

Create AI Agents Using LangGraph

Duration: 2 Days (16 Hours)

Learning Objectives:

After completing this course, students will be able to:

- Understand LangGraph and its role in AI Agent development.
- Build AI agents from scratch using LangGraph.
- Utilize key LangGraph components to structure AI workflows.
- Implement agentic search tools for AI-driven decision-making.
- Work with persistence and streaming for long-term agent memory.
- Incorporate human feedback in AI agent workflows.
- Develop AI-powered applications like an Essay Writer.
- Explore LangChain resources for enhancing AI agents.

Pre-requisite:

- Basic understanding of AI and Machine Learning.
 - Familiarity with Python and LangChain framework.
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Module 01: Introduction to LangGraph

- Overview of LangGraph and its significance in AI.
- How LangGraph enables structured AI workflows.
- When to use LangGraph for AI agent development.

Module 02: Build an AI Agent from Scratch

- Core concepts of AI agent development.
- Step-by-step process of creating an AI agent.
- Hands-on: Implementing a basic AI agent in LangGraph.

Module 03: LangGraph Components

- Understanding LangGraph nodes and edges.
- Designing modular AI agents with reusable components.
- Hands-on: Building and testing different LangGraph components.

Module 04: Agentic Search Tools

- What are agentic search tools?
- Implementing intelligent search capabilities in AI agents.
- Hands-on: Creating an AI-powered search assistant.

Module 05: Persistence and Streaming

- Enabling memory and long-term knowledge retention in AI agents.
- Implementing streaming-based interactions for real-time data processing.
- Hands-on: Building an AI agent with persistence and streaming.

Module 06: Human in the Loop (HITL) AI Agents

- Why human oversight is essential in AI workflows.
- Methods for integrating human feedback into AI agents.
- Hands-on: Implementing human-in-the-loop decision-making.

Module 07: AI-Powered Essay Writer

- Designing AI agents for content generation.
- Optimizing LLMs for structured writing tasks.
- Hands-on: Building an AI essay writer using LangGraph.

Module 08: LangChain Resources & Best Practices

- Exploring LangChain tools and libraries for AI agents.
 - Optimizing AI workflows with pre-built LangChain utilities.
 - Hands-on: Using LangChain with LangGraph for enhanced AI applications.
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