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Sign up

Microsoft Agent Framework Training: AI Agent Development in the Enterprise

2 days (14 hours)

Overview

Microsoft Agent Framework is an open-source framework for creating, orchestrating, and deploying AI agents and multi-agent workflows using Python and .NET.

Our Microsoft Agent Framework training will enable you to develop enterprise AI agents capable of using tools, maintaining state, executing workflows, and integrating with your internal data and applications.

You will learn how to create agents with the Microsoft Agent Framework, connect them to business functions, APIs, and data sources, and then structure multi-step scenarios with session management and human validation.

You will be able to orchestrate multiple specialized agents using , define controlled execution paths, and adapt the architecture to meet business needs.

The training will also cover key challenges related to security, observability, telemetry, quality, testing, and the industrialization of AI agents in an enterprise context.

Upon completion of this training, you will be able to design, develop, and deploy an enterprise AI agent using the Microsoft Agent Framework, in Python or .NET.

Like all our courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Create AI agents with the Microsoft Agent Framework.
- Develop agents using Python or .NET.
- Connect an agent to enterprise tools, APIs, and data.
- Implement state, session, and context management.
- Orchestrate multiple agents using multi-agent workflows.
- Add telemetry, monitoring, security, and testing to AI agents.
- Scale and prepare for the deployment of AI agents in the enterprise.

Target Audience

- .NET developers
- Python developers
- AI developers
- AI engineers
- Software architects
- AI Architects
- Microsoft Consultants
- Teams looking to develop enterprise AI agents

Prerequisites

- Basic knowledge of Python or .NET.
- Understanding of APIs and application architectures.
- General understanding of generative AI and language models.
- Basic knowledge of Azure or the Microsoft ecosystem is a plus.

Technical prerequisites

- Laptop with a stable internet connection.
- Python or .NET environment installed.
- Code editor installed, such as Visual Studio Code.
- Access to a compatible model or a Microsoft Foundry / Azure AI environment.
- Microsoft or Azure account recommended for integration exercises.

Our Microsoft Agent Framework training program: Developing Enterprise AI Agents

[Day 1 - Morning]

Getting Started with Microsoft Agent Framework

- Introduction to the Microsoft Agent Framework
- Positioning of the Microsoft Agent Framework within the Microsoft AI ecosystem

- Understanding the connections with Semantic Kernel and AutoGen
- Creating AI agents with Python or .NET
- Understanding Agents, Tools, Workflows, and States
- Identifying use cases suitable for enterprise AI agents

[Day 1 - Afternoon]

Tools, functions, and integration with enterprise data

- Connecting an agent to business functions and tools
- Create reusable tools to enhance the agent's capabilities
- Interacting with APIs, documents, and internal data sources
- Structure inputs and outputs to ensure reliable responses
- Handle errors, validations, and execution limits

Stateful agents and long-running scenarios

- Understand state management in the Microsoft Agent Framework
- Implement session management
- Preserving the context of an interaction
- Managing long-running scenarios and multi-step tasks
- Integrating human validation into an agent workflow
- Hands-on Workshop: Building a stateful agent capable of tracking a request across multiple steps.

[Day 2 - Morning]

Multi-agent workflows and orchestration

- Creating workflows with the Microsoft Agent Framework
- Orchestrating multiple specialized agents
- Define execution paths and coordination rules
- Using graph-based workflows
- Understand when to use a single agent or a multi-agent workflow
- Hands-on workshop: Design a multi-agent workflow to handle a complete business process.

[Day 2 - Afternoon]

Observability, security, and quality of AI agents

- Implementing telemetry and execution monitoring
- Trace calls to models, tools, and workflows
- Implement best practices for security and access control
- Identify risks related to data, third-party models, and external systems
- Test, evaluate, and ensure the reliability of agent behavior

Industrialization and deployment of enterprise AI agents

- Structure a maintainable Microsoft Agent Framework project
- Prepare for agent deployment in an enterprise environment
- Integrate agents into an Azure or Microsoft Foundry architecture
- Manage configurations, secrets, versions, and environments
- Defining a strategy for operation, monitoring, and continuous improvement
- Hands-on workshop: Finalize an enterprise AI agent ready for testing, monitoring, and integration into an IT system.

To go further

Target Audience

This training is intended for both individuals and companies, large or small, seeking to train their teams in new advanced IT technologies or to acquire specific business knowledge or modern methodologies.

Placement upon enrollment

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency in various types of technologies, as well as their expectations and personal goals regarding the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth running of the training session.

Teaching Methods

Practical Course: 60% Practical, 40% Theory. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the trainer, supported by examples and reflection sessions, and group work.

Assessment

At the end of the session, a multiple-choice questionnaire is used to verify that the skills have been properly acquired.

Certification

A certificate will be issued to each trainee who has completed the entire training program

[Training Program Webpage](#) - Appendix 1 - Training Course Description

Training organization registered under number 11 75 54743 75. This registration does not constitute state accreditation.
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