NEW HORIZON
COLLEGE OF ENGINEERING

DEPARTMENT OF INFORMATION SCIENCE and ENGINEERING

Expert Talk

on

"End-to-End Machine Learning: Build, Deploy, and Deliver an ML Model"

Participants: **V Semester Students** **Date: 02-12-2025**

Brief Description of the Event

On 2nd December 2025, the Department of Information Science and Engineering hosted an expert talk on "End-to-End Machine Learning: Build, Deploy, and Deliver an ML Model," presented by Mr. Naveen Sagayaselvaraj, Lead Automation Engineer, Symphony AI, Bengaluru. The session aimed to provide a rapid, hands-on session demonstrating how to train a machine learning model, convert it into an API, and deploy it for real-world use. This session walks through data preparation, model training, API creation, and deployment using real-world practices.

Key Points covered in the Expert Talk

The expert talk began with a brief introduction on Machine Learning models deployment for real-world environment.

Introduction: Machine Learning models are computer programs that learn patterns from data and make predictions or decisions without being explicitly programmed. And ML is not just about algorithms; it is a complete lifecycle.

The End-to-End ML Workflow: End-to-end ML means covering the full journey from raw data to a live API. This includes cleaning data, training and evaluating the model, saving it, building an API using frameworks like FastAPI, and finally hosting it on the cloud so anyone can call it.

Why Do We Deploy ML Models?

Deployment turns a model into a production-ready service so others can access it via APIs. Without deployment, the model remains a file on your laptop with no practical use.

Machine Learning models are deployed to transform a trained model from an offline experiment into a usable, real-world application that delivers value to end users, systems, or businesses. Deployment ensures that predictions generated by the model can be accessed in real time or in batch mode, integrated into applications, or automated within business workflows.

1. To Make Predictions Available to Real Users or Systems

A trained model sitting in a Jupyter Notebook is not useful until it can:

- Predict customer behaviour in a mobile app
- Detect fraud in a banking system
- Recommend products on an e-commerce platform

Deployment exposes the model as an API, service, or embedded module so applications can consume predictions.

2. To Automate Decision-Making

Organisations deploy ML models to automate or support decisions such as:

- Approving loans
- Flagging anomalies
- Prioritising medical risks
- Routing customer queries

Automation reduces human effort, increases speed, and improves consistency.

3. To Integrate ML into Business Workflows

Deployment enables integration with:

- Web Applications
- Enterprise Software
- IoT Devices
- Databases
- Edge Devices

This allows the model to contribute directly to operational processes.

4. To Achieve Scalability and Reliability

Deployment uses infrastructure such as Docker, Kubernetes, or Cloud Services to:

- Scale model usage to millions of requests
- Provide high availability
- Ensure version control and reproducibility

This is essential for production environments.

5. To Enable Real-Time or Near Real-Time Predictions

Many applications need instant responses:

- Self-Driving Systems
- Stock Market Prediction
- Voice Assistants
- Recommender Systems

Deployment allows low-latency, real-time inference.
Live Demo: In this session, we will walk through a real example: A trained ML model served through a cloud API. You'll see how predictions are made, how the API works behind the scenes, and how the architecture connects model, backend, and cloud hosting**.**

The session was interactive, with students actively participating in discussions and sharing their own innovative thoughts. The expert also shared valuable insights on current industry practices and how innovation is driving technological and social transformation.

Feedback from the participants was highly positive, and they appreciated the expert's engaging delivery, real-life examples, and inspiring message. The session motivated many to explore how Machine Learning Models are deployed in the real-time environment.

