

## AI/ML Roadmap (Build-First Approach)

### FLOW DIAGRAM (Text-Based):

Python Basics



NumPy + Pandas



Classical ML (4 Projects)



Deep Learning (CNN)



NLP + LLMs (Chatbots, RAG, Fine-Tuning)



Deployment (FastAPI + Cloud)



Final Portfolio Projects

### DETAILED ORDER:

#### 1. Python Basics

- Variables, loops, functions
- Basic scripts

#### 2. NumPy + Pandas

- Read CSV, clean data, filtering, sorting

#### 3. Classical ML

Project 1: House Price Prediction (Linear Regression)

Project 2: Spam Classifier (TF-IDF + Naive Bayes)

Project 3: Diabetes/Titanic Classification (Logistic Regression)

Project 4: Random Forest Project (Fraud, Movies, Sales etc.)

#### 4. Deep Learning

Project 5: CNN Image Classifier (Cats vs Dogs)

Project 6: Digit/Emotion Recognition

#### 5. NLP + LLMs

Project 7: Basic Chatbot

Project 8: RAG Application (LLM + Vector DB)

Project 9: Fine-tune a small LLM

#### 6. Deployment

- Build API with FastAPI
- Deploy on HuggingFace/Render/Vercel

#### 7. Final Portfolio Projects

- Face recognition
- Recommendation system
- AI chatbot for a company
- Voice assistant
- Fraud detection system