AI/ML for Intermediate

Objectives:

- Master advanced data preprocessing and feature engineering techniques
- Gain proficiency in decision trees, random forests, and ensemble methods
- Understand and apply deep learning concepts, including CNNs and RNNs
- Complete case studies in image classification and sentiment analysis

Duration:

2-full-days (India: 9AM-4PM IST)
3-half-days (US: 8.30PM-12.30AM IST)

Prerequisites:

- Completion of AI/ML for Beginners course or equivalent knowledge
- Basic Python programming skills
- Familiarity with fundamental ML concepts
- Understanding of basic statistics and linear algebra

Course Outline

Section 1

- Brief on Basic ML Concepts
- Advanced Data Preprocessing Techniques
- Feature Engineering and Feature Selection
- Advanced Regression Techniques: Ridge, Lasso, ElasticNet
- Decision Trees and Random Forests
- Hyperparameter Tuning
- Cross-Validation Techniques
- Introduction to Support Vector Machines
- Ensemble Learning: Bagging, Boosting
- Introduction to XGBoost
- Model Evaluation and Improvement

Section 2

- Introduction to Deep Learning
- Convolutional Neural Networks (CNN)
- Recurrent Neural Networks (RNN)

- Long Short-Term Memory (LSTM) Networks
- Natural Language Processing (NLP) Basics
- Text Preprocessing and Vectorization
- Introduction to Transfer Learning
- Building and Training Deep Learning Models with TensorFlow/Keras
- Case Study: Image Classification with CNN
- Case Study: Sentiment Analysis with RNN
- Q&A and Recap