



techventive.io
US Engineering Studio

Cohort enrolling now

info@techventive.io · 202-709-6940
5010 Sunnyside Ave, Suite 108, Beltsville, MD 20705
www.techventive.io

AI / ML ENGINEER BOOTCAMP

AI / ML *Engineer*

6 weeks · Intermediate · live + recorded

A hands-on AI/ML curriculum covering Python for ML, scikit-learn fundamentals, deep learning with PyTorch, NLP, modern LLMs (OpenAI, Anthropic), vector databases, RAG patterns, prompt engineering, and MLOps — delivered by senior US ML engineers building real production AI systems.

10

CORE MODULES

35+

PRACTICAL SKILLS

5+

PROJECT TRACKS

1:1

CAREER SUPPORT

The *production stack* you'll master

Each tool taught with the workflows and failure modes practitioners actually meet on the job.

01

Python

ML-grade Python

02

NumPy

Numerical computing

	03 Pandas Data manipulation
	04 scikit-learn Classical ML
	05 PyTorch Deep learning
	06 Hugging Face Transformer models
	07 OpenAI LLM API
	08 Anthropic Claude API
	09 LangChain LLM orchestration
	10 Weights & Biases Experiment tracking

Foundation *modules*

First half of the curriculum – core fundamentals and the most common day-to-day skills.

- 01

ML Foundations

What is ML, supervised vs. unsupervised vs. reinforcement, training/validation/test splits, the bias-variance tradeoff.
- 02

Math for ML

Linear algebra essentials, calculus refresher, probability, statistics for ML, gradients and optimization.
- 03

scikit-learn

Pipelines, transformers, estimators, linear & tree models, evaluation metrics, cross-validation, hyperparameter tuning.



Deep Learning with PyTorch

Tensors, autograd, neural network basics, training loops, CNNs, RNNs, transfer learning.



NLP Fundamentals

Tokenization, embeddings, word2vec, transformers, attention, BERT, fine-tuning Hugging Face models.

Python Engineers

Add ML and AI to your toolkit — the highest-leverage skill of the decade.

Data Scientists

Move from notebooks into production ML and LLM systems.

Career Switchers

Move into AI/ML from quantitative backgrounds — math, physics, stats.

Builders

Ship real LLM-powered products fast.

techventive.io · Your engineering career, supercharged.

info@techventive.io · 202-709-6940 · techventive.io



Advanced *modules*

Second half – production patterns, real-world operations, and the senior-level depth.

06

Large Language Models

GPT-4/Claude APIs, prompt design, function calling, structured outputs, evaluation, cost optimization.

07

RAG & Vector Databases

Embeddings, chunking strategies, Pinecone / Weaviate / pgvector, retrieval quality, hybrid search.

08

Prompt Engineering & Agents

System prompts, few-shot, chain-of-thought, ReAct, tool use, multi-agent patterns, evaluation.

09

MLOps

Model versioning, experiment tracking (W&B / MLflow), model registries, deployment (BentoML / SageMaker), monitoring.

Production AI Apps

Building and shipping an AI application end-to-end: backend, vector store, LLM, frontend, deployment, observability.

🔑 Hands-on project outcomes

- Train a scikit-learn classifier with proper cross-validation.
- Fine-tune a Hugging Face transformer on a custom dataset.
- Build a RAG application end-to-end with embeddings + LLM.
- Deploy an ML model behind a FastAPI endpoint.
- Build an LLM agent with tool use and structured outputs.
- Run experiment tracking with W&B for a real project.
- Build and ship a full production AI application.
- Optimize LLM costs through caching, prompt design, and model choice.

🎓 Course learnings

- Classical ML — when to use which algorithm.
- Modern deep learning with PyTorch.
- NLP and the transformer architecture.
- LLMs in production — RAG, agents, evals, costs.
- MLOps — getting models from notebook to production.
- Building real AI products that ship.

Career readiness, *built in.*

techventive.io turns this curriculum into job-ready positioning — project explanation, résumé and LinkedIn rewrites, GitHub portfolio polish, technical interview preparation, and placement-focused guidance through to the offer letter.

AI/ML Engineer

ML Platform Engineer

Applied Scientist

LLM Engineer

MLOps Engineer

AI Solutions Engineer

Who can *apply*

Freshers, working professionals, managers, career switchers, and aspirants who want a practical, job-focused path.

Python Engineers

Data Scientists

Career Switchers

Builders

Start your AI / ML Engineer journey with techventive.io.

info@techventive.io • 202-709-6940 • Beltsville, MD