

LANGCHAIN



e-Learning Course

Unlock the power of language models with
LangChain. Learn to build AI-driven applications.

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Zetlan Technologies

COURSE MODULES

Module 1: Introduction to LangChain

- What is LangChain?
- Why use LangChain for LLM-based applications?
- Core components of LangChain
- Setting up your environment (Python, OpenAI API, LangChain install)

Module 2: Working with LLMs in LangChain

- Introduction to Large Language Models (LLMs)
- Connecting LangChain to OpenAI, Anthropic, or other LLM providers
- Prompt engineering basics
- Temperature, max tokens, and other model parameters
- Hands-on: Generating text using LangChain LLM wrapper

Module 3: Prompt Templates & Chains

- Understanding prompt templates
- Creating dynamic prompts with input variables
- Sequential Chains: Simple LLMChain and MultiStepChains
- Hands-on: Building a chatbot using chains

Module 4: Memory in LangChain

- Why memory matters in LLM applications
- Types of memory (ConversationBufferMemory, SummaryMemory, etc)
- Implementing memory in LangChain
- Hands-on: Building a chatbot with memory

Module 5: Agents and Tools

- What are agents in LangChain?
- How agents interact with tools
- Built-in tools (Python REPL, Google Search, Calculator, etc.)
- Creating custom tools
- Hands-on: Implementing an autonomous AI assistant

Module 6: Retrievers and Vector Databases

- Introduction to retrieval-augmented generation (RAG)
- Using retrievers in LangChain
- Storing and retrieving data with vector databases
- Hands-on: Building a document-based AI assistant

Module 7: APIs, Integrations, and Deployment

- Exposing LangChain apps via FastAPI/Flask
- Deploying LangChain applications (AWS, GCP, Hugging Face)
- LangServe for production-ready applications
- Hands-on: Deploying a LangChain-powered API

Module 8: Advanced LangChain Use Cases

- Streaming LLM responses
- Multi-modal AI (text + images/audio)
- Fine-tuning custom models with LangChain
- LangGraph for complex workflows
- Hands-on: Creating an AI-driven workflow