Enterprise Agentic AI: Architecting Copilot-Driven Multi-Agent Systems

Duration: 40 hours

Course Overview

This advanced course offers a comprehensive journey through the design, deployment, and governance of generative and agentic AI systems in enterprise environments. Beginning with foundational concepts and strategic adoption frameworks, learners explore Copilot Studio and agentic architectures like LangChain, AutoGen, and CrewAI. Through hands-on labs and case studies, participants build chatbots, orchestrate multi-agent workflows, and integrate AI with Microsoft services such as Azure, SharePoint, and Power Platform. The curriculum emphasizes responsible AI principles, optimization techniques, and governance best practices, culminating in a capstone project where learners develop and present a fully integrated, enterprise-ready AI solution.

Note: The students need to have their own subscription access for Google Vertex AI and Microsoft Azure to perform Labs.

Pre-requisites

- Basic understanding of AI and machine learning concepts, including generative AI and LLMs
- Familiarity with Microsoft 365 and Power Platform, especially Power Automate, Power Apps, and Microsoft Teams
- Working knowledge of Copilot Studio including bot creation and publishing
- Experience with cloud platforms, particularly Azure services such as Azure OpenAI, Logic Apps, and Azure Functions
- Introductory scripting proficiency in JavaScript or Python, and comfort with JSON, REST APIs, and adaptive cards
- Exposure to agentic frameworks (e.g., LangChain, AutoGen, CrewAI) is helpful but not mandatory
- Basic understanding of web technologies (e.g., Node.js, SharePoint integration)
- Familiarity with prompt engineering and LLM-based application design is advantageous

Course Agenda

Module 1: Foundations of Generative and Agentic AI

- Overview of Generative AI and agentic AI in the enterprise
- Strategic adoption, change management, and leadership in AI transformation
- Architecture, core principles: Copilot Studio and Agentic frameworks (LangChain, AutoGen, CrewAI)
- Setting up Copilot Studio and agentic systems, comparing capabilities
- Hands-on Lab: Build a simple FAQ chatbot and a reasoning agent using Copilot/Agentic framework

Module 2: Workflow, Collaboration, and Customisation

- Designing multi-step workflow triggers, agent-based team systems, and shared objectives

- Creating agents for system implementation, role assignment, coordination
- Expanding Copilot Studio/Agentic system with plugins, adaptive cards, connectors
- Case Study: AI agents in business automation (HR/finance/project tasks)
- Hands-on Lab: Design an automated workflow with multi-agent collaboration to achieve a shared objective

Module 3: Cloud Integrations, Hybrid Systems, and Deployment

- Integrating agents with Azure, Node.js, SharePoint, and other Microsoft services
- Hybrid frameworks: Copilot Studio + LangChain/AutoGen for orchestration
- Prompt engineering, AI model tuning with Azure OpenAI, Gemini API, Ollama, Hugging Face
- Tool integration, cost implications, infrastructure planning
- Hands-on Lab: Build a Copilot-powered website content generator and hybrid AI workflow using multiple frameworks

Module 4: Responsible AI, Governance, and Optimization

- Responsible and ethical AI principles, compliance, audit trails, governance
- Microsoft's Responsible AI framework and best practices for multi-agent governance
- Optimization techniques for agent coordination, memory and latency reduction, security guidelines
- Advanced integrations: Teams, Power BI, Dynamics 365
- Hands-on: Design a multi-agent workflow managing real enterprise data with full platform integration (Copilot, Agentic frameworks)
- Benchmark/compare solutions: Google Vertex AI, AWS Bedrock

Module 5: Capstone Project, Evaluation, and Wrap-Up

- Full capstone: Build and demonstrate an enterprise-ready solution (conversational chatbot, agentic workflow, automation)
- Open Q&A
- Next steps for implementation and upskilling