

Agentic AI Mastery: Concepts, Frameworks, and Applications

Duration: 44 hours

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.

Target Audience:

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.

Course Content

Module 1: Introduction to AI Agent

- 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

Module 2: Introduction to Crew AI

- 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

Module 3: Agentic framework: Langgraph and Langchain

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

Module 4: Autogen Agents Framework

- 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

Module 5: LLM Fine tuning

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

Module 6: RLHF and Prompt engineering

- Understanding Prompt engineering [THEORITICAL]
- Understanding RLHF and its techniques [THEORITICAL]
 - DPO
 - PPO
 - GRPO
- Understanding embedded based retrieval systems
- Demo: RAG