Fast Lane

Designing & Implementing Agents and Pro Code Copilots using Microsoft Agent Framework and Azure AI Agent Service (AZAGENTS)

ID AZAGENTS **Price** CHF 3,090.—(excl. VAT) **Duration** 5 days

Who should attend

- Software Architects & Engineers for Agentic AI Solutions
- Microsoft 365 & AI Pro-Code Developers

Prerequisites

- Python, C#, Typescript
- GitHub Account
- Microsoft 365 Development & Azure Development Skills helpful

Course Content

Module 1: Copilot & Agent Extensibility Fundamentals

Microsoft Foundry Essentials

- Copilots & Agent Frameworks in the Microsoft Ecosystem
- Hub-Based vs Foundry-Based Projects
- Deploying LLMs in Microsoft Foundry
- Model Router: Smart Model Selection
- Microsoft Foundry SDK & Microsoft.Extensions.AI
- Retrieval-Augmented Generation (RAG) and Azure AI Search
- Infrastructure as Code (IaC) using Azure Developer CLI

Agentic AI Fundamentals

- What Are Agents & Agentic AI?
- Prompt Engineering vs Context Engineering
- Knowledge Integration & Agentic RAG
- Deep Reasoning & ReAct (Reasoning and Acting)
- Function Calling, REST APIs & MCP Servers
- Evaluating Generative AI Performance
- Governance & Guardrails for Responsible Agents

Implementing Model Context Protocol Servers (MCP)

- MCP Core Concepts & Architecture
- Transports: STDIO vs HTTP Streaming
- Debugging with MCP Inspector
- Authentication & Security Best Practices
- Hosting MCP's in Azure Functions

Module 2: Build Agents using Foundry Agent Service

- Introduction to Foundry Agent Service
- Threads, Runs, Messages: Managing Inputs & Outputs
- Knowledge Integration: Foundry IQ, File Search, Azure AI Search, Bing Grounding ...
- Executing Actions with Tools: Code Interpreter, Azure Functions, OpenAPI & MCP
- Automating UI Tasks using Browser Automation and Computer Use
- Tracing, Observability & Performance Evaluation
- Implementing Autonomous Agents
- Agent-to-Agent Protocol (A2A) & Connected Agents

Module 3: Orchestrate Agents using Microsoft Agent Framework

Microsoft Agent Framework Basics & Concepts

- Introduction to the Agent Framework
- Chat Clients vs Agents: Key differences
- Agent types and configuration essentials
- Integrating Microsoft Foundry agents
- Threads, Conversation management & persistence
- Implementing long-term memory
- Governance, Middleware & Observability
- Multi-modal capabilities and structured outputs

Mastering Tools & Knowledge

- Built-in tools: Code Interpreter, File Search, Bing Grounding
- Using vector stores for memory and retrieval
- Adding custom tools and calling them from agents
- Integrating OpenAPI and MCP tools
- Function-calling middleware for advanced workflows

Orchestration & Workflows

- Introduction to Multi-Agent Orchestration

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- Orchestration Patterns (Sequential, Concurrent, ...)
- Executor, Edges, Checkpoints
- Branching & Human-in-the-loop
- Observability & Workflow Visualization
- Use Agents inside workflows

Module 4: Microsoft Copilot Pro-Code Extensibility

Pro-Code Extensibility Fundamentals

- Declarative Agents vs Custom Engine Agents
- Teams Developer Portal, Microsoft 365 Agent Toolkit & DevTunnel
- Governance, Identity & Access Management

Copilot Connectors & APIs

- Designing and Implementing Copilot Connectors
- Copilot API Capabilities Overview
- Microsoft 365 Copilot Retrieval API

