

4.12.2021

Maharaja Surajmal Institute of Technology
Department of Electronics & Communications Engineering
Report on one-week online FDP on
Recent Trends in Artificial Intelligence and Its Applications

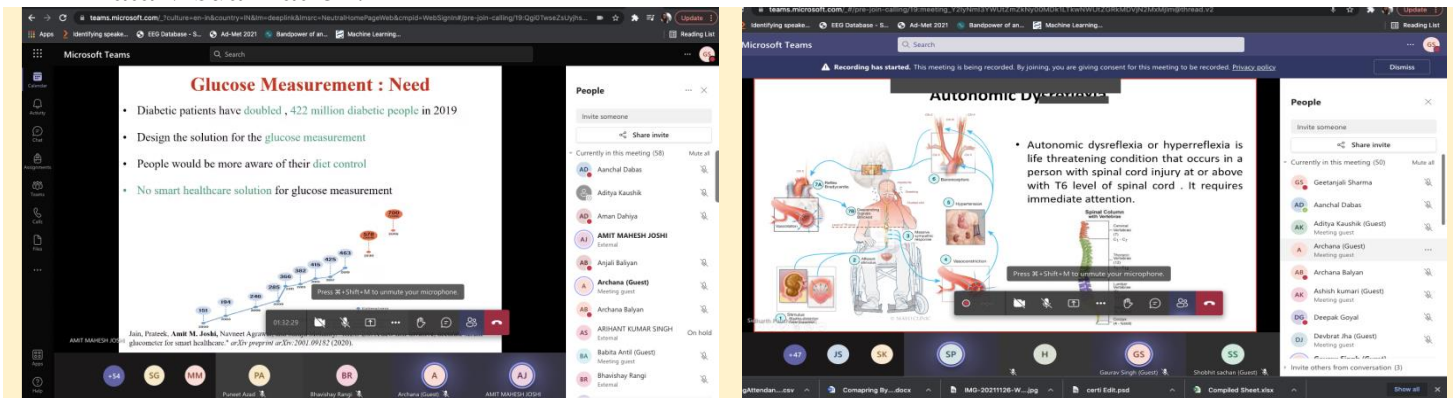
Department of Electronics and Communications Engineering (ECE), MSIT organized a one-week faculty development program (Online) on **Recent Trends in Artificial Intelligence and Its Applications** from November 29 to December 3, 2021.

AI has touched all the spheres of our life, be it Healthcare, Gaming, Finance, Data Security, social media, Travel & Transport or Automotive Industry. The increasing ability of machines in recent years to replicate or even supersede human abilities in complex tasks has been impressive. With increasing demands of AI in teaching curriculums also, there arises need for faculty to upgrade their knowledge. Keeping this in Mind a one-week FDP on Recent Trends in AI and its applications has been organised. The main objective of this FDP was to give exposure to participants from basics to recent trends and updates in the field of Artificial Intelligence, its significance in real world applications and to focus on upgradation of the knowledge and expertise of the participants with the Hands-on practice of various applications based on AI using Python.

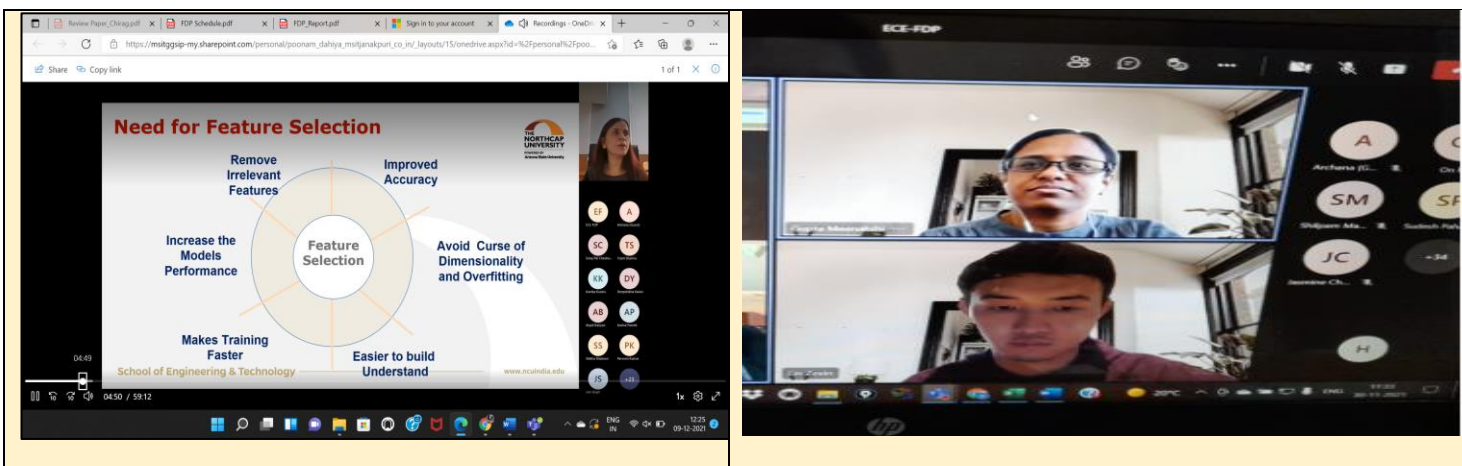
On the opening day, during inaugural session, **Col. B. Venkat**, Director, AICTE, graced the occasion as chief guest and **Prof T. Srinivas**, Indian Institute of Science, Bangalore, graced the occasion as guest of honour. They shared words of wisdom with the participants and expressed their thoughts on the topic.

