

Report on
International Online Faculty Development Programme
Organized by
Department of Computer Science & Engineering
on
“Emerging Trends & Research Opportunities in Computer Science”
in Association with Computer Society of India (CSI)
31st October 2022 to 5th November 2022

 MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE (UGC-AUTONOMOUS INSTITUTION) www.mits.ac.in Madanapalle-517325, Annamayya Dist., Andhra Pradesh					
 Department of Computer Science & Engineering Organizing One Week Online International Faculty Development Programme on “Emerging Trends & Research Opportunities in Computer Science” In Association with Computer Society of India (CSI) Student Chapter	31/10/2022 to 05/11/2022				
 Dr B Surendiren Associate Professor / CSE National Institute of Technology Karaikal	 Dr M Brindha Assistant Professor/CSE National Institute of Technology Tiruchirappalli	 Dr. Sivaraman Eswaran Senior Lecturer, Computing (Cyber Security) Department of Electrical and Computer Engineering Curtin University, Malaysia	 Ms. Manjusha Radhakrishnan Data Scientist Social Wellbeing Agency Wellington, New Zealand		
 Prof. Goutam Chakraborty Distinguished Professor and Dean / CSE MITS	 Dr. Basabi Chakraborty Professor & Dean / CST MITS	 Dr Mahaboob Basha Professor/CSE MITS	 FPD Registration Link: shorturl.at/FPTU8 Registration Amount: Rs 200 (For Indian Participants) \$ 10 (For Foreign Participants)		
Chief Patron Dr.N.Vijaya Bhaskar Choudary Secretary & Correspondent	Patron Mrs. N. Keerthi Executive Director	Programme Chair Dr.C.Yuvaraj Principal	Co-Chair Prof. Goutam Chakraborty Distinguished Professor & Dean Dr R Kalpana Professor & Head Dept. of CSE	Convenor Dr R Nidhya Professor/CSE Ph: +91 9894780297 drnidhyar@mits.ac.in	Co-ordinators Dr D J Ashpin Pabi Assistant Professor/CSE Dr V Arun Professor/CSE

Report Submitted by:

Dr. R.Nidhya, Professor, Department of Computer Science and Engineering

Coordinators : Dr D J Ashpin Pabi Assistant Professor/CSE

Dr V Arun Professor/CSE

Total no. of Participants : 72

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 P Ramanathan, Vice Principal Academics, MITS & Dr Goutam Chakraborty Distinguished Professor & Dean/CSE, MITS were addressed the gathering. Then Chief Guest of the day Dr B Surendiren Associate Professor/CSE, NIT Puducherry was introduced by Dr D J Ashpin pabi. 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: 31.10.22 (Monday)

Resource Person: Dr B Surendiren Associate Professor/CSE, NIT Puducherry

Topic :AI in Healthcare & Tools for Research

The resource person started the session by extended his thanks to Management, Principal, HoD, Organizers. He started explaining about the role of Artificial Intelligence in Health care domain and how its giving impact in securing human health in better way. And also, he discussed about the research challenges available in the field in detail. Followed by this session he also discussed about the various research tools that are useful for research especially article writing tool MANDLEY. He cleared shown demo of how to use this tool for research purpose to the participants. The session ended with Q&A session with participants.



Day 2: 01.11.22 (Tuesday)

Session 1:

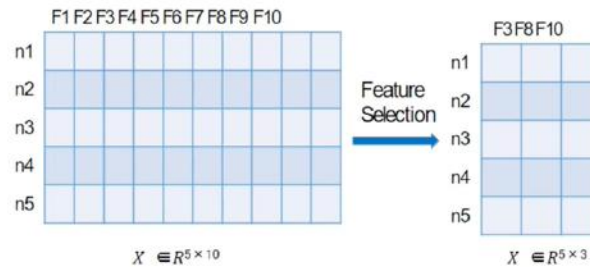
Resource Person: Prof. Basabi Chakraborty, Professor and Dean / CST, MITS

Topic : Fusion of Machine Learning & Quantum Computing for Feature Subset Selection

Day2 first session was handled by Prof Basabi Chakraborty. Dr R Nidhya introduced her to the participants and session was continued by the Resource Person. She explained about how to fuse the Machine Learning concept and Quantum Computing for better feature selection process. 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.

