

## Practical Agentic AI

Design, Build, and Deploy Autonomous LLM Powered Systems

Shape the future of AI by engineering agents that think, act, and thrive autonomously. This book connects Agentic AI innovation with production-grade implementation, equipping developers and engineers with the tools and frameworks to deploy AI agents across diverse domains.

You'll begin by reviewing the core concepts and principles of Agentic AI, focusing on the key components of autonomous agents such as ReAct and RAG architectures, memory systems, tool orchestration, and interoperability standards. You'll then advance into complex engineering patterns, covering persistent and self-improving agents, multi-agent coordination, and security-compliant deployment strategies—critical for building robust, scalable systems.

Looking closely at next-generation capabilities such as cognitive architectures, swarm intelligence, neurosymbolic reasoning, and even quantum-enhanced decision-making, the book uses detailed case studies and complete implementations to help you move from prototypes to production. It also explains the design of agent marketplaces and economic ecosystems, laying the groundwork for interoperable, monetizable AI systems at scale. Domain-specific chapters show how these agents are already transforming finance, healthcare, retail/e-commerce, and scientific research industries.

Whether you're building a clinical diagnosis assistant that improves with every patient case or deploying an e-commerce agent that personalizes the customer journey at scale, is your go-to guide.

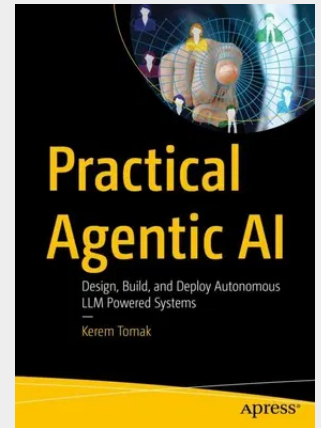
### What You Will Learn

- Design intelligent agents using advanced reasoning patterns, dynamic memory, and tool orchestration techniques.
- Build persistent, self-improving agents with capabilities like cross-session learning and safe self-modification.
- Deploy multi-agent systems at scale using orchestration frameworks, distributed architectures, and performance tuning strategies.
- Ensure security, ethics, and regulatory compliance in real-world agent deployments across domains.

### Who This Book Is For

Data scientists and machine learning engineers with experience looking to build hands-on expertise in Agentic AI. It also serves software engineers aiming to integrate AI capabilities into their products and tech leads and solution architects exploring agentic automation for scalable, real-world applications.

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