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Updated on 09/22/2026

Sign Up

AutoGen Training: L'Agentic AI

4 days (28 hours)

Overview

Our training course introduces you to AutoGen Agentic AI, a cutting-edge technology that enables the creation of autonomous multi-agent systems capable of collaborating, learning, and performing complex tasks without constant supervision.

Emerging from the convergence of intelligent agents and large language models (LLMs), this approach revolutionizes the orchestration of data workflows. This AutoGen Agentic AI training course equips you with the skills to design, orchestrate, and deploy robust multi-agent architectures integrated into your data pipelines.

You'll learn how to use AutoGen Studio, integrate external tools, and oversee end-to-end agent-based workflows, with a focus on governance and reliability.

Upon completion, you'll be able to scale ethical and high-performance agentic systems while ensuring security and compliance.

Like all our training courses, this one will introduce you to **the latest stable version** of AutoGen Agentic AI technology (0.4) and its new features.

Objectives

- Design multi-agent workflows with AutoGen
- Integrate AutoGen into data/IT pipelines
- Deploy robust, supervised agents in production
- Master agent-based design patterns
- Apply security, governance, and ethics

Target Audience

- Data analysts
- Data scientists
- AI architects

Prerequisites

- Solid foundation in Python
- Familiarity with LLMs
- Basic understanding of cloud infrastructure

Curriculum for our AutoGen Agentic AI Training Program

[Day 1 - Morning]

Introduction to the AutoGen ecosystem and agentic AI

- Fundamentals of agentic AI: autonomy, orchestration, collaboration
- Distinction Between Generative AI and Agent-Based AI
- Roles and Types of Agents in a Data Environment
- Architecture and components of the AutoGen framework
- Overview of Enterprise Use Cases
- Hands-on Workshop: Installing AutoGen and Creating Your First Agent.

[Day 1 - Afternoon]

Basic Principles of Intelligent Agents

- Concepts of Autonomous Agents: Perception, Decision-Making, Action
- Proactive vs. Reactive Agents
- Multi-agent communication and cooperation
- Orchestration protocols and control loops
- Introduction to the Separation of Roles and Responsibilities
- Hands-on workshop: CSV data analysis agent in Python.

Getting Started with AutoGen Studio

- Exploring AutoGen Studio (low-code interface)
- Debugging and Simulating Interactions Between Agents
- Visualizing Exchanges and Execution States
- Connecting to External LLMs

- Best Practices for Getting Started and Rapid Iteration
- Hands-on Workshop: Getting Started with AutoGen Studio.

[Day 2 - Morning]

Designing multi-agent workflows

- Defining agent-based workflows and responsibilities
- Design Patterns: Conceptualization, Planning, and Tools
- Role management: Assistant/specialized agents
- Optimizing agent-to-agent interactions
- Limitations and Constraints of Complex Scenarios
- Hands-on workshop: Collaborative mini-workflow.

[Day 2 - Afternoon]

Integration into data pipelines

- Connecting to Databases and APIs
- ETL / Data Lake integration and artifact management
- Process chaining and observability
- Mastering scalability and performance
- Monitoring of Runs and Key Metrics
- Hands-on Workshop: Multi-agent Data Ingestion and Processing.

Agent Security and Governance

- Permissions and access control
- Traceability: logs, audits, activity logs
- Human oversight and guardrails
- Data Governance and Compliance
- Operational Risk Management
- Hands-on Workshop: Roles, Authorizations, and Human Oversight.

[Day 3 - Morning]

Advanced orchestration with AutoGen

- Event-Driven Architecture and Asynchronous Agents
- Communication via Queues/Messages and Speaker Selection
- Conflict resolution strategies
- Distributed Execution and Robustness
- State observability and controlled retries
- Hands-on Workshop: Orchestrating a Distributed Workflow.

[Day 3 - Afternoon]

Extending AutoGen with External Tools

- Python tools and extensions (LLM clients, code execution, etc.)
- Docker, gRPC, and webhook integration
- Connecting to third-party services (search, storage, RAG)
- Monitoring via plugins and logs
- Scaling specialized agents
- Hands-on workshop: Adding an external tool to an AutoGen agent.

Testing, debugging, and optimization

- Testing strategies (unit, scenario, non-regression)
- Debugging in AutoGen Studio
- Optimizing Latency and Costs
- Failure handling and recovery
- Dedicated CI/CD pipelines
- Hands-on workshop: Testing and tuning a workflow.

[Day 4 - Morning]

Industrial and business use cases

- Scenarios in finance, healthcare, marketing, and operations
- Applications in DataOps/MLOps
- Interoperability with LangChain, Swarm, etc.
- Benchmarks and performance criteria
- Feedback and pitfalls to avoid
- Hands-on workshop: Prototyping an AutoGen business use case.

[Day 4 - Afternoon]

Deployment and production rollout

- Deployment strategies (environments, secrets, artifacts)
- Azure/AWS/GCP Cloud & Docker/Kubernetes Containerization
- High availability and scalability
- Production monitoring (Prometheus, Grafana)
- Runbooks and SLOs/SLAs
- Hands-on workshop: Deploying an agent-based workflow in production

Ethics and the Future of AI-Powered Agents

- Accountability and compliance (legal frameworks)
- Human oversight and alignment

- Risks (security, bias, misuse) and Mitigation
- Business Impacts & Evolving Data Roles
- AutoGen Roadmap and Agent-Based Trends
- Hands-on Workshop: Designing an Operational Ethical Framework.

Target Audience

This training is intended for both individuals and companies—large and small—seeking to train their teams in new, advanced IT technologies or to acquire specific business knowledge or modern methodologies.

Assessment at the Start of Training

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency in various types of technologies, as well as their expectations and personal goals for the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth running of the training session.

Teaching Methods

Hands-On Training: 60% Hands-On, 40% Theory. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the instructor—supported by examples and reflection sessions—and group work.

Assessment

At the end of the session, a multiple-choice quiz is administered to verify that participants have successfully acquired the skills.

Certification

A certificate will be issued to each trainee who has completed the entire training program.

Training organization registered under number 11 75 54743 75. This registration does not constitute state accreditation.
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