Feature Subset Selection

- 1 Selection of subset of relevant features
 - 2 All features are not important
 - 3 Irrelevant and Redundant features
 - 4 Discriminatory features
- Why Feature Selection:
- More features need more samples for successful training
 - Reduce overfitting and training time
- 5 Improve performance of the system



- Two important tasks:
- › Evaluation of features
 - › Find optimum feature subset

3 / 77



Session 2:

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

Topic : Different facets of Object Detection

Day2 second session was handled by Prof Goutam Chakraborty. Dr R Nidhya introduced him to the participants and session was continued by the Resource Person. He started explaining what object detection is and what are the different methods of detecting object. He also explained the object detection facets 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.

A SHORT HISTORY OF IMAGE ANALYSIS AND PRESENT STATUS

- Optical Printed Character Recognition (Solved)
- Handwritten Character Recognition (Solved)
- Authentication Problems like
 - Fingerprint recognition (Solved)
 - Face recognition (Solved)
- Object Detection (Ongoing Research)
 - *Identifying multiple objects and respective locations*
 - *Medical Image Analysis or CAD (Computer Aided Diagnosis) ***
- Image Annotation (Ongoing Research)

Object Detection , image Annotation , CAD

2



Day 3: 02.11.22 (Wednesday)

Resource Person: Dr M Brindha, Associate Professor/CSE, NIT Tiruchirappalli

Topic : Research Challenges in Computer Vision

Day3 session was handled by Dr M Brindha. Dr D J Ashpin Pabi introduced her to the participants and session was continued by the Resource Person. She started the session by explaining what computer vision is and how its grooming in current scenario and what are all the methods and techniques available in that field to do research. She conducted a small interactive quiz in between her session for active participation of faculty members. She did one demo for computer vision-based project for better understanding. Finally the session concluded with effective Q&A session with the participants.

Research Challenges in
Computer Vision

M. Brindha
Associate Professor
Department of CSE
NIT, Trichy

Activate Windows
Go to Settings to activate Windows.

Vimalath
Dr. D. J. Ashpin Pa...
Dr. G. Kapane
surya veerasamy
Ms. scema v
bavaneswari moh...
Viswanathan R V
Mr. Jastheep R
Sathishkumar J
Jane Nithya
N.Amutha
Dr. Manjula C
K Himanatha
Brindha Manjula
Vidyalina (Guest)
Appalani G
+8

