



—◆ Training Program ◆—

Module 1: Foundations

> Introduction to AI

- History of AI
- AI applications in India (healthcare, agriculture, finance, startups)
- AI vs ML vs Deep Learning vs Data Science

> Mini Project

- Data visualization on Indian population or cricket dataset

> Python for ML

- Basics of Python (loops, functions, OOPs basics)
- Libraries: NumPy, Pandas, Matplotlib, Scikit-learn

Module 2: Machine Learning Basics

> Supervised Learning

- Linear Regression, Logistic Regression
- Decision Trees, Random Forest

> Model Evaluation

- Train/Test Split, Cross Validation
- Accuracy, Precision, Recall, F1-Score

> Unsupervised Learning

- Clustering (K-Means)
- Dimensionality Reduction (PCA)

> Mini Project

- Predict house prices or classify Indian fruits dataset

Module 3: Deep Learning Basics

> Neural Networks

- Perceptron, Activation Functions
- Gradient Descent & Backpropagation

> Applications

- Image Classification (MNIST / Indian Handwritten Digits)
- Text Classification (sentiment analysis in Hindi/English)

> Deep Learning Frameworks

- Introduction to TensorFlow & PyTorch

> Mini Project

- Build a Handwritten Digit Classifier

Module 4: Advanced ML & Tools

➤ Natural Language Processing (NLP)

- Text Preprocessing (Tokenization, Stop words, Stemming, Lemmatization)
- Word Embeddings (Word2Vec, GloVe, BERT basics)
- Chatbot basics

➤ AI Tools & Cloud

- Google Colab / Kaggle
- AI on Cloud Platforms (AWS, Azure, GCP – basic intro)

➤ Computer Vision

- Image Processing with OpenCV
- Face & Object Detection basics

➤ Mini Project

- Build a simple chatbot or face recognition system

Module 5: Final Project + Career Prep

➤ Capstone Project (choose one):

- Chatbot for Indian railway inquiry
- Fake news detection (English/Hindi dataset)
- Crop disease prediction (image classification)
- Movie recommendation system

➤ Career Preparation

- Resume building with AI projects
- GitHub portfolio creation

➤ AI Ethics & Future Trends

- Bias in AI, Data Privacy
- Careers in AI (Internships, Job roles, Research opportunities)



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