

GenAI Apps: LangChain, RAG & LangGraph Agents

Learn to build generative AI applications and agents using Hugging Face, LangChain, RAG and LangGraph.

3 Days

DURATION

3

MODULES

13

TOPICS

12

HANDS-ON ACTIVITIES

COURSE OVERVIEW

This course offers a deep dive into Generative AI, starting with its foundations, Transformer architecture, and Hugging Face LLMs. Hands-on labs cover text generation, image processing, and speech recognition. Building on this, the course explores application development with LangChain and LlamaIndex, introducing prompt engineering, fine-tuning, chatbot creation, and RAG systems with vector stores. Finally, it delves into AI agents, covering Langraphs, AutoGen, and deploying agents on Azure. Each module progressively builds skills, from understanding AI models to creating practical applications and intelligent agents, ensuring a comprehensive grasp of Generative AI development.

WHO THIS COURSE IS FOR

AI Developers

Application Developers

Machine Learning Engineers

Chatbot Developers

Cloud Solution Architects

LEARNING OBJECTIVES

- Explain the foundations and Transformer architecture behind generative AI
- Apply Hugging Face LLMs for text, image and speech tasks
- Apply prompt engineering techniques including zero, one and few shot
- Fine-tune a base model on a custom dataset
- Build a conversational chatbot using LangChain
- Implement vector stores and retrievers for RAG systems
- Develop AI agents using LangGraph and AutoGen
- Deploy AI agents on Azure

3 Modules, 13 Topics

01

3 Labs

Generative AI

TOPICS

- Understanding background and backdrop of generative AI
- Understanding Transformer architecture
- Introduction to Hugging Face Large language models (LLM)

02

Lab

Lab

Lab

Lab

Lab

2 Labs

Application Development - Langchain, LlamaIndex

TOPICS

- Prompt engineering and techniques - zero shot, on shot and few shot
- Fine tuning model on custom dataset
- Simple Langchain application
- Creating a Conversational customised chatbot on LLM
- Vector stores and retrievers
- Understanding Retrieval augmented generating system

03

Lab

Lab

AI Agents

TOPICS

Introduction to agents · Agents on Langraphs · Agents on Autogen · AI Agents on cloud Azure

Practise What You Learn

#	MODULE	ACTIVITY
01	Generative AI	LABS ■ Language text - Text completion, classification, translation, sentence similarity ■ Text to image, image to text, question answering Image based, Object detection, image captioning ■ Automatic speech recognition
02	Application Development - Langchain, LlamaIndex	Lab: Prompt engineering Lab: Finetuning a base model on custom dataset Lab: Simple langchain application Labs: Chatbot creation Labs: Vector store and retrievers LABS ■ PDF RAG ■ QnA RAG
03	AI Agents	Labs: Lang graphs Labs: Autogen

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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✉ info@koenig-solutions.com