

Introduction to AI Agents & Stock Market Analysis

Overview of AutoGen Framework

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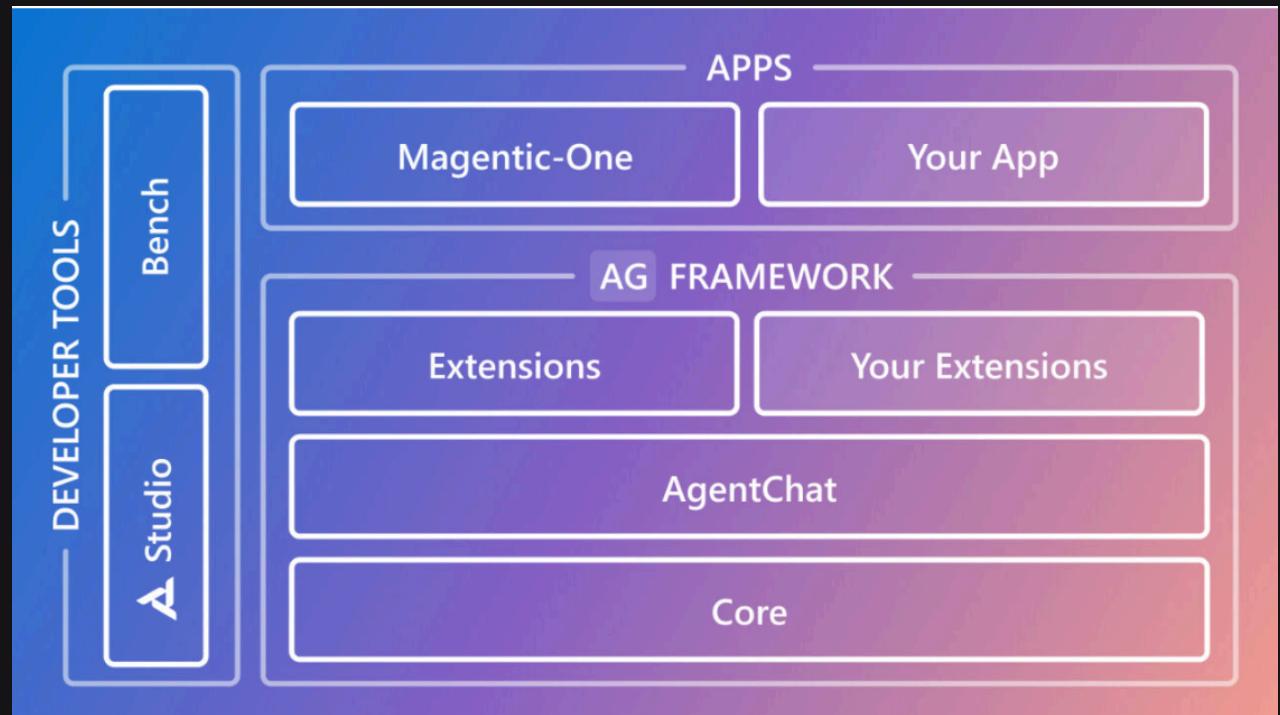
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Autogen - Overview

- Open-source framework by Microsoft for building LLM-based multi-agent applications.
- Enables agents to converse, collaborate, and solve complex tasks.



Autogen - Overview



Key principles

Customizable, conversable, and interoperable agents.



Supports:

Python 3.10+, with modular and extensible design



Use cases:

Coding, mathematics, supply chain, entertainment, etc.

