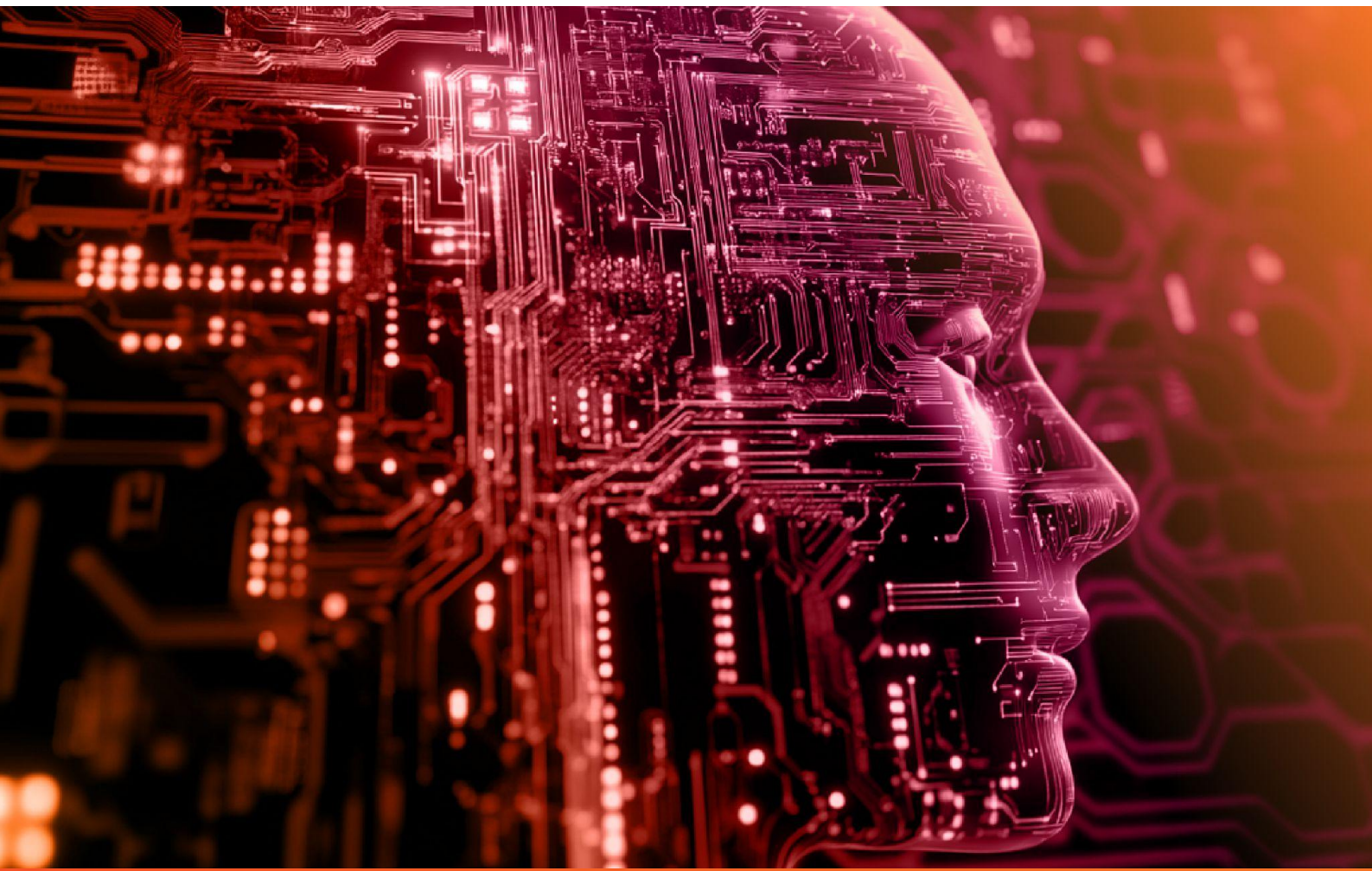
DEVOPS EXPERTS

AI ENGINEER SYLLABUS



Beit Silver (9th floor), Abba Hillel 7, Ramat Gan | 052-4100676 | info@devopsexperts.co.il

INTRODUCTION

While students in large colleges study mass amounts of theory, we offer up to date, fresh and relevant AI Engineering classes **focused on practical work methods, adapted to industry needs** so you can advance our career with enough confidence and the right experience to do your job right.

Our classes are taught by industry experts, those who work simultaneously as interviewers and recruiters in high-tech companies and know exactly what it takes to succeed. Each student learns **exactly** what they need to know for their future jobs – for this reason, all candidates are screened and evaluated before admission in order to guarantee the highest level of learning and ensure future career opportunities.

What does this mean for you? You gain the best hands-on experience and pay less money - two birds, one stone.

OUR KNOWLEDGE, YOUR FUTURE

INDIVIDUALS

Our AI Engineer courses focus on practical knowledge; in class exercises, homework assignments and learning in small groups which allows for personal attention and better understanding of the material.

