30-Day AI Engineer Roadmap

# Week 1: Foundations of Programming & Math

* Day 1–2: Learn Python basics (variables, loops, functions, OOP)  
  Resource: Python for Everybody (Coursera)
* Day 3–4: Practice NumPy and pandas  
  Mini project: analyze a CSV dataset
* Day 5: Matplotlib for data visualization  
  Mini-project: visualize COVID or stock data
* Day 6: Math: Linear Algebra (vectors, matrices) – Khan Academy
* Day 7: Algorithms basics: sorting, searching (CS50 or LeetCode easy problems)

# Week 2: Core AI & Machine Learning

* Day 8: Supervised learning: regression/classification  
  Resource: Andrew Ng’s ML Course
* Day 9: Unsupervised learning: clustering, dimensionality reduction
* Day 10: Hands-on: scikit-learn – train a classifier (Iris dataset)
* Day 11–12: TensorFlow and Keras basics: build and train a neural network  
  Resource: Hands-On ML book
* Day 13: Model evaluation metrics (accuracy, F1, confusion matrix)
* Day 14: Mini-project: Train a classifier on a UCI dataset and evaluate

# Week 3: Specialization in AI Disciplines

* Day 15–16: NLP with spaCy and Hugging Face (tokenization, NER)  
  Project: Sentiment analysis on tweets
* Day 17–18: Computer Vision with OpenCV and YOLO basics  
  Project: Image classifier using CIFAR-10
* Day 19–20: Build a basic chatbot with OpenAI API  
  Try LangChain (simple question-answering agent)
* Day 21: Project: News summarizer or translator using transformers

# Week 4: AI Deployment, MLOps & Portfolio

* Day 22–23: Learn FastAPI & Docker: create a model API and containerize it
* Day 24: Use MLflow for experiment tracking
* Day 25–26: Learn basics of AWS SageMaker and deploy a simple model
* Day 27–28: Upload all projects to GitHub  
  Write clean README files and document your work
* Day 29: Explore contributing to open source (Hugging Face or LangChain GitHub)
* Day 30: Join a Kaggle competition or apply for freelance gigs/internships