involved in this process very clearly with some demo. Finally, the session was concluded with effective Q&A session with the participants.

Session 2:

Resource Person : Dr R Nidhya Professor/CSE, MITs

Topic : Data Visualization Using Julia

Day2 second session was handled by Dr R Nidhya. Mr T Thangarasan introduced her to the participants and session was continued by the Resource Person. she started explaining the basic difference between other languages and Julia. She also explained the installation of Julia and basic concepts of Julia programming. Later she explained the different types of plots using Julia with demo. Finally, the session was concluded with effective Q&A session with the participants.



Day 3: 07.02.2024 (Wednesday)

Resource Person: Dr N Yuvaraj, Professor& Head – CSE, KPR Institute of Engineering & Technology, Coimbatore

Topic : Impact of AI in Interdisciplinary Applications

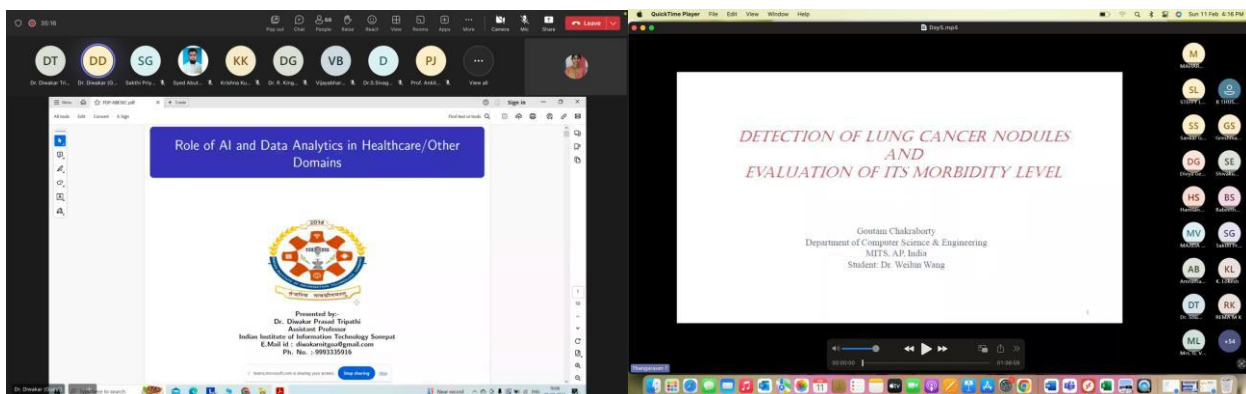
Day3 session was handled by Dr N Yuvaraj. Dr R Nidhya introduced him to the participants and session was continued by the Resource Person. He started the session by explaining what AI is and how its grooming in current scenario and what are all the methods and techniques available in that field to do research. He explained major three applications of AI in smart building and smart city related applications. Finally, the session concluded with effective Q&A session with the participants.

Day 4: 08.02.2024 (Thursday)

Resource Person: Dr Diwakar Tripathi, Assistant Professor/CSE, IIIT Sonapat

Topic : Introduction of Feature Engineering and its Application in Healthcare/Other Domains

Day4 session was handled by Dr Diwakar Tripathi. Dr R Nidhya introduced him to the participants and session was continued by the Resource Person. He started the session by explaining what are the basic concepts of feature extraction. He explained how to extract the features from input for learning process and he explained the complete mathematical concepts behind the feature engineering. He also demonstrated the applications pf feature engineering in healthcare and industrial domain with some use cases. Finally, the session concluded with effective Q&A session with the participants.



Day 5: 09.02.2024 (Friday)

Session 1:

