

Department of Computer Science

FDP on Recent Trends in AI & ML for Smart Computing

Event Report

Dates	:	8th July 2024 to 12th July 2024
Time	:	10:00 AM to 4:00 PM
Venue	:	E-108
Organized by :		Department of Computer Science & SDFS
Convener	:	Prof. (Dr.) Ajay Kumar Shrivastava
Coordinator	:	Prof. (Dr.) Gaurav Dubey, Mr. Abhishek Goyal
Co-Coordinator:		Dr. Harsh Khatter

Glimpse:

- 20 hours of interactive knowledge sharing sessions with experts from academia, and industry
- Hands-on Experimental learning sessions on Deep learning models demonstrating on datasets
- Article discussions and case studies discussions in various sessions
- Daily Feedback and Technical Quiz based on the session delivery

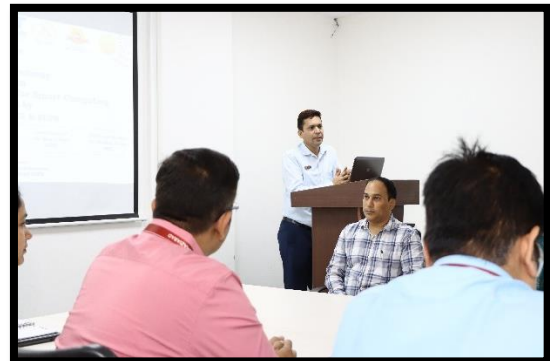
Inaugural:

FDP was inaugurated on 8th July 2024 in the presence of Dr. Ankur Chaudhary (Sr. Software Engineer, Accenture), Dr. Anil K Ahlawat (Director Academics, KIET), Dr. Manoj Goel (Joint Director, KIET), Dr. Shailesh Tiwari (Additional Director, KIET), Dr. Ajay Kumar Shrivastava (Dean CS & SDFS), Dr. Arun Tripathi (Principal, MCA), Dr. Abhinav Juneja (Dean, CSIT), Dr. Vineet Sharma (Dean, CSE) and the participants of the FDP.

Prof. Abhishek Goyal (CS) welcomed all in the inaugural ceremony. Director Academics presented a sapling to Dr. Ankur Chaudhary (Guest of the day). Further, Prof. Ajay Kumar Shrivastava (Dean, CS&SDFS) briefed about the FDP schedule, how the KIET and it's authorities are always work towards the Faculty skills and the overall development of Faculty and Students. Further, Dr. Shailesh (Additional Director) discussed about the types of FDPs and the significance of investing time in such fruitful events. Dr. Manoj Goel (Joint Director) expressed his gratitude to the guest Dr. Ankur Chaudhary. Dr. Goel congratulated the department of CS and SDFS for conducting the FDP and gave his best wishes to participants. Further, Dr. Anil K Ahlawat (Director

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Academics) focusses on the need of the hour, and how skills enhancement and upgradation is important. He also motivated all the participants to get the maximum benefit from the five days FDP. The inaugural ceremony ended with the discussions over high tea.



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Sessions Delivery:

Day 1

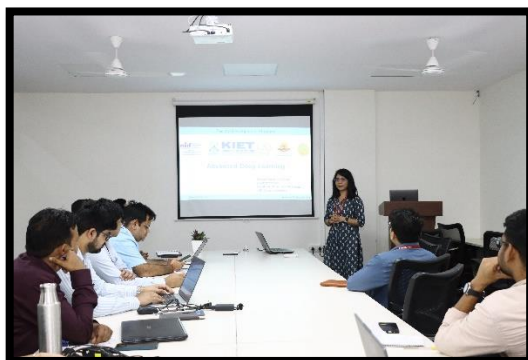
First session was started by the Dr. Ankur Chaudhary, Senior software engineer in Accenture. Dr. Ankur started the session by the examples about Chat GPT. He focusses on the research paper “Attention is all you need”, and further explained the role of Generative models and its advancements. During the session Dr. Ankur took various scenarios and discussed the applications where the generative models are /can be applied.

