New Horizon College of Engineering

Department of Artificial Intelligence and Machine Learning

Organizes

5-Day Industry Intensive Faculty Skill Development Program on Optimizing Machine Learning Workflows: Data Pipelines, Explainable AI and MLOps in Research & Practice

In collaboration with

24th – 28th June 2024

Comprehensive Report
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Compiled by Dr. N V Uma Reddy, Professor & HOD – AIML

The Faculty Development Program (FDP) on Optimizing Machine Learning Workflows was held from 24th June 2024 to 28th June 2024 and was graciously sponsored by the Indian Society for Technical Education (ISTE), Karnataka section. The event saw participation from 15 various institutions across Karnataka, with a total of 50 attendees, including 40 external participants and 10 internal participants. The program aimed to enhance the understanding and practical skills of faculty members, scholars, and industry professionals in the domain of machine learning operations (MLOps).

The FDP featured a diverse range of sessions led by esteemed resource persons, Mr. Samikkumar Shah, Data Scientist, Target, Bangalore, Mr. Krishna Dave, Founder & CEO, Mr. Harish, Co-Founder & CTO, of Preprod Corp. Bangalore, Mr. Raghu Prasad, CEO of Kaushalya Tech, Bangalore, to cover the key aspects of MLOps, including data handling, business problem-solving with AI and ML, data pipeline implementation, Explainable AI (XAI), and cloud-based MLOps solutions.

Objectives:

- To enhance the participants' knowledge of machine learning workflows and MLOps.
- To provide hands-on experience with industry-standard tools and techniques.
- To foster an understanding of applying AI and ML to real-world business problems.
- To explore the nuances of data pipeline implementation and model optimization.

- To introduce the concepts of Explainable AI (XAI) and the use of cloud platforms in MLOps.

Program Highlights:

- **Foundations of Machine Learning Operations (MLOps):** Participants learned about data roles and the ML project lifecycle, exploring industry tools and libraries.
- **Applying AI and ML to Business Problems:** Focus on solving business problems with AI and ML through case studies and retrospection activities, including POC and MVP.
- **Data Pipeline Implementation:** Hands-on demo of data pipeline implementation, emphasizing best practices for data ingestion, transformation, and loading.
- **Explainable AI (XAI) and MLOps:** Introduction to XAI techniques and their integration in MLOps workflows, focusing on model transparency, interpretability, accuracy, and monitoring.
- **DevOps vs MLOps and Cloud Platforms:** Comparison of DevOps and MLOps, demonstrating MLOps tools and Azure cloud platform capabilities.

Overall Outcomes:

- Enhanced ability to integrate advanced MLOps techniques into their curriculum, fostering a more engaging and relevant learning experience for students.
- **For Scholars:** Expanded knowledge base in optimizing ML workflows, enabling innovative research contributions in their respective fields.
- **For Faculty members:** Improved support in data management, model deployment, and optimization, enhancing institutional capabilities in leveraging ML technologies.

This FDP has equipped participants with the knowledge and practical skills necessary to optimize machine learning workflows, fostering a culture of continuous improvement and innovation in their academic and professional endeavors. We look forward to future collaborations and continued support from ISTE in our endeavors to promote excellence in technical education and professional development.

Thank you.

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