Resource Person : Dr Goutam Chakraborty Distinguished Professor and Dean, MITs

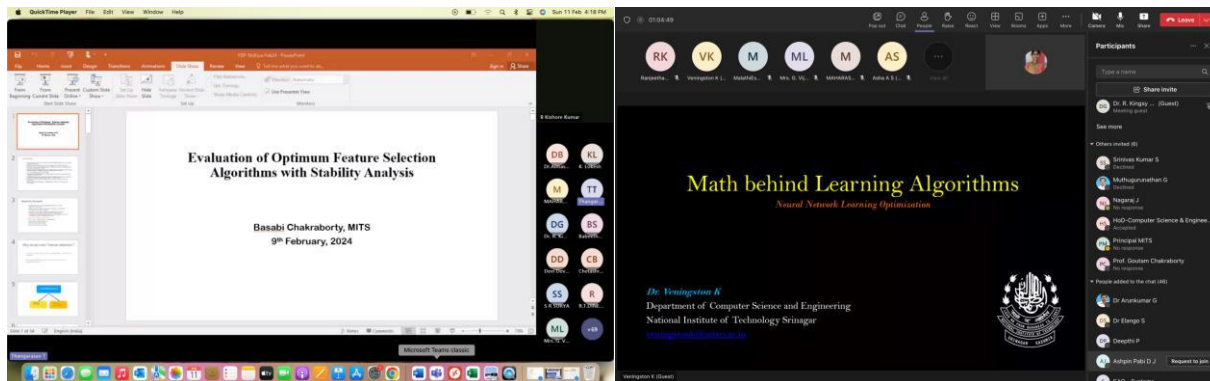
Topic : Detection of Lung Cancer nodules and Evaluation of its Morbidity Level

Day2 second session was handled by Prof Goutam Chakraborty. Mr T Thangarasan introduced him to the participants and session was continued by the Resource Person. He started explaining the difference between DL and ML. He also clearly explained when to choose ML and when to choose DL for automation process. He also explained how to detect Lung Cancer nodules using ML algorithms to the participants along with its mathematical modelling and demo. He also listed all the possible research opportunities available in the same area. Finally, the session was concluded with effective Q&A session with the participants.

Session 2:Resource Person: Prof. Basabi Chakraborty, Professor and Dean / CST, MITs

Topic : Evaluation of Optimum Feature Subset Selection Algorithms with Stability Analysis

Day2 first session was handled by Prof Basabi Chakraborty. Mr T Thangarasan introduced her to the participants and session was continued by the Resource Person. She explained about importance of feature selection algorithms and what is the need of optimization in the same. She started explaining the mathematical models involved in this process clearly with some demo. Finally, the session was concluded with effective Q&A session with the participants.



Day 6: 10.02.2024 (Saturday)

Resource Person: Dr. K Veningston Assistant Professor/CSE, NIT Srinagar

Topic : Mathematics Behind Learning Algorithms

Day 6 session was handled by Dr K Veningston. Dr R Nidhya introduced him to the participants and session was continued by the Resource Person. He started the session by what is importance of understanding mathematical models behind algorithms. He handled the session with theoretical and practical demo as well. He explained the different types of algorithms and how is connected to the mathematical concepts and how much it's important to concentrate on this field. He clearly explains the possible research opportunities in the field and also, he invited the participants to do more collaborative research. Finally, the session concluded with effective Q&A session with the participants.

The valedictory talk was given by Dr R Kalpana HoD/CSE and Finally session was concluded by vote of thanks delivered by Dr R Nidhya, professor/CSE. She extended her thanks to Management, Principal, HoD, colleagues, all resource persons and participants for the successful completion of the event.

Summary of FDP:**Total number of Participants : 227****Foreign participants : 02**

- Oman : 01
- Saudi : 01

Indian Participants : 225

- Andhra Pradesh : 19
- Karnataka : 03
- Kerala : 92
- Tamilnadu : 86
- Maharastra : 07
- Telangana : 08
- Utterpradesh : 01
- Delhi : 01
- Madhya Pradesh : 01
- Pondicherry : 07

Outcome of the FDP:

- Participants gained a deeper understanding of the latest tools and techniques in machine learning and data science. This includes knowledge about emerging algorithms, frameworks, and technologies used in these fields.
- The FDP provided practical, hands-on experience with the tools and techniques covered. Participants could gain proficiency in applying these tools to real-world problems, fostering a more practical understanding.
- Faculty members learnt how to integrate the emerging tools and techniques into their teaching curriculum. This could involve creating new courses, updating existing ones, or incorporating relevant case studies and projects.
- The FDP enhanced participants' teaching methodologies, ensuring they can effectively convey complex concepts related to emerging tools and techniques to their students.
- Faculty members gained professional development opportunities through exposure to the latest advancements, making them more competitive in their respective fields.