Dr. Shaifali M. Arora, Convener- FDP, formally welcomed all the dignitaries and the participants. She described the importance of AI, objectives, and schedule of the FDP. The audience was then addressed by **Col. (Dr) Ranjit Singh**, Director, MSIT, delivered the opening remarks. He shared his valuable insights on the topic. **Er. Kaptan Singh**, Hon'ble President, SMES, highlighted the emergence and impact of artificial intelligence on human race. He mentioned about a book that he read in his childhood days, which discussed how machines will overtake humans in future. **Prof. Archana Balyan**, HOD, ECE Dept., discussed the importance of the topic and urged the audience for their active participation.

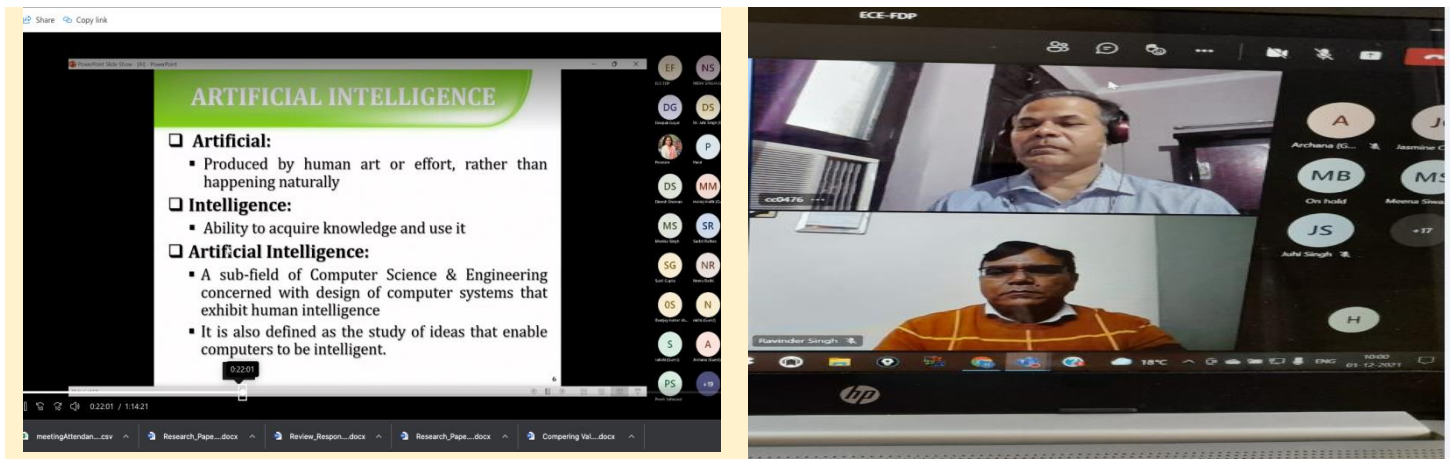
Nine eminent speakers from various parts of India and abroad were invited to share their knowledge on the topic. The session was conducted from 10:00am to 3:30pm every day on Microsoft Teams. The expert lecture on day1 started at 11:30am after the tea break, which was delivered by **Dr Amit Joshi**, Assistant Professor from MNIT, Jaipur. He discussed the role of artificial intelligence in smart healthcare as Glucose measurement in IoMT framework, EMG based prosthetic, EEG based depression detection etc. He also enlightened us about the opportunities to work in the field of AI and healthcare. After the first session, practical session was conducted by **Mr. Ravikant Tyagi** from Brain Mentor Pvt. Ltd. He explained Python programming setup, Basic syntax, Numpy, panda and Data visualization.



