Report on One-week STC
"AI/ML and Data Science for Industry 4.0 (Advanced Level)"
(HRDC, Integral University, Lucknow, a Remote Center of NITTTR, Chandigarh)
from 26th February - 1st March 2024

The Human Resource Development Centre and the Department of Computer Science & Engineering, Integral University as a remote Centre of NITTTR, Chandigarh has organized AICTE Recognized Short Term Course through Information and Communication Technology (ICT) on " **AI/ML and Data Science for Industry 4.0 (Advanced Level)" from 26th February -1st March 2024** at Integral University, Lucknow. The event, conducted in collaboration with the National Institute of Technical Teachers Training & Research, Chandigarh, aimed to provide advanced training in AI, Machine Learning, and Data Science for Industry 4.

A total of fifteen technical sessions were constituted from a wide variety of topics and each session was led by a team of expert's viz.:

Day 1:

➢ Essentials of Python and Open Libraries for AI/ML and Data Science by Dr. Amit Doegar – Course Coordinator, NITTTR, Chandigarh.

➢ Anaconda Distribution, Jupyter Setup and Python Programming for AI/ML and Data Science by Dr. Amit Doegar – Course Coordinator, NITTTR, Chandigarh

➢ AI and Data Science Methods and Tools for Industry 4.0 by Dr. Tanu Wadhera, Assistant Professor, IIIT, Una (H.P.).

Day 2:

- ➢ Data Integration, ETL, Data Cleaning and Advance Algorithms for Data Science Applications by Biswajit Nayak, Director, Grid Analytics India Pvt. Ltd, New Delhi.
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- ➢ NLP for Sentiment Analysis in AI and ML Applications by Dr. Rajni Mohana, Professor, Amity School of Engineering Technology, Punjab.

Day 3:

- ➢ Recurrent Neural Networks and Long Short-Term Memory Models for AI and ML by Dr. Sarbjeet Singh, Professor, CSE Dept, UIET, Panjab University, Chandigarh.
- ➢ Prompt Engineering for AI Applications by Upendra Kumar Tiwari, Upendra Kumar Tiwari, Data Scientist, Synergistic Compu soft Pvt. Ltd Ghaziabad.
- ➢ Advanced Machine Learning Algorithms Implementation for AI/ML and Data Science by Dr. Amit Doegar – Course Coordinator, NITTTR, Chandigarh.

Day 4:

- ➢ Diffusion Models for AI based Image Generation by Dr. Varun Gupta, Professor (CSE), Chandigarh College of Engineering and Technology, Chandigarh.
- ➢ Finetuning of Large Language Models for NLP and AI tasks, Dr. Varun Gupta, Professor (CSE), Chandigarh College of Engineering and Technology, Chandigarh
- ➢ Forecasting and Time Series Data Analysis for Industry 4.0 by Dr. Amit Doegar – Course Coordinator, NITTTR, Chandigarh.

Day 5:

- ➢ Federated Learning for AI Applications by Dr. Gaurav Kumar, Director, Magma Research & Consultancy Services, Ambala.
- ➢ Real-Time AI Case Study for Industry 4.0 Applications by Antara Borah, Project Coordinator, Wadhwani Institute for Artificial Intelligence, New Delhi.
- ➢ Feedback and Online Evaluation by Dr. Amit Doegar – Course Coordinator, NITTTR, Chandigarh.

This Short Term Course benefitted a total of Fifty Three participants. The Integral University was much praised by NITTTR Chandigarh for its active participation. Dr. Sheeba Praveen, Remote Center Coordinator, Dr. Sheeba Praveen, Remote Center Coordinator, and Mr Mohd Arif Ali Usmani, Technical Support Staff from Integral University's Department of Computer Science and Engineering, coordinated the programme.

Glimpses of the Event: