

Mastering Multi-Agent Systems with Azure OpenAI

Build, Orchestrate, and Deploy RAG-enabled Multiple Autonomous Intelligent Agents at Scale

This book is your definitive guide to building intelligent, autonomous, and collaborative AI systems on the Microsoft ecosystem. It covers the rapid evolution of Agentic AI and multi-agent frameworks, empowering developers, architects, and AI practitioners to design and implement real-world, production-ready multi-agent solutions using Azure OpenAI and emerging protocols such as Model Context Protocol (MCP) and A2A.

Starting with the fundamentals of Generative AI, Large Language Models (LLMs), and Agentic AI, you'll dive into the practical aspects of building agents using Microsoft's Agent Framework. You'll learn how to architect, fine-tune, and secure Azure OpenAI services, build structured multi-turn conversations, and develop specialized agents that can communicate, collaborate, and adapt autonomously. The book goes beyond theory by walking you through hands-on, industry-grade projects—such as Smart Travel Agent and Smart Restaurant—to demonstrate how multi-agent systems can transform real-world scenarios. Moving ahead, you will also explore advanced topics like Retrieval-Augmented Generation (RAG), implementing Model Context Protocol for interoperability, and ensuring ethical, responsible AI design.

By the end of this book, you'll not only understand the technical depth of multi-agent architectures but also gain the practical expertise to design, deploy, and scale intelligent, context-aware AI ecosystems on Azure.

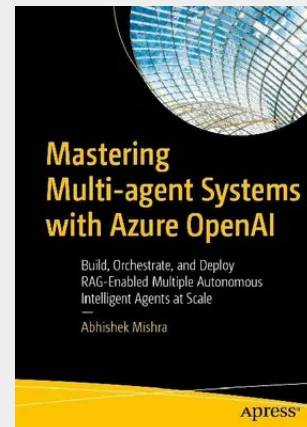
What You Will Learn:

- Multiple autonomous agents based Agentic AI solutions using Azure AI and Microsoft Agent Framework
- Multi-Agent collaboration using Model Context Protocol (MCP) and A2A
- RAG-Enabled Agents using Azure AI Search
- Best practices and pitfalls to build Agentic AI solutions along with social and ethical considerations.

Who This Book Is For:

Whether you are a developer, data scientist, or solution architect, this book will help you stay ahead in the rapidly evolving world of Agentic AI.

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