



MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

DEPARTMENT OF COMPUTATIONAL INTELLIGENCE

A REPORT ON THREE DAY FDP ON “SPRING BOOT TRAINING PROGRAM”

(From 07/04/2025 to 11/04/2025)

The Department of Computational Intelligence proudly organized a **Spring Boot Training Program** in association with **Infosys Springboard** for the students of **III Year CSE (AIML) and AIML**, held from **7th April to 11th April 2025** between **2:00 PM to 4:00 PM**.

Objective of the Training:

The training aimed to equip students with foundational and practical knowledge in **Python for Data Science and Machine Learning**, culminating in the **Machine Learning Foundation Certification**. The sessions emphasized hands-on exercises, real-world datasets, and key libraries used in the AI/ML ecosystem.

Topics Covered:

Day-wise Overview

Day 1 – Introduction to Data Science Tools

- Basics of Python for Data Analysis
- Introduction to NumPy
- Array operations and performance benefits

Day 2 – Data Handling & Visualization

- Working with Pandas DataFrames
- Data reading/writing and time series operations
- Visualizing data using Matplotlib

Day 3 – Machine Learning Foundations

- Introduction to Machine Learning Concepts
- Types of Learning – Supervised, Unsupervised, Semi-supervised, Reinforcement

Day 4 – Regression Models

- Simple Linear Regression
- Logistic Regression and Classification Techniques
- Use cases and performance metrics

Day 5 – Capstone and Certification

- Hands-on coding tasks
- Recap of all modules
- Completion of **Machine Learning Foundation Certification**

Highlights of Key Concepts:

NumPy:

- Offers powerful N-dimensional arrays for numerical computing.
- Faster computations than native Python due to C backend and memory efficiency.
- Supports broadcasting for operations across arrays with different shapes.

Pandas:

- A key library for data manipulation.
- Enables fast and flexible data structures like Series and DataFrames.
- Simplifies data cleaning, merging, and time series analysis.

Matplotlib:

- Versatile visualization library used for creating publication-quality plots.
- Seamlessly integrates with NumPy and Pandas for data visualization.

Simple Linear Regression:

- Models the linear relationship between a dependent and independent variable.
- Used in trend forecasting and predictive analytics.

Logistic Regression:

- Handles binary classification problems by modeling probabilities using the logistic function.
- Essential in areas like risk prediction, spam detection, and medical diagnostics.

Introduction to Machine Learning:

- Covers concepts like training models, evaluating them, and real-world use cases.
- Includes an overview of learning paradigms—supervised, unsupervised, semi-supervised, and reinforcement.

Conclusion:

The Spring Boot training program successfully introduced students to essential Python-based tools and Machine Learning techniques. With strong participation and enthusiasm from the students of III Year CSE (AIML) and AIML, the event enhanced their technical competencies and prepared them for future industry challenges.

Photos Gallery

