

## Python for AI & ML (3 Months)

**Duration:** 3 Months (~120 Hours)

**Mode:** Live Online / Classroom

**Designation after completion:** AI/ML Engineer (Python)

**Tools & Technologies:** Numpy, Pandas, Scikit-learn, TensorFlow/PyTorch, NLTK, Spacy

**Certifications prepared:** TensorFlow Developer Certificate, IBM ML with Python

### Detailed Syllabus (12 Weeks)

#### Week 1

- Python recap for ML
- Assignment → Clean ML dataset

#### Week 2

- ML intro
- Train-test split
- Assignment → House price prediction

#### Week 3

- Regression models
- Assignment → Salary prediction

#### Week 4

- Classification models
- Assignment → Iris classifier
- Mock Interview 1

#### Week 5

- Clustering models
- Assignment → Customer segmentation

#### Week 6

- Model evaluation
- Assignment → Fraud detection dataset

#### Week 7

- Neural Networks basics
- Assignment → Build simple ANN

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**Week 8**

- CNN basics
- Assignment → MNIST digit classifier
- Mock Interview 2

**Week 9**

- NLP preprocessing
- Assignment → News classification

**Week 10**

- Word embeddings
- Assignment → Sentiment analysis

**Week 11**

- Transfer learning basics
- Assignment → Mini chatbot

**Week 12**

- Capstone Projects: Sentiment Analysis, Image Classifier
- Mock Interview 3

**Mini Projects**

Sentiment Analysis  
Image Classifier  
Sales Prediction