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Agent2Agent Training

1 day (7 hours)

Overview

Agent2Agent is an open protocol that enables autonomous AI agents to discover their capabilities, exchange messages, and collaborate on distributed tasks without exposing their internal mechanisms.

Our Agent2Agent training course helps you understand the principles of interoperability between agents and implement reliable communication between agent-based applications from different technical environments.

You'll learn how to design a functional Agent Card, model messages, tasks, artifacts, and statuses, and then choose the appropriate interaction methods—synchronous, asynchronous, or streaming.

The training covers creating a client and a server using the A2A Python SDK, JSON-RPC, HTTP REST, and gRPC transport protocols, as well as managing errors, notifications, and the lifecycle of long-running tasks.

By the end of the training, you will be able to build a secure, observable, and maintainable multi-agent integration by applying best practices for authentication, traceability, and validation of exchange contracts.

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

Objectives

- Understand the positioning and principles of the Agent2Agent protocol.
- Describe an agent's capabilities using an Agent Card.

- Model the messages, tasks, artifacts, and states of a collaboration between agents.
- Develop a client and a server using the A2A Python SDK.
- Secure, monitor, and test exchanges between AI agents.

Target Audience

- Python Developer
- AI Engineer
- Software Architect
- MLOps Engineer
- AI Automation Consultant

Prerequisites

- Practical knowledge of Python and asynchronous programming.
- Proficiency in web API principles using HTTP and JSON.
- Experience developing services or application integrations.
- Basic understanding of AI agents, language models, and API calls.

Technical Requirements

- Computer running Windows 10 or 11, macOS, or Linux, with at least 8 GB of RAM.
- Python 3.10 or later installed, with pip or uv.
- Code editor such as Visual Studio Code or an equivalent Python IDE.
- A stable internet connection that allows for downloading dependencies and making API calls.
- Access to a test environment and a model provider API key if the exercises use a conversational agent.

Agent2Agent Training Program

[Day 1 - Morning]

Protocol Fundamentals and Exchange Contracts

- Overview of multi-agent architectures and how Agent2Agent compares to tool access protocols.
- Principles of interoperability: opaque agents, delegation, capability discovery, and .
- Reading an Agent Card: identity, skills, entry and exit procedures, interfaces, and security requirements.
- Data model: messages, tasks, shares, artifacts, and status lifecycle.
- Interaction modes: synchronous requests, streaming, asynchronous notifications, and handling of long-running tasks.

- Hands-on workshop: analyzing multiple Agent Cards, defining a business agent's contract, and simulating an exchange of messages and tasks.

[Day 1 - Afternoon]

Implementation, security, and operation of an A2A exchange

- Implementation using the A2A Python SDK: roles of the client, server, executor, and task managers.
- Transport options: JSON-RPC, HTTP REST, and gRPC; compatibility criteria and .
- Operational management: request validation, errors, cancellation, recovery, push notifications, and artifact retrieval.
- Securing exchanges: authentication, authorization, data confidentiality, and protection of sensitive information.
- Observability and quality: logging, traces, metrics, compliance testing, and diagnostics of interactions between agents.
- Hands-on workshop: Develop an A2A server and a Python client to delegate a task and retrieve an artifact.

Target Audience

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

Pre-training Assessment

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 operation of the training session.

Teaching Methods

Hands-On Training: 60% Practical, 40% Theoretical. 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

of the skills.

Certification

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