Declarative Agents for Microsoft 365

- Instructions & Conversation Starters
- Knowledge Sources: Web Search, SharePoint, Teams & Copilot Connectors
- Image Generation, Code Interpreter & API Plugins
- Enhancing UI with Adaptive Cards
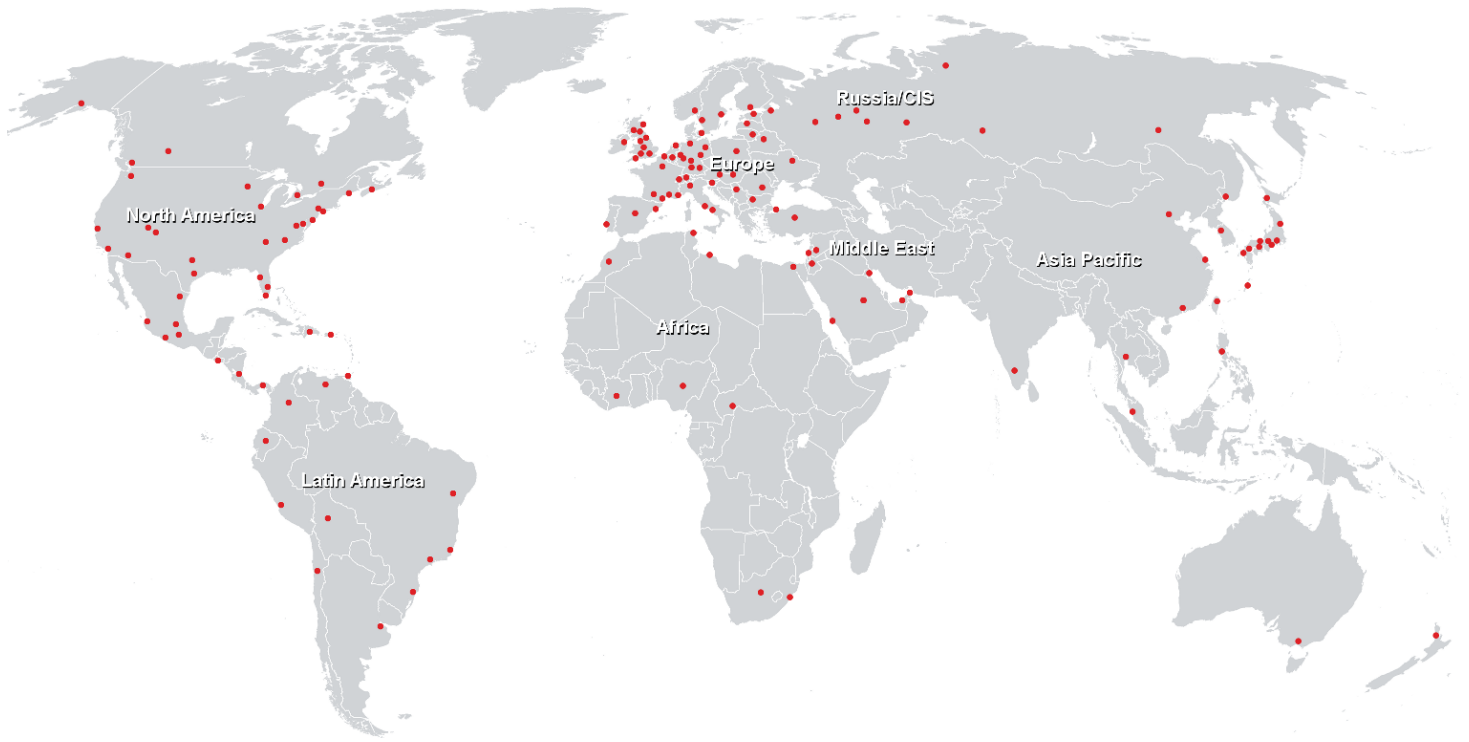
Introduction to Custom Engine Agents

- Use Cases for Custom Engine Agents
- Microsoft Agent SDK & Teams AI Library
- Exploring Microsoft Agents Tookit Playground
- Tools, Knowledge Integration

Module 5: Agent Integration using Microsoft Agents SDK

- Overview Microsoft Agents SDK
- Connecting Copilot Studio- & Microsoft Foundry Agents
- Orchestrate Multi-Agent-Solutions using Microsoft Agent Framework
- Publishing Agentic AI Solutions to Copilot Chat and Teams
- Front-End Integration using Agent–User Interaction (AG-UI) Protocol

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Training Centres worldwide

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