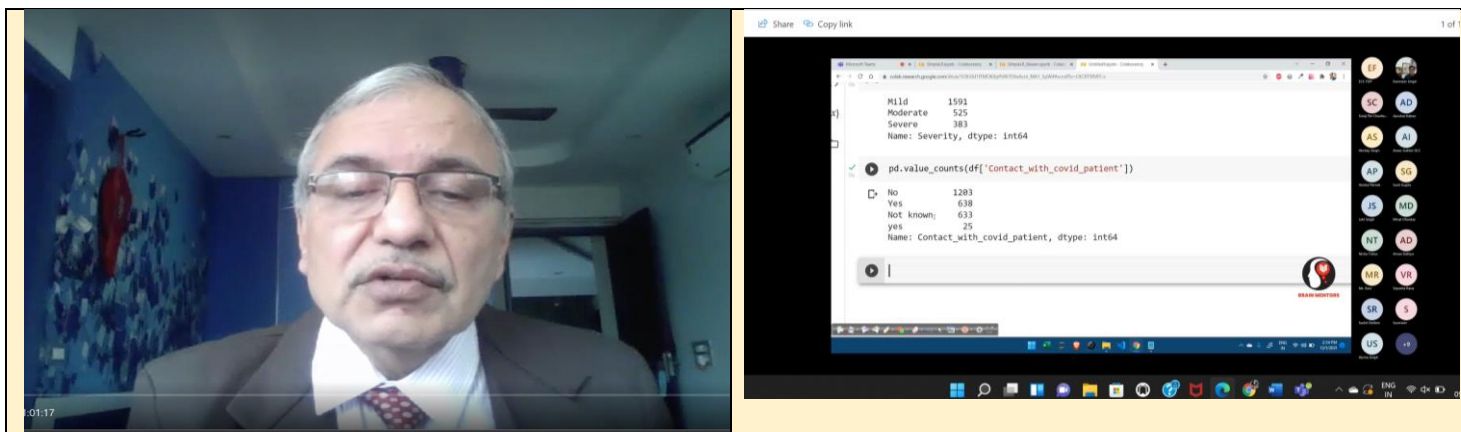
On day 2, first session of morning session was delivered by **Dr. Siddharth Pancholi**, Research fellow, Post Doc Purdue University, USA. He explained and shared some very recent research in collaboration with department of defence, USA on Autonomic Dysreflexia Detection using artificial intelligence and animal and human studies related to this. The talk in the second session of the day was delivered by **Dr Meenakshi Gupta and Dr Lin** who are currently associated with Rehabilitation Research Institute of Singapore, talked about Image Translation using Deep Learning Techniques. After this, data pre-processing of different signals was explained in practical session with hands on practice of python by Mr. Ravikant Tyagi.



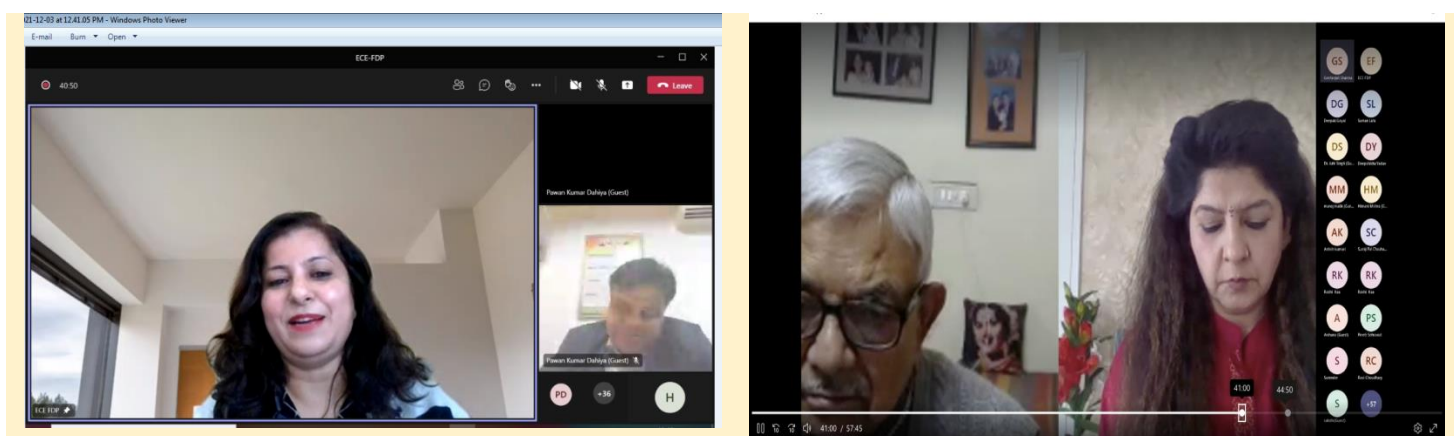
On day 3, first talk of morning session was delivered by **Dr. Vijandar Singh**, Professor, NSUT, New Delhi. He explained some very recent optimization methods used in artificial intelligence-based applications in instrumentation and Control. **Dr. Kavita Khanna**, Professor, Northcap University, Gurugram delivered the talk in the second session of the day. She discussed various feature selection techniques used in machine learning approaches. The practical session was consisting of hands-on practice of linear regression & logistic regression or other important classifiers, was also conducted by Mr. Ravikant in practical session.



