

FDP on “Machine learning using Python”: A Report

The Department of ECE, Maharaja Surajmal Institute of Technology (MSIT), organized a one week Faculty Development program (FDP) from 2nd March to 6th March, 2020. The FDP was organized for faculty of Engineering and Technology on “*Machine Learning with Python*”, a latest cutting –edge technology.

The FDP was organized in association with Brain Mentors Private Limited, Delhi. The programme commenced with an inaugural session on Day 1. A warm welcome was given to the resource persons, Mr Ravi Kant Tyagi and Mr. Anmol by Dr. Puneet Azad, H.O.D., Department of ECE and Prof. Poonam Bansal , Department of CSE, by giving them saplings. A welcome address was delivered by Prof. Archana Balyan, Department of ECE , Convener, who also shared the theme of the FDP to the gathering.

A total of 84 participants attended the FDP. The participants were from Maharaja Surajmal Institute of Technology and Maharaja Surajmal Institute, Delhi. The sessions were conducted by resource person, Mr. Ravi, corporate / institutional trainer in the field of Machine Learning from Brain Mentors Private Limited, Delhi. He handled the sessions for 5 days.

On Day 1, in session 1, the contents covered were *Introduction to Python* and *problem solving in Python*. Session 2 covered *pandas* for handling dataset, *Numpys* for using mathematics library and *Matplotlib* for visualization using *Jupyter* notebook. For each of the content, trainer explained the concept followed by implementation by participants.

On Day 2, session 1 and session 2 covered *Introduction to Machine Learning and its classification*. The sessions covered algorithms used for Machine learning for predictions. Confusion matrix and performance metrics for predictions like precision, accuracy and sensitivity on datasets from Kaggle etc. The algorithms such as linear regression, Logistic regression and Support Vector Machine were implemented on python by participants.

On Day 3, session 1 and session 2 covered topics such as *Image processing, face recognition and introduction to deep learning*.

On Day 4, topic of Deep learning was continued in session 1 and the concept of feed forward and back propagation, Text Analysis /NLP using Tensor flow and sentiment analysis using Tensor flow was taken up by the trainer in the session 2.

On Day 5, advanced topics such as Long Short term memory and Generative Adversial Networks (GAN) were covered.

All the algorithms covered through FDP were also explained through complete hands- on session for more clarity. The sessions were an amalgam of both practical (90%) and theory (10%) lessons and also had a flavor of training.

Dr. Puneet Azad, H.O.D., ECE presented a memento to Mr. Ravi Kant Tyagi, trainer , Brain Mentors Pvt. Ltd. as a mark of appreciation for holding the sessions. Prof. Archana Balyan, Dept. of ECE presented a memento to Ms. Ekta, Managing Director, Brain Mentors Pvt. Ltd. as a token of appreciation for training the participating faculty.

A valedictory function was organized on the last day which was graced by the presence of Honorable Sh. Ajit Singh Choudhary ji, Secretary, SMES and Respected Prof. (Dr.) K.P. Choudhary, Director, MSIT. The Director, MSIT delivered a talk in which he spoke about the importance and significance of conducting FDPs in developing and enhancing knowledge and skills of faculty. He also said that latest Machine Learning algorithm skills and other newly emerging techniques in the area of engineering and technology be made a part of the curricula in engineering courses. This will make the students make them more industry – ready.

A talk was given by Honorable Sh. Ajit Singh Choudhary ji, Secretary, Surajmal Memorial Education Society (SMES) who stressed on the need for using the acquired knowledge for the benefit of students in every possible way. Prof. (Dr.) Archana Balyan, Convener, gave a brief summary of the entire FDP, wherein she highlighted the various topics covered during the FDP and also she thanked the Management, SMES and the Director, MSIT for providing all required support for conducting the FDP. Certificates of participation were distributed to the participants by the dignitaries. The programme ended with a vote of thanks presented by Dr. Sudesh Pahal, Co-convener.



Dr. Puneet Azad, H.O.D., ECE welcomes the resource person from Brain Mentors pvt. Ltd., Delhi



Prof. Poonam Bansal, CSE welcomes Mr. Ravi Kant Tyagi , the resource person from Brain Mentors pvt. Ltd., Delhi



Prof. Archana Balyan , ECE delivering welcome address in the inaugural session



A session in progress being conducted by Mr. Ravi Kant Tyagi, Trainer from Brain Mentor Pvt. Ltd., Delhi



A session in progress



Participants receiving certificates from Hon'ble Sh. Ajit Singh Chaudhary ji, Secretary ,Surajmal Memorial Education Society and Prof. (Dr) K. P. Chaudhary , Director , MSIT



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Participants with their certificates



Dr. Sudesh Pahal, Associate Profesor, ECE , Co-convener delivering vote of thanks

Report prepared by Prof. Archana Balyan, Department of ECE, MSIT