Activities Conducted: NIL

No. Of Participants: 65

Winners (if any, for activities conducted): NA

Guest Details (Name, Designation, Organisation, Location):

Mr.Naveen Sagayaselvaraj
Lead Automation Engineer
SymphonyAI, Bangalore

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NEW HORIZON COLLEGE OF ENGINEERING

IEEE

Expert Talk

End-to-End Machine Learning: Build, Deploy, and Deliver an ML Model

Mr. Naveen Sagayaselvaraj
Lead Automation Engineer
SymphonyAI

- 2nd December - 2025
- 10:00 AM to 12:00 PM
- C-503, ISE Dept
- 5th Semester Students

Faculty Coordinator

Ms. Bibiana Jenifer J
Assistant Professor, ISE

Convenor

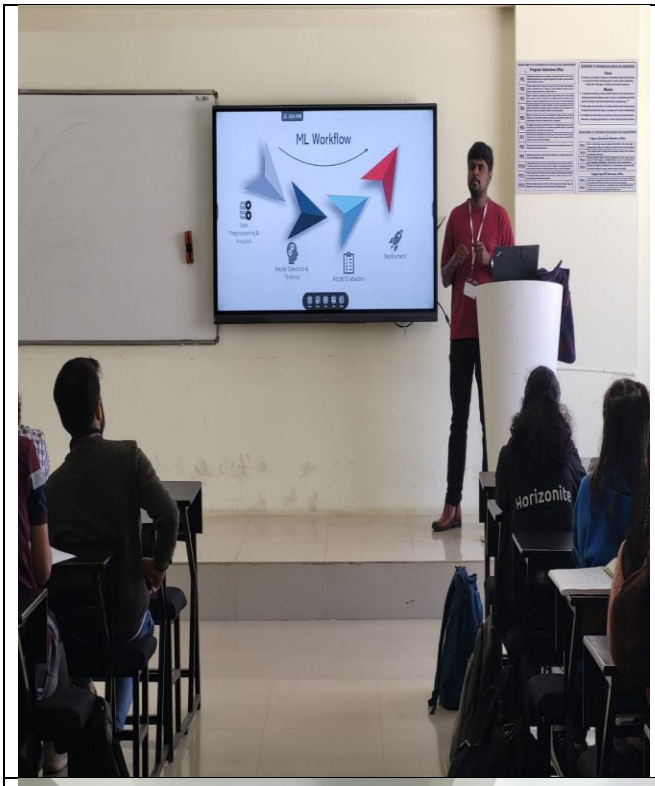
Dr. Vandana C P
Associate Professor
HoD - ISE

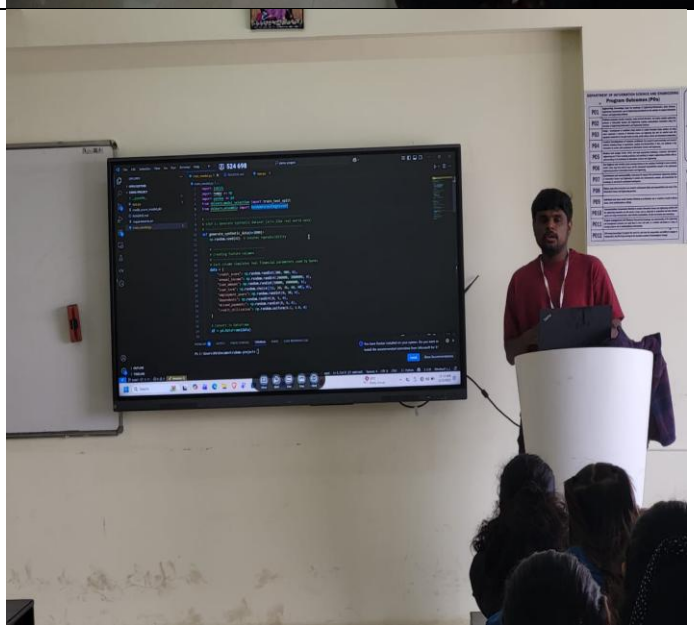
Dr. R J Anandhi
Dean-Academics

Dr. Manjunatha
Principal

Organized by
Department of Information Science and Engineering

Glimpses of the Event





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Bibiana Jenifer J

HoD-ISE
Dr. Vandana C