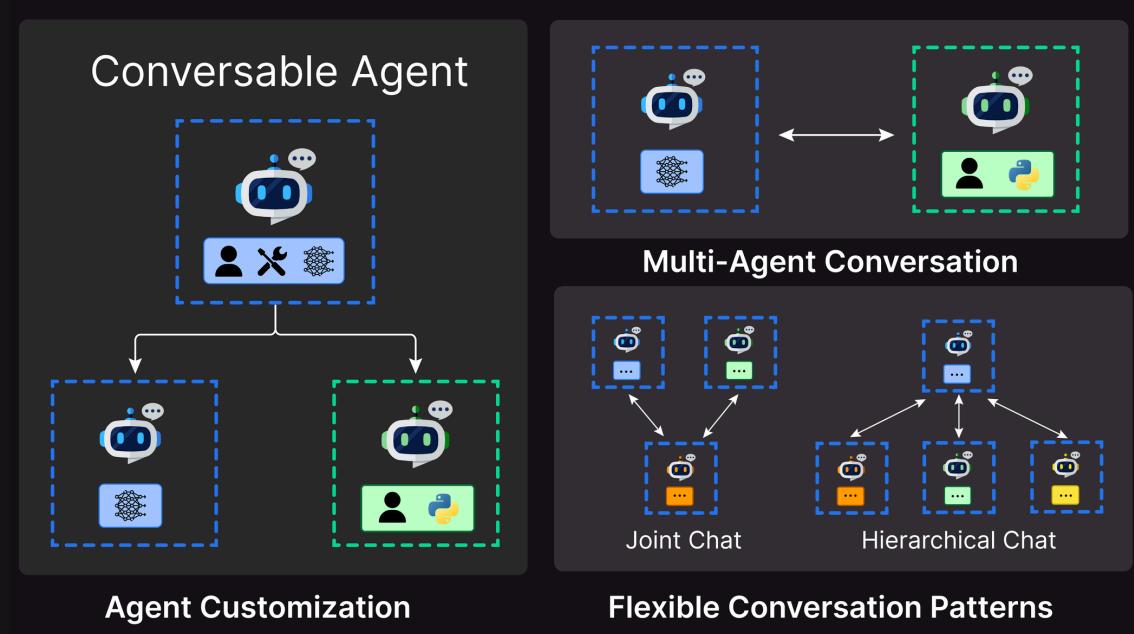


Example:

Conversational chess with LLM-driven players

Key Features of AutoGen

- **Customizable Agents:**
Combine LLMs, human inputs, and tools
(e.g., AssistantAgent, UserProxyAgent)
- **Conversational Orchestration:**
 - Agents communicate via natural language or code
- **Dynamic Workflows:**
 - Supports hierarchical, group, or finite-state machine chats