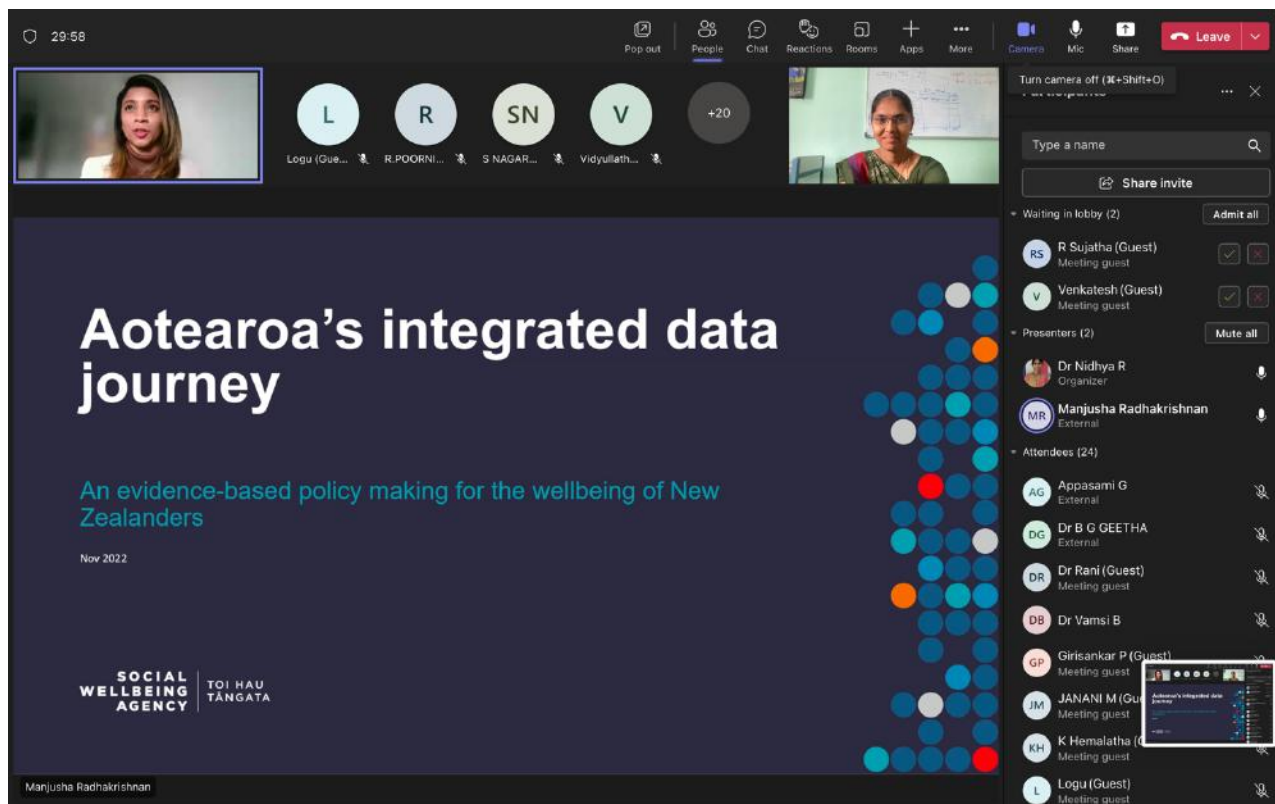
Day 4: 03.11.22 (Thursday)

Resource Person: Ms. Manjusha Radhakrishnan ,Data Scientist, Social Wellbeing Agency, Wellington, New Zealand

Topic : Aotearoa's Integrated Data Journey - An Evidence Based Policy Making for New Zealander's Wellbeing

Day4 session was handled by Ms. Manjusha R. Dr R Nidhya introduced her to the participants and session was continued by the Resource Person. She started the session by explaining how she became a data scientist in New Zealand. And she started explaining the problems that New Zealand government facing currently and she also given overview of what are the possible solutions they are proposing to the government. She has

discussed three major case study in her session. One is how to predict premature baby delivery using ML. Second one is predicting the water scarcity of New Zealand during upcoming summer season and last one is about Family harassment. Finally, the session concluded with effective Q&A session with the participants.

