Data and AI: Semantic Kernel Workshop

Workshop

Focus Area: Business/IT Alignment

Duration: 1 day

Difficulty: 300 - Advanced

Overview

Learn how to build Generative AI solutions with Semantic Kernel. In this workshop we will use Semantic Kernel and services such as: Azure OpenAI, AI Speech and AI Search.

Objectives

After completing this training, students will be able to:

- Author their own copilots using Semantic Kernel.
- Create AI plugins using semantic and native functions.
- Automate complex tasks execution with planners.
- Create prompt templates to define AI functions.
- Embed Generative AI in their applications.

Course Material

- Workshop Slide Deck
- Workshop Labs
- Semantic Kernel Documentation
- Semantic Kernel Repo with Samples
- Design and implement LLM Apps with Semantic Kernel

Key Takeaways

- Design and implement LLM Apps with Semantic Kernel
- Orchestrating AI plugins with Semantic Kernel

Hands-on Labs

- Most of the concepts covered above will be supported by hands-on labs and demos.

Agenda

- Introduction to LLMs: GPTs and other models.
- Copilot Stack Overview.
- Semantic Kernel
    - Basic Concepts
    - Advanced Concepts.
- Build solutions with Semantic Kernel
    - Contact Center Analytics
    - Natural Language to SQL
    - Chat with your data

Microsoft

Course Details

Lesson 1: Background - Introduction to LLMs

- Introduction to LLMs: GPTs and other models.
- Azure AI Services Overview.
- Azure OpenAI Service Overview.

Lesson 2: CoPilot Stack and Semantic Kernel

- Introduction to Copilots.
- Microsoft Copilots.
- Copilot ecosystem (Copilots + Plugins).
- Build your own Copilots.
- What is Semantic Kernel?
- Why Semantic Kernel?
- The role of the kernel.

Lesson 3: Semantic Kernel Basic Concepts

- Native and Semantic Functions.
- Create AI Plugins from functions.
- Chain plugins together.

Lesson 4: Semantic Kernel Advanced Topics

- Add Memory to your AI Apps.
- Use Planners to automate Plugins orchestration.
- Calling external connectors.

Lesson 5: Best Practices and Lessons Learned

- Learn some best practices on service limits.
- Final discussions and wrap-up.

Recommended Qualifications

This course is designed for AI Engineers and App developers who will work on Large Language Model solution projects. Additionally, we recommend that participants already have some exposure to app development. While the basic concepts of Azure or Python Scripting are utilized, they will not be covered in this course. It is expected that attendees already possess these skills/experience.

Hardware Requirements

- An Intel Core-i5-based PC
- Microsoft/Windows Live ID to connect to the virtual environment 4 GB RAM
- 128 GB HDD
- Windows 7 SP1 or later
- Internet access with at least 10 Mbps bandwidth per student.