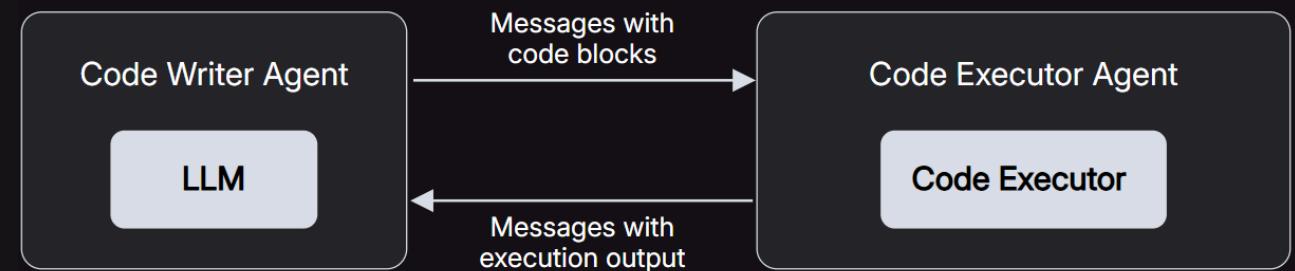


<https://microsoft.github.io/autogen/0.2/docs/Getting-Started>

Key Features of AutoGen

Code Execution

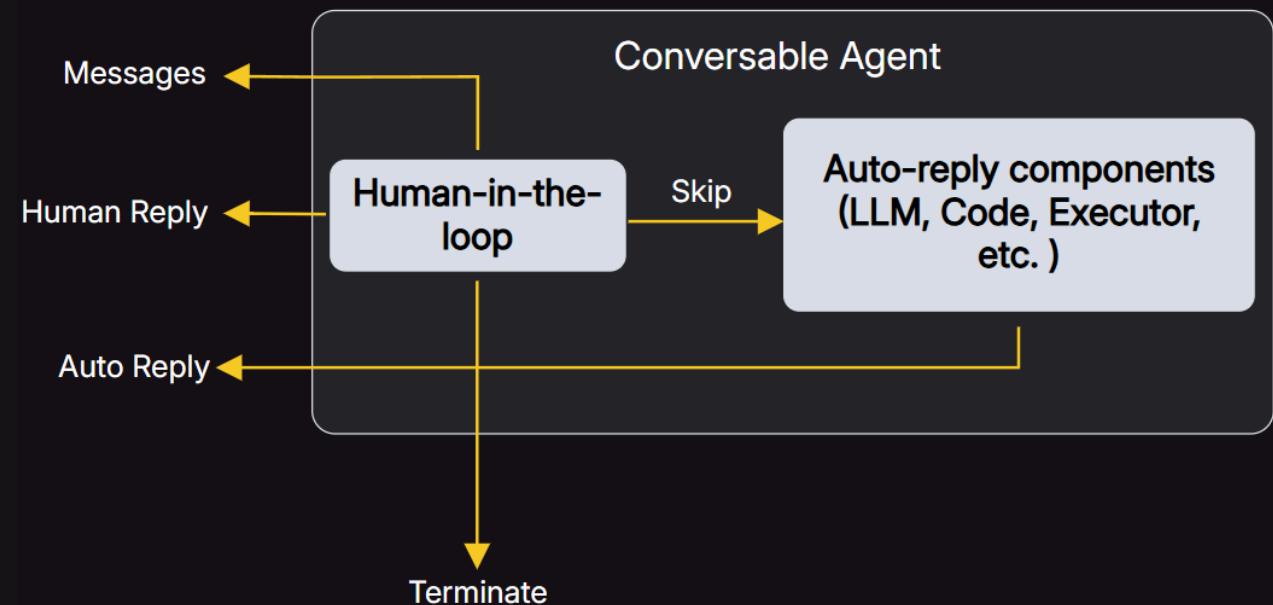
Native support for generating, running, and debugging code



Key Features of AutoGen

Human-in-the-Loop

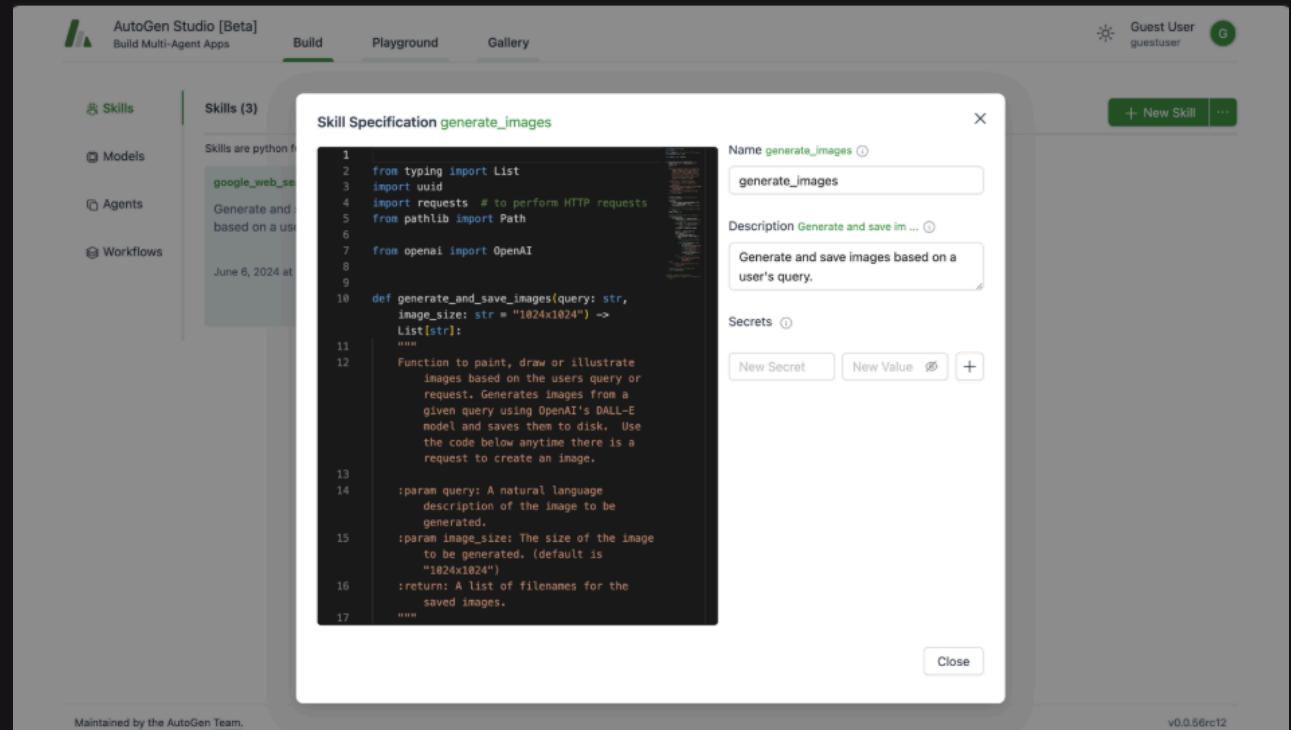
Configurable human involvement (e.g.,
ALWAYS, NEVER modes)