Second session of the Day 1 was delivered by the in-house speaker, Prof. Deepika Kamboj from IT Department. She focusses on the Auto-encoder and GAN models, and their demonstration using Keras on Google Colab. Prof. Deepika well explained the basic concepts related deep learning and how the data is re-constructed and new data is generated using auto-encoder and GAN.

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Day 2

Dr. Manju Khari (Professor, JNU) was the speaker of the session who came to discuss the recent trends in Deep Learning and its applications. Dr. Manju highlighted the trends of research in form of Analysis, Comparison and novel research in the field of deep machine. Dr. Khari emphasis on the authenticity of the datasets which researchers are taking for their work and paper publications. Some more facts about machine learning, deep learning and their methodologies are discussed during the session. Dr. Khari also took the examples of Radar systems, Soil monitoring systems, Climate analysis, etc and discussed the nature of models applied on such systems. She also discussed about the security concerns in the domain of deep learning and its applications.

Afternoon session was taken by Dr. Rahul Katarya, Professor from DTU. Dr. Rahul delivered the session on AI Ethics and Data mitigation. Dr. Rahul also highlighted his major achievements in the research domain and he invited the researchers at DTU on work in collaboration with DTU research labs. He also talk about the government initiatives over AI and ML domain in various government sectors, and also shared the weblink of government bodies datasets to do analysis and research. He motivated all the researchers to work for the society and humans. During the session, many participants discussed their problem statements and doubts about Machine learning with Prof. Rahul.



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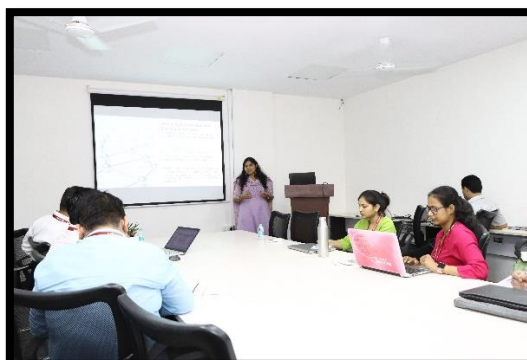
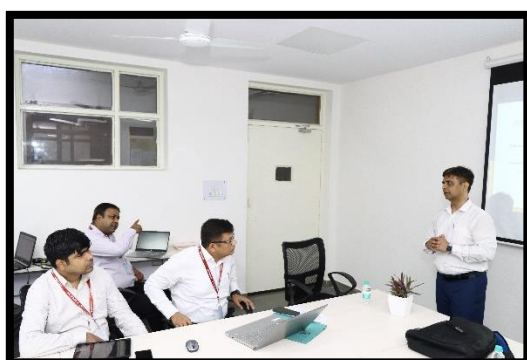


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Day 3

The topic of the session 5 of the FDP was large language models, which was well delivered by Mr. Awadhesh Srivastava from Armman. Mr. Avadhesh talked about the self-attention mechanisms and how the LLMs work. He also showed the LLM model created by him and discussed the working approaches behind LLMs.

Second session of Day 3 was delivered by Dr. Archana, where she focussed on the Auto Machine Learning part and discussed the applications of Auto ML. Further, Dr. Gaurav Dubey demonstrated working script on jupyter notebook editor. Dr. Dubey also showcased the various tools to be used for the research purpose to implement the machine learning models.

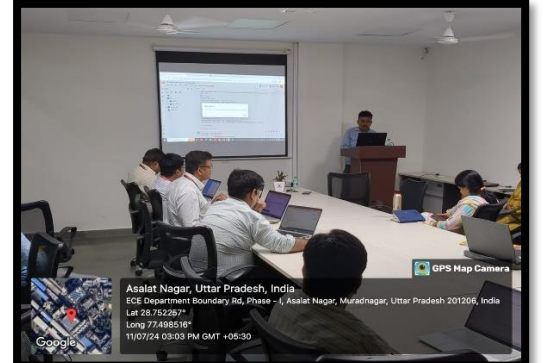


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Day 4

The day was started with the session of Ms. Gunjan Ahuja, Data Analyst from Gartner. She presented the projects and the way of analysing the data by her team/company. Ms. Gunjan discussed the complete approach to work on the client's requirement and how the input data is being analysed via data analytics tools like PowerBI. She also demonstrated the one of the client's project whose real data is processed and visualized on PowerBI. Ms. Ahuja discussed about the industry requirements and the need of data analysis in the coming few years.