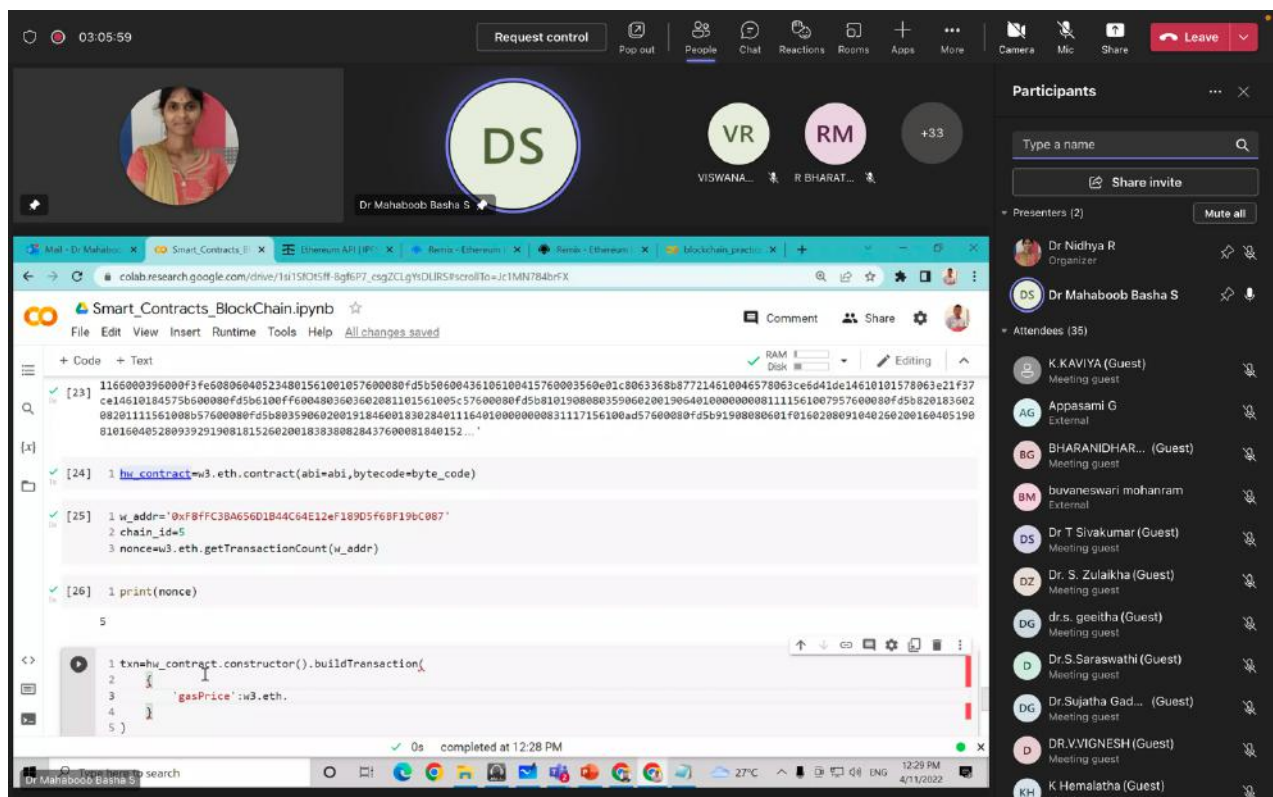


Day 5: 04.11.22 (Friday)

Resource Person: Dr Mahaboob Basha Shaik, Professor/CSE, MITS

Topic : Smart Contract Creation in Blockchain Using Python

Day5 session was handled by Ms. Manjusha R. Dr R Nidhya introduced him to the participants and session was continued by the Resource Person. He started the session by introducing what is block chain and how much it gives impact in today's digital world. He discussed in detail about the features of smart contract and he shown demo of how to create a smart contract in block chain using some dummy currency which is available for free of cost in online using Python. He also highlighted the importance of Python in smart contract creation. He clearly mentioned the possible research opportunities available in the same field. Finally, the session concluded with effective Q&A session with the participants.



Day 6: 05. 11.22 (Saturday)