On day 4, **Prof. Vineet**, NSUT, New Delhi delivered the first talk of the morning session wherein he discussed some very recent applications of artificial intelligence in engineering robotics. He had shown very interesting video on synchronisation of three Robots. Second talk of the day was delivered by **Dr. Archana Balyan**, Professor, MSIT, New Delhi. She had discussed methods and their implementation used in speech technology systems. Mr. Ravikant conducted the practical session on Deep learning, CNN and CNN-GRU. He discussed a case study related to COVID-19 and analysis of X-ray images for detection of lungs infection for COVID-19.



On day 5, **Dr. Navin Rajpal**, Professor, USICT, GGSIPU, New Delhi delivered the first talk of the morning session. He gave some valuable insights on a new branch of engineering- Artificial Intelligence & Robotics and its usefulness in social and technological development. Dr Pawan Dahiya, Professor, DCRUST, Murthal, Haryana was the expert for the second session of the day. He briefed the trends in the field of artificial intelligence and its applications from basics to recent development. He discussed about the industrial revolution 4 and inspired the participants to work more and more in this field and develop new products.



In the afternoon session on day 5, the FDP came to an end with online valedictory ceremony. **Prof Amita Dev**, Hon'able Vice Chancellor, IGDTU, Delhi graced the valedictory session as chief guest on December 03, 2020. She addressed the participants and shared her knowledge and vast experience on the topic and highlighted the importance of conducting FDP. She appreciated the management for sponsoring this event. She expressed her contentment for the management of MSIT that besides being private college, the management is providing all types of support be it in terms of funds for the growth of faculty. Dr Shaifali M. Arora, convener, FDP read the report of 5 days sessions of this faculty development program. She expressed her gratitude to the management and other authorities for supporting and sponsoring this FDP. She expressed thanks to all the expert speakers for their valuable lectures and suggesting many research opportunities to the participants where they can work upon. Hon'ble Chairman, **Sh. Kaptan Singh Ji** congratulated the organising team for successful completion of FDP and appreciated their efforts. **Prof. A.K. Singh**, Deputy director, MSIT delivered the closing remarks; he highlighted the importance and relevance of the topic in the current scenario. **Prof Archana Balyan**, HOD, ECE Dept, MSIT presented a vote of thanks to management, SMES for supporting the FDP, all the eminent speakers and esteemed participants for their contribution and involvement in the FDP.

Articulatory feature –based Pronunciation Models

Need : Improved model for co-articulation

Speech is represented as multiple stream of articulatory movements (Browman & Goldstein'92)

Feature	Value
APPROXIMATE POSITION	Labial
APPROXIMATE POSITION	Labiodental
APPROXIMATE POSITION	Dental
APPROXIMATE POSITION	Alveolar
APPROXIMATE POSITION	Postalveolar
APPROXIMATE POSITION	Retroflex
APPROXIMATE POSITION	Palatal
APPROXIMATE POSITION	Palatoalveolar
APPROXIMATE POSITION	Palatovelar
APPROXIMATE POSITION	Velar
APPROXIMATE POSITION	Uvular
APPROXIMATE POSITION	Glottal
APPROXIMATE POSITION	None

There were 103 enthusiastic participants in total, who took part in the 5-days online FDP. Microsoft Teams was the platform used for conducting the session. The registered participants were engaged in a special WhatsApp group and by email. The FDP received a lot of positive feedback from faculty members and research scholars from many universities of India and abroad. Dr Shaifali M. Arora, Convener, Dr Dinesh, Dr Poonam, Ms Geetanjali Co-conveners of FDP, successfully organised the FDP.

Dr Shaifali M. Arora
(Convener, FDP)