The next session of the day was the hands-on session on deep learning models. Prof. Bhagvan Krishna Gupta, from CS department delivered the session, and shared the dataset with the script, so that everyone can hands-on on it. Prof. Gupta first explained all the terminologies like loss function, accuracy and the building components of the deep learning model; and further showed the implementation of the model on image dataset. He also discussed his Ph.D work where Prof. Gupta worked on U-Net and FP-mobnet.



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Day 5

Dr. Sushil Kumar, Associate Professor, CSE Dept is the speaker of the session. He discussed about the Federated Learning, FedAvg Algorithm on which the federated models work. Dr. Sushil took examples of the emoji suggestions, recommender systems, and the project on which he worked earlier. The role of centralized dataset and decentralized dataset is very important while training a model, he added. Dr. Sushil also discussed about the challenges involved in the Federated learning and how these can be resolved.

Mr. Gaurav Aggarwal, Director (Technology), S&P Global was the speaker of the last session of the FDP from 2:00 PM to 4:00 PM on 12th July 2024. Mr. Gaurav started the session by discussing about the company profile and how the tech team works when the product requirement is there from the client side. To deliver a product how different teams can work parallelly. The agenda of the talk was AI Ethics, challenges in AI ethics, understanding bias in AI and methods for Bias mitigation. He also discussed about the changes in the schooling syllabus that how AI ethics subject is added in the curriculum of the students, and soon it will be in all curriculums. The way to use AI in good and bad manner is also discussed by giving an example of deep fake and Automated mechanisms of Alexa and Siri. In the last, Mr. Gaurav discussed about the industry use-cases and Future of AI.

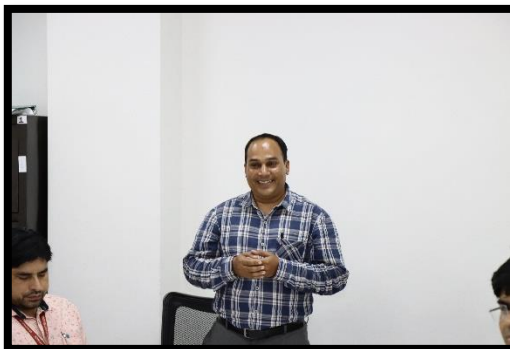
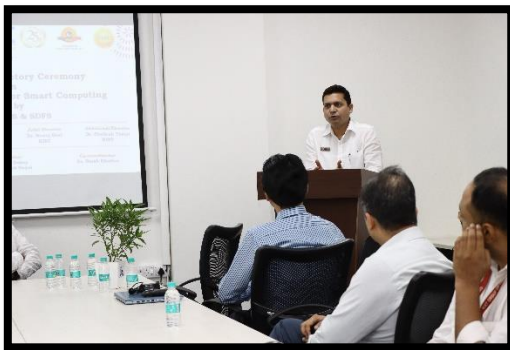
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Felicitation and Valedictory

The event was concluded by the felicitation of speakers, participants and the organizers by the Director Academics, Dean CS & SDFS along with Departmental heads. During the valedictory, Dr. Ajay Kumar Shrivastava, Convener of FDP presented the brief report and Dr. Anil Kumar Ahlawat, Director Academics appreciated the efforts of organizing team. Dr. Sachin (ME), Dr. Snigdha (EEE) and Dr. Archana (Maths) shared their feedback on FDP and the sessions delivered. The event end with the high tea.



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Outcome:

Out of 25 participants, 24 participants successfully completed the FDP based on the criteria of 80% attendance and 60% marks in assessment. Based on the feedback of the participants, the FDP was well organized and fruitful for both, the beginners and the experts of the AI Domain.

Image Link on Google Drive:

<https://drive.google.com/drive/folders/1fjLfvYDjN-hraRJMnMV1KznuT0QW5mr?usp=sharing>

Report prepared by

Dr. Harsh Khatter