# Building .NET AI Agents and Apps

**Duration: 3 days** **Price: € 2499**

Open Schedule


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### Audience Course Building .NET Agents and Apps

This course is intended for .NET developers, architects, and AI enthusiasts who want to integrate intelligent features and agents into modern .NET applications.

### Prerequisites Course Building .NET Agents and Apps

Participants should have a basic knowledge of C# and .NET development. Familiarity with APIs, Visual Studio, and basic AI concepts will be helpful.

### Realization Training Building .NET Agents and Apps

The course combines theoretical sessions with hands-on labs guided by an expert trainer. Practical exercises and real-world applications are central to the training experience.

### Building .NET Agents and Apps Certificate

After completion, participants receive a certificate of participation in Building .NET Agents and Apps.

## Content Course Building .NET AI Agents and Apps

The course Building .NET Agents and Apps teaches you how to develop AI-powered applications and agents using modern .NET tools and platforms. You will explore AI integration in .NET 8, work with ML.NET, Azure AI, and OpenAI, and create smart agents using Microsoft's Semantic Kernel. By the end, you'll be ready to build intelligent, full-stack .NET apps infused with machine learning and natural language capabilities.

### Intro to AI and .NET

**Covers the AI landscape within .NET: ML.NET, ONNX, Azure AI, LLMs, Copilot, and .NET 8 features. Learn core terms like inference, agents, and prompts and explore practical use cases.**

### Smart .NET Apps with ML.NET

Walks through creating ML.NET pipelines, training models, and deploying them via web APIs. Learn evaluation, feature engineering, and how to integrate models into real .NET apps.

### OpenAI & Azure AI in .NET

Connect to OpenAI and Azure Cognitive Services via C#. Create intelligent agents, chat assistants, and analyze costs and streaming responses. Learn secure integration practices.

### AI Agents & Semantic Kernel

Learn to create AI agents using Microsoft's Semantic Kernel. Understand plugins, memory, skills, planning, and integrate external APIs like calendar/weather into goal-driven agents.

### Prompt Engineering & NL Interfaces

Focus on prompt crafting and templating, vector search, embeddings, and building RAG-based solutions in .NET. Learn how to handle hallucinations and design interactive NL interfaces.

### Deploying .NET AI Applications

Build and deploy full AI solutions with Blazor or ASP.NET Core. Use SignalR for real-time feedback, manage long tasks, and deploy with Azure. Final project ties it all together.

# Modules Course Building .NET AI Agents and Apps

| Module 1: Intro to AI and .NET | Module 2: Smart .NET Apps with ML.NET | Module 3: OpenAI & Azure AI |
|---|---|---|
| Overview of AI/ML in .NET<br>Key concepts: Models, Inference, Agents<br>ML.NET, Azure AI, ONNX<br>LLMs and modern app development<br>Cognitive services and APIs<br>Cloud vs local AI models<br>.NET 8 AI features<br>Setting up environmentCopilot in .NET productivity<br>Use cases in .NET AI | Intro to ML.NET<br>Building a sentiment model<br>Data processing & features<br>Using Model Builder<br>Saving/loading models<br>Evaluation & tuning<br>ML in ASP.NET<br>Deploying prediction APIs<br>Production model usage<br>Model integration patterns | OpenAI API in .NET<br>Azure OpenAI differences<br>API key setup & auth<br>First GPT request in C#<br>Creating chat assistant<br>Token cost management<br>Streaming responses<br>Vision/Speech/Language APIs<br>Azure Translator in apps<br>Building Azure + OpenAI bots |
| **Module 4: AI Agents & Tooling in .NET** | **Module 5: Prompt Engineering & NL Interfaces** | **Module 6: Deploying .NET AI Apps** |
| What is an AI Agent?<br>LangChain vs Semantic Kernel<br>Semantic Kernel SDK intro<br>First AI agent in .NET<br>Plugins & skills in SK<br>Planning strategies<br>Memory and context<br>External API integration<br>Logging and debugging<br>Use case: Calendar agent | Prompt engineering basics<br>Templated prompts in SK<br>Chaining prompts<br>Managing conversation history<br>Prompt tips for .NET devs<br>Vector search with embeddings<br>Using Pinecone, Redis, AI Search<br>RAG pattern implementation<br>Use case: Doc Q&A system<br>Fallback and hallucination handling | Building full-stack AI apps<br>Blazor vs ASP.NET AI UIs<br>Secure HTTP APIs<br>SignalR for live AI updates<br>Caching/throttling responses<br>Long-running workflow handling<br>Azure App Service & Containers<br>Testing strategies & logging<br>NuGet packaging of agents<br>Final project: AI assistant demo |