Certified Professional Training

Intro to ML & Data Science

Practical Training on Real World Industrial Projects

Target Learners: Undergraduates and Job Professionals

Pre-requisite: Basic computer technological skills

Duration: 1.5 Months (2 sessions each week = Total 12 sessions)

Credit Hours: 24 (4 Hours each week)

Program Manager: Meerab shabeeh - meerab.shabeeh@vilabsacademy.uk

Enrollment Form: https://forms.gle/wHUTGTGtAAba5AjN6

Key Takeaways

After completing this course, participants will be able to:

- Explain what Machine Learning is and distinguish between supervised and unsupervised learning.
- Identify real-world applications of Data Science and Machine Learning across industries.
- Understand the complete Machine Learning workflow from data preparation to model evaluation.
- Use Scikit-learn to prepare datasets and apply train/test split techniques.
- Build and interpret a linear regression model for prediction tasks.
- Develop classification models using Logistic Regression and K-Nearest Neighbors (KNN).
- Evaluate model performance using accuracy, confusion matrix, and basic metrics.
- Identify overfitting and underfitting issues and apply techniques to improve generalization.
- Implement unsupervised learning using K-Means clustering.
- Apply feature scaling techniques to improve model performance.
- Build a simple end-to-end Machine Learning project integrating data preprocessing, modeling, and evaluation.

Approved by

ViLabs Academy, Advisory Board Members (ABM) comprises senior educators, industry leaders, and global technology experts who provide strategic guidance across training design and curriculum development. The Board actively reviews course content, ensures alignment with current industry demands, and validates learning outcomes against global skill standards. Their involvement guarantees that all ViLabs Academy programs remain credible, practical, and workforce-ready, giving learners and partners confidence in the quality and relevance of our education.

Software/Tools to be learn

- Anaconda
- Jupyter Notebook

Course Outline

- What is Machine Learning? Types (Supervised, Unsupervised)
- Real-world Applications of Data Science
- ML Workflow (data → model → evalua on)
- Scikit-learn Overview, Train/Test Split
- Linear Regression
- Classification (Logistic Regression / KNN)
- Model Evaluation (accuracy, confusion matrix)
- Overfitting & Underfitting
- Introduction to Unsupervised Learning (K-Means)
- Feature Scaling
- Simple End-to-End ML Project