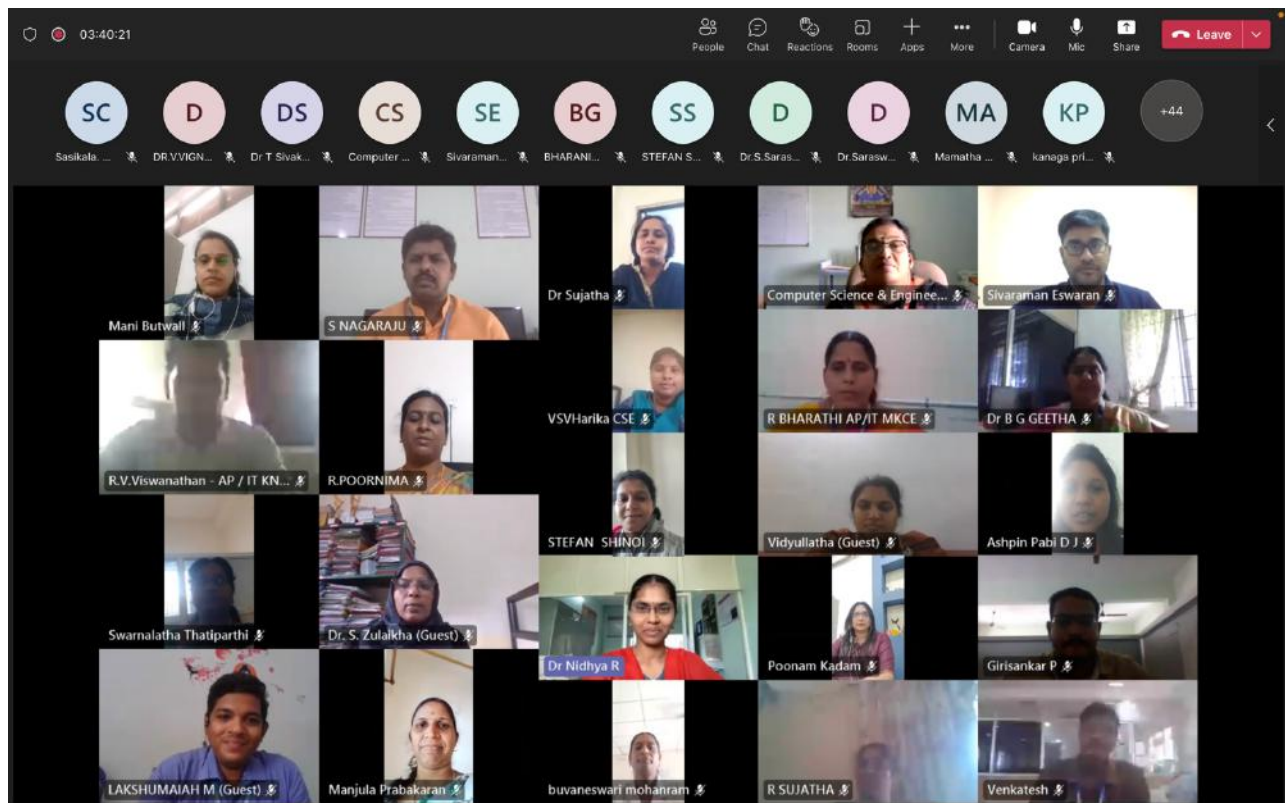
**Resource Person: Dr. Sivaraman Eswaran, Senior Lecturer, Computing (CyberSecurity)
Department of Electrical and Computer Engineering,
Curtin University, Malaysia**

**Topic : Cyber Threat Intelligence: Opportunities, Solutions and Research
Challenges**



Day 6 session was handled by Dr Sivraman Eswaran. Dr R Nidhya introduced him to the participants and session was continued by the Resource Person. He started the session by what is cyber intelligence with one small video. He handled the session with theoretical and practical demo as well. He explained the different types of cyber threats in current world and how much it's important to concentrate on this field. He shown demo of how to create the secure environment to our system using online opensource tool. He clearly explains the possible research opportunities in the field and also, he invited the participants to do more collaborative research with Curtin University. 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 : 72

Foreign participants : 03

- New Zealand : 01
- Saudi : 01
- Taiwan : 01

Indian Participants : 69

- Andhra Pradesh : 15
- Karnataka : 09
- Tamilnadu : 36
- Maharastra : 01
- Telangana : 06
- Utterpradesh : 01
- Rajasthan : 01