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