Key Features of AutoGen

AutoGen Studio

Low-code GUI for building workflows



<https://microsoft.github.io/autogen/0.2/docs/autogen-studio/usage>

Types of Agents in AutoGen

- **Conversable Agent:**

Base class for all agents, handles communication via messages (text or code); customizable with LLMs or tools

- **Assistant Agent:**

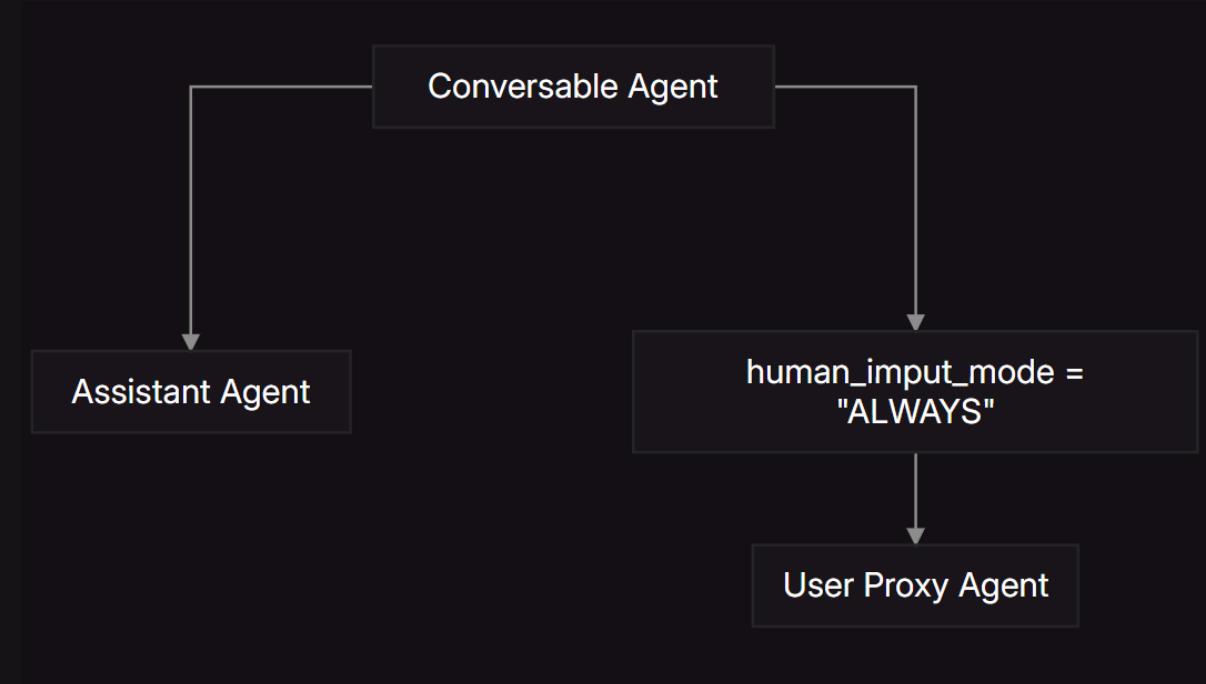
LLM-driven, specializes in generating responses or code; ideal for tasks like Q&A, coding, or analysis

