

AI Engineer Roadmap for Beginners

1) Core Programming Skills

- Learn Python well
- Version control with Git & GitHub

2) Math & Data Foundations

- Linear algebra, probability, stats
- Gradients, calculus for optimization

3) Data Science & ML Basics

- pandas, NumPy, scikit-learn
- Regression, classification, clustering
- Starter projects: Titanic, Iris, Housing

4) Deep Learning Foundations

- Neural nets basics: perceptron, activation
- TensorFlow or PyTorch
- MNIST/CIFAR image classification

5) Real AI Projects

- End-to-end pipelines
- Transfer learning
- Open datasets (NLP, CV)

6) LLMs & GenAI

- Use OpenAI APIs

- Prompt engineering
- LangChain for RAG/chatbots

7) ML Ops & Deployment

- Build APIs (FastAPI/Flask)
- Streamlit or Gradio
- Docker basics

8) Stay Updated & Apply

- Join communities
- Contribute open-source
- Build a portfolio