COMPANIES

We offer customized AI Engineer courses and workshops according to your company needs. Course materials are suited to your everyday tasks and training requirements.

“FIND WORK”

We can provide career assistance by reviewing your resume, teaching social media networking and defining LinkedIn content for professional “branding” as well as refer you to relevant positions.

DEVOPS EXPERTS

COMPANY DETAILS

YEAR FOUNDED
2018

COMPANY SIZE
50-80

No. OF GRADUATES
10K+

No. OF LECTURERS
30

No. OF COMPLETED COURSES
350+

HEADQUARTERS
RAMAT-GAN, ISRAEL

OFFICES IN
ATLANTA, USA
LONDON, UK

OPERATING IN
AUSTRIA
BELGIUM
DENMARK
GERMANY
HUNGARY
IRELAND
ITALY
NETHERLANDS
NORWAY
POLAND
ROMANIA
SAUDI ARABIA
SPAIN
UNITED KINGDOM

Beit Silver (9th floor), Abba Hillel 7, Ramat Gan | 052-4100676 | info@devopsexperts.co.il

COURSE OVERVIEW

The AI Engineering course is designed for R&D professionals who want to go beyond theory and start building intelligent, scalable, production-ready AI systems. This hands-on program walks participants through the full lifecycle of AI development - from mastering Python and ML foundations to deploying LLMs, automating workflows, and building intelligent agents.

You'll gain experience working with cutting-edge tools like OpenAI, Claude, LangChain, n8n, and containerized deployments. You'll also explore advanced concepts in LLM reasoning, server-client orchestration, and infrastructure monitoring - giving you both the big-picture understanding and the technical depth needed to lead AI innovation inside tech organizations.

By the end of the course, participants will have developed and deployed their own AI-powered applications and gained the engineering mindset and toolkit to scale them in production.

WHO IS THIS COURSE FOR?

This course is designed for professionals working in R&D, engineering, or technical product environments who want to build hands-on skills in AI engineering. Whether you're coding daily or working alongside developers, the program equips you with the tools to understand, integrate, and apply AI systems in real-world scenarios - no prior AI experience required.

- Backend Developers
- Full-Stack Developers
- Data Engineers
- ML Engineers
- Automation Engineers
- DevOps Engineers
- Innovation Engineers
- System Architects
- Technical Product Leads

DEVOPS EXPERTS

THE INSTRUCTORS

Eduard Brook

DevOps
Team Lead

Walmart Global Tech

Yuval Wilf

Sr. Director
of Architecture

imperva

Danny Gitelman

Senior Site Reliability
Engineer

Microsoft

Arnon Goldstein

Program Architect
Team Lead

salesforce

Aviel Buskila

DevOps
Lead

navina

Eran Sela

Enterprise Software
Architect

VERINT

Alex Kuzentsov

AI Engineering &
DevOps Leader

CEVA

DEVOPS EXPERTS

LEARN FROM INDUSTRY EXPERTS

This Industry-recognized AI Engineering course will teach you current and in-demand skills, ensuring you stay ahead of the curve in a fast-changing industry.

WORK ON A REAL-LIFE USER PROBLEM

Practical skills are key to succeed and stand out in the market. By working on practical tasks throughout the course, you'll master the skills of a great AI Engineer.

LEARN AMONGST PROFESSIONALS

With a network of likewise professionals, enjoy the unique perspective and professional experience of your classmates.

CONNECT WITH THE INDUSTRY

Expect dedicated career guidance, access our industry hiring partners, and find your future employment in AI Engineering.

DEVOPS EXPERTS

OUR ALUMNI WORK WITH THE BEST

***A partial list of 600+ companies**

DEVOPS EXPERTS

WHAT YOU'LL LEARN

Beit Silver (9th floor), Abba Hillel 7, Ramat Gan | 052-4100676 | info@devopsexperts.co.il

Topic	Description
Python Essentials	• Python Syntax & Semantics • Functions, Modules, and Packages • Virtual Environments and Dependency Management (Pip, Poetry, Conda) • Basic File I/O and OS Operations • Exception Handling • Intro to OOP in Python
Natural Language Processing (NLP)	• Text Preprocessing (Tokenization, Stopword Removal, Lemmatization) • Word Embeddings (Word2Vec, GloVe, FastText) • Named Entity Recognition (SpaCy, HuggingFace Transformers) • Text Classification and Sequence Labeling • Sentence Similarity and Embedding Models (SBERT, USE)
Advanced NLP with RAG	• RAG architecture • Basic RAG pipeline Demo using open-source tools (e.g., FAISS, HuggingFace Transformers), document ingestion, embedding, and retrieval • Practical use cases like document Q&A or knowledge-grounded chatbots

