KOENIG
step forward

KOENIG SOLUTIONS · COURSE OUTLINE

Agentic AI: LangGraph, CrewAI & Autogen

Learn to build AI agent workflows with LangGraph, CrewAI and Autogen, and fine-tune LLMs using LoRA, qLoRA and RLHF.

44 Hours	6	29
DURATION	MODULES	TOPICS

COURSE OVERVIEW

This Agentic AI course is a 44-hour, hands-on program covering popular agentic frameworks like LangGraph, CrewAI, and Autogen. It guides learners through building AI agent workflows, understanding advanced architectures, deploying custom LLM-based agents, and fine-tuning models using LoRA, qLoRA, and RLHF. Capstone projects reinforce real-world skills.

WHO THIS COURSE IS FOR

This course is ideal for individuals with a background in Python and machine learning, including Data Scientists, Machine Learning Engineers, AI Researchers, Software Developers, IT Professionals, Data Analysts, AI Enthusiasts, Python Programmers, Deep Learning Specialists, Technical Leads and Managers, UX/UI Designers with an interest in AI, Automation Engineers, Research Scholars, AI Product Developers, etc.

LEARNING OBJECTIVES

- Explain agentic architecture and generative AI with and without agents
- Describe concepts such as tools, function calling and reasoning in LLMs
- Build sequential and multi-agent systems using CrewAI
- Implement graph-based workflows with LangGraph and LangChain
- Configure multi-agent systems and human-in-the-loop with Autogen
- Apply parameter-efficient fine-tuning methods such as PEFT and qLoRA
- Explain RLHF techniques including DPO, PPO and GRPO
- Develop retrieval-augmented generation systems using embeddings

COURSE SYLLABUS

6 Modules, 29 Topics

01

Introduction to AI Agent

TOPICS

- Introduction to the generative AI application with Agents and without agents
- Understanding agentic architecture
- Understanding of concepts like tools, function calling, Reasoning, LLMs support
- Demo on an AI application with and without agent

02

Introduction to Crew AI

TOPICS

- Introduction to Agentic AI Framework CrewAI
- Understanding concepts like agents, flows, crews, tools available
- **Demo:** making a sequential crew
- **Demo:** Building multi ai agentic system with vision and text models

03

Agentic Framework: Langgraph and Langchain

TOPICS

- Understanding the framework of Langraph and Langchain
- Understand Graph based work flow
- Using different models from Huggingface, ollama
- **Demo:** Customise Agentic chatbot
- **Demo:** Agentic RAG system

04

Autogen Agents Framework

TOPICS

- Understanding Autogen 0.4 api
- Understanding concepts like Models, messages, teams, termination, human in loop
- **Demo:** Building multi agentic system
- **Demo:** Building an account payroll process automated with agent

05

LLM Fine Tuning

TOPICS

- Understanding process of building AI application
- Understanding fine tuning, prompt engineering and RAG
- Parameter efficient finetuning
- Demo: PEFT
- Understanding Qlora
- Demo: Qlora

06

RLHF and Prompt Engineering

TOPICS

- Understanding Prompt engineering [Theoretical]

UNDERSTANDING RLHF AND ITS TECHNIQUES [THEORETICAL]

- DPO
- PPO
- GRPO
- Understanding embedded based retrieval systems
- Demo: RAG

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.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training | Live Online Classes (ILO) | Fly-Me-A-Trainer (FMAT) | Flexi (Self-Paced) | 1-on-1 Training

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