- **User Proxy Agent:**

Represents human input, initiates or moderates conversations; executes code or tools on behalf of users

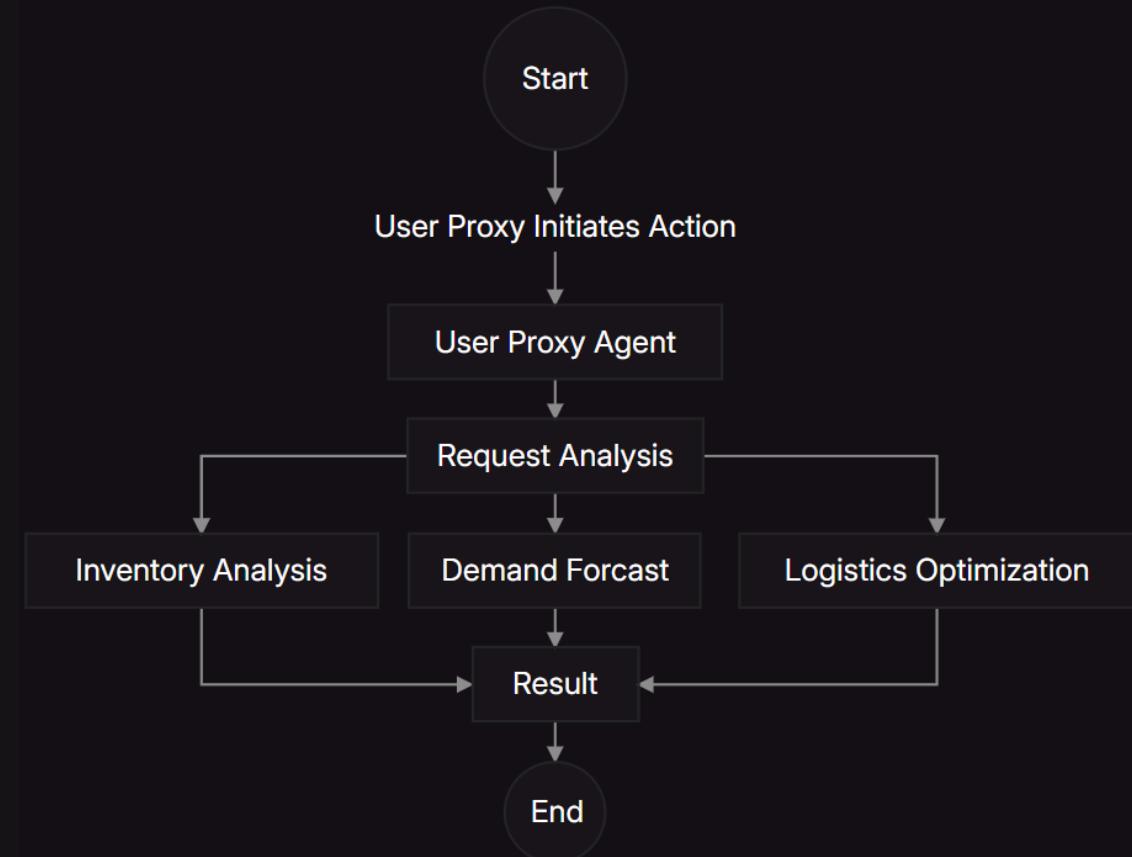
- **Example:**

Assistant writes code, User Proxy validates and executes



Multi-Agent Orchestration

- Agents collaborate to achieve collective goals (e.g., supply chain optimization)
- Supports diverse patterns:
Round-robin, hierarchical, or dynamic group chats
- Actor model (v0.4):
Agents as independent computational units exchanging messages
- Example:
Magentic-One uses specialized agents (web server, file server) for file/web tasks
- Reduces manual interactions by 3x–10x in complex workflows



Thanks