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   Titolo   Agentic Design Patterns : A Hands-On Guide to Building Intelligent
                     Systems / / by Antonio Gullí

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   Descrizione fisica 1 online resource (399 pages)

   Collana   Artificial Intelligence (R0) Series

   Disciplina   006.3

   Soggetti   Artificial intelligence
                     Machine learning
                     Multiagent systems
                     Natural language processing (Computer science)
                     Computational intelligence
                     Computer vision
                     Artificial Intelligence
                     Machine Learning
                     Multiagent Systems
                     Natural Language Processing (NLP)
                     Computational Intelligence
                     Computer Vision

   Lingua di pubblicazione Inglese

   Formato   Materiale a stampa

   Livello bibliografico Monografia

   Nota di contenuto Introduction -- Prompt Chaining -- Routing -- Parallelization --
                     Reflection -- Tool Use -- Planning -- Multi-Agent -- Memory
                     Management -- Learning and Adaptation -- Model Context Protocol
                     (MCP) -- Goal Setting And Monitoring -- Exception Handling and
                     Recovery -- Human-in-the-Loop -- Knowledge Retrieval (RAG) --
                     Inter-Agent Communication (A2A) -- Resource-Aware Optimization --
                     Reasoning Techniques -- Guardrails/Safety Patterns -- Evaluation and
                     Monitoring -- Prioritzation -- Exploration and Discovery -- Appendix.

   Sommario/riassunto This book is a practical resource designed to help developers master
                     the art of building sophisticated AI agents. As artificial intelligence
                     evolves from simple reactive programs to autonomous entities capable

of understanding context and making complex decisions, this book provides the essential patterns and proven techniques needed to construct intelligent systems effectively. Each of the 21 patterns represents a fundamental building block for creating agents that can perceive their environment, make informed decisions, and execute actions autonomously. Agentic Design Patterns: A Hands-On Guide to Building Intelligent Systems is structured as a comprehensive hands-on guide, with each chapter dedicated to a single agentic pattern. Within each chapter, you will find a detailed pattern overview, practical applications and use cases, a hands-on code example, and key takeaways for quick review. From foundational concepts such as Prompt Chaining and Tool Use to advanced topics like Multi-Agent Collaboration and Self-Correction, readers will gain practical knowledge they can immediately apply. While the chapters build on each other, you can also use the book as a handy reference, jumping to patterns that address your specific challenges. To provide a tangible "canvas" for the code examples, this guide utilizes three prominent agent development frameworks: LangChain and its extension LangGraph, which offer a flexible way to build complex operational sequences; Crew AI, which provides a structured framework for orchestrating multiple agents; and the Google Agent Developer Kit (Google ADK), which offers tools for building, evaluating, and deploying agents. By showcasing examples across these tools, you will gain a broad understanding of how these patterns can be applied in any technical environment. Building effective agentic systems requires more than just a powerful language model; it demands structure and design. Agentic patterns provide reusable, battle-tested solutions to common challenges, much like design patterns in software engineering. They offer a common language that makes an agent's logic clearer, more maintainable, and more robust. By the end of this journey, you will possess both the theoretical understanding and the practical skills to implement these 21 essential patterns, enabling you to build more intelligent, capable, and autonomous systems on your chosen development canvas. The cover image is AI-generated.