Machine Learning Foundations	• Overview of Supervised vs. Unsupervised Learning
	• Linear and Logistic Regression
	• Decision Trees and Random Forests
	• Gradient Boosting Frameworks
	  ○ CatBoost
	  ○ XGBoost
	  ○ LightGBM
	• Model Evaluation Metrics (Accuracy, Precision, Recall, F1, AUC)
	• Cross-validation and Hyperparameter Tuning (GridSearchCV, Optuna)

Topic	Description
GenAI topics	• Multimodal AI • Diffusion Models • Autoregressive Models

Introduction to LLMs and Language Modeling	• Architecture Basics (Transformer, Attention, Decoder-Only)
	• Pretraining vs. Fine-tuning
	• Model Families Overview
	  ○ GPT (OpenAI)
	  ○ Claude (Anthropic)
	  ○ LLaMA (Meta)
	  ○ Mistral, Falcon, Cohere (mention only)

LLM Integration	• Open WebUI • OpenAI API Integration • Anthropic Claude API • AWS Bedrock (Multi-model abstraction, authentication, cost, latency) • Llama.cpp (Local LLM Runtime, Quantization, System Requirements) • Qwen3 • LangChain and LlamaIndex Overview
Prompt Engineering	• Prompt management • Core Principles (Instruction Following, Temperature, Top-p, Role Prompting) • Chain of Thought (CoT) and ReAct Patterns • Few-shot vs. Zero-shot Prompting • Prompt Evaluation and Iteration • Hands-on Labs with Prompt Engineering

Topic	Description
Applied LLM Engineering	• Model distillation • MCP Server/Client Architecture • Server: Queuing, scheduling, inference management • Client: Structured requests, retries, output handling • Vibe Coding Examples (LLM-powered workflows)
Infrastructure and Deployment	• Containerization with Docker • Serving APIs via FastAPI / Flask • Inference at Scale (batch, streaming, real-time) • GPU Resource Management • Monitoring and Logging (Prometheus, OpenTelemetry, W&B)
Automation and Workflow Orchestration with n8n	• Introduction to n8n (low-code workflow automation) • Building and Triggering Workflows (HTTP, Cron, Webhook) • Integrating APIs (OpenAI, Claude, custom Python services) • LLM Response Handling within n8n nodes • Deploying n8n Workflows on Docker / Cloud • Using n8n for Data Pipelining, Notification and Auto-retraining Hooks
AI Agents	• Adding Files for Context • Chatbot development • Agent Design Principles (Autonomy, Reusability, Modularity) • Planning and Decision-Making (Tool use, memory, goals) • Implementation Patterns (LangChain Agents, ReAct, Finite State Agents) • Use Cases: Data extraction, multi-step task automation, tool orchestration • Runtime Management and Cost Implication

Topic	Description
Model Reasoning	• Reasoning vs. Pattern Completion in LLMs • Inductive, Deductive, and Abductive Modes • Multi-hop Reasoning and Intermediate Steps • Tool Use to Extend Reasoning Capabilities (e.g., calculators, retrievers) • Evaluation Methods for Reasoning Quality (TruthfulQA, BBH, GSM8K)
From Code to Production	• End-to-End LLM Automation Application • Custom MCP Client/Server + n8n Workflow Integration • Real-world Deployment (CI/CD, Versioning, Failover) • Ethics, Compliance, and Security Considerations in AI Systems

COURSE PROJECT

Rolling Project: Real-World Implementation

Throughout the course, you'll develop a comprehensive AI-powered application through a rolling capstone project. This structured, hands-on approach mirrors real-world AI system development and deployment, allowing you to build incrementally, reflect on each layer, and sharpen your engineering mindset.

Phase 1: Foundation Build – AI-Powered Microservice

- Setting up the development environment and managing dependencies.
- Writing clean, modular Python code with proper error handling.
- Integrating an LLM with basic prompting capabilities.
- Handling input/output and preparing the system for automation.
- Applying basic machine learning concepts and prompt engineering in a functional prototype.

Phase 2: Workflow Integration – Modular Automation & Orchestration

- Wrap the AI microservice in a client-server (MCP) structure with support for queuing, retries, and structured requests.
- Use n8n to orchestrate workflows and automate processes using webhooks, triggers, and external APIs.
- Containerize the system using Docker to ensure repeatable, scalable deployments.
- Add logging, modular components, and performance handling to simulate production-level robustness.

Phase 3: Production Deployment – From Prototype to Live System

- Implement CI/CD pipelines for continuous updates and deployment.
- Optimize the application for real-time or batch inference and resource efficiency.
- Integrate monitoring and observability tools to track system health and usage.
- Address real-world constraints including compliance, failover planning, and responsible AI use.

DEVOPS EXPERTS

WORLD TRAINING, WORLDWIDE COMMUNITY

We reserved a seat for you!

APPLY NOW

Beit Silver (9th floor), Abba Hillel 7, Ramat Gan | 052-4100676 | info@devopsexperts.co.il