

AUTOGEN AI

AutoGen is an open-source programming framework for building AI agents and facilitating cooperation among multiple agents to solve tasks. AutoGen aims to provide an easy-to-use and flexible framework for accelerating development and research on agentic AI.

AutoGen automates workflows by coordinating specialized agents with ~~dis~~distinct roles.

Key features of AutoGen are:-

- 1) Asynchronous messaging
- 2) Modular and extensible
- 3) Observability and debugging.
- 4) Agent Specialization and also allows Inter-Agent communication.

Benefits of AutoGen:-

AutoGen is an AI framework that simplifies complex tasks, making it accessible to developers with minimal AI expertise. Its customizable design allows for seamless integration with other tools, reduces development and operational time and offers scalability without significant overhead. It also facilitates human-AI collaboration, enhancing productivity in hybrid workflows.

Use cases of AutoGen

AutoGen is used across various industries for various

purposes, including customer support automation, data processing pipelines, software testing, content generation, and workflow optimization. It automates data extraction, transformation, analysis, software testing, content generation, and streamlines internal processes. Key use cases include intelligent bots for customer support, automated testing frameworks for software reliability, content generation for businesses, and workflow optimization.

Interesting Features: ~~for~~

1. Task chaining: AutoGen allows tasks to be chained together dynamically, enabling complex workflows with minimal manual intervention.
2. Full type support: Interfaces now enforce type checks at build time, ensuring robust and cohesive code quality.
3. Cross-language support: This update enables interoperability between agents built in different programming languages, with current support for Python and .NET and additional languages in development.

AutoGen Agents:

AutoGen have different agents like: UserProxyAgent and AssistantAgent.

AutoGen's architecture is composed of specialized agents, each acting as a "brain" to perform specific tasks independently and collaborate with others to accomplish larger tasks. Key agents include UserProxyAgent that simulates human input, AssistantAgent generates text or answers.

These are idea about AutoGen AI and its benefits, features.


```
PS C:\Users\User\Desktop\INTERNSHIP\Internship2025> python --version
Python 3.13.2
PS C:\Users\User\Desktop\INTERNSHIP\Internship2025> conda create -n autogen_env python=3.9
Retrieving notices: done
WARNING: A conda environment already exists at 'C:\Users\User\miniconda3\Anaconda\envs\autogen_env'
```

Remove existing environment?

This will remove ALL directories contained within this specified prefix directory, including any other conda environments.

(y/[n])? y

Channels:

- defaults

Platform: win-64

Collecting package metadata (repodata.json): done

Solving environment: done

Package Plan

environment location: C:\Users\User\miniconda3\Anaconda\envs\autogen_env

added / updated specs:

- python=3.9

The following NEW packages will be INSTALLED:

ca-certificates	pkgs/main/win-64::ca-certificates-2025.2.25-haa95532_0
openssl	pkgs/main/win-64::openssl-3.0.16-h3f729d1_0
pip	pkgs/main/noarch::pip-25.1-pyh872135_2
python	pkgs/main/win-64::python-3.9.21-h8205438_1
setuptools	pkgs/main/win-64::setuptools-78.1.1-py39haa95532_0
sqlite	pkgs/main/win-64::sqlite-3.45.3-h2bbff1b_0
tzdata	pkgs/main/noarch::tzdata-2025b-h04d1e81_0
vc	pkgs/main/win-64::vc-14.42-haa95532_5
vs2015_runtime	pkgs/main/win-64::vs2015_runtime-14.42.34433-hbfb602d_5
wheel	pkgs/main/win-64::wheel-0.45.1-py39haa95532_0

Proceed ([y]/n)? y

Proceed ([y]/n)? y

Downloading and Extracting Packages:

Preparing transaction: done

Verifying transaction: done

Executing transaction: done

To activate this environment, use

\$ conda activate autogen_env

To deactivate an active environment, use

\$ conda deactivate

• PS C:\Users\User\Desktop\INTERNSHIP\Internship2025> conda activate autogen_env

• PS C:\Users\User\Desktop\INTERNSHIP\Internship2025> pip install autogen

Requirement already satisfied: autogen in c:\users\user\miniconda3\anaconda\lib\site-packages (0.9.1.post0)

Requirement already satisfied: ag2==0.9.1post0 in c:\users\user\miniconda3\anaconda\lib\site-packages (from autogen) (0.9.1.post0)

Requirement already satisfied: anyio<5.0.0,>=3.0.0 in c:\users\user\miniconda3\anaconda\lib\site-packages (from ag2==0.9.1post0->autogen) (4.9.0)

Requirement already satisfied: asyncler==0.0.8 in c:\users\user\miniconda3\anaconda\lib\site-packages (from ag2==0.9.1post0->autogen) (0.0.8)

Requirement already satisfied: diskcache in c:\users\user\miniconda3\anaconda\lib\site-packages (from ag2==0.9.1post0->autogen) (5.6.3)

Requirement already satisfied: docker in c:\users\user\miniconda3\anaconda\lib\site-packages (from ag2==0.9.1post0->autogen) (7.1.0)

Requirement already satisfied: httpx<1,>=0.28.1 in c:\users\user\miniconda3\anaconda\lib\site-packages (from ag2==0.9.1post0->autogen) (0.28.1)

Requirement already satisfied: packaging in c:\users\user\miniconda3\anaconda\lib\site-packages (from ag2==0.9.1post0->autogen) (24.2)

Requirement already satisfied: pydantic<3,>=2.6.1 in c:\users\user\miniconda3\anaconda\lib\site-packages (from ag2==0.9.1post0->autogen) (2.10.3)

Requirement already satisfied: python-dotenv in c:\users\user\miniconda3\anaconda\lib\site-packages (from ag2==0.9.1post0->autogen) (1.1.0)

Requirement already satisfied: termcolor in c:\users\user\miniconda3\anaconda\lib\site-packages (from ag2==0.9.1post0->autogen) (3.1.0)

Requirement already satisfied: tiktoken in c:\users\user\miniconda3\anaconda\lib\site-packages (from ag2==0.9.1post0->autogen) (0.9.0)

Requirement already satisfied: idna>=2.8 in c:\users\user\miniconda3\anaconda\lib\site-packages (from anyio<5.0.0,>=3.0.0->ag2==0.9.1post0->autogen) (3.7)

Requirement already satisfied: sniffio>=1.1 in c:\users\user\miniconda3\anaconda\lib\site-packages (from anyio<5.0.0,>=3.0.0->ag2==0.9.1post0->autogen) (1.3.1)

Requirement already satisfied: certifi in c:\users\user\miniconda3\anaconda\lib\site-packages (from httpx<1,>=0.28.1->ag2==0.9.1post0->autogen) (2025.4.26)

Requirement already satisfied: httpcore==1.* in c:\users\user\miniconda3\anaconda\lib\site-packages (from httpx<1,>=0.28.1->ag2==0.9.1post0->autogen) (1.0.9)

Requirement already satisfied: h11>=0.16 in c:\users\user\miniconda3\anaconda\lib\site-packages (from httpcore==1.*->httpx<1,>=0.28.1->ag2==0.9.1post0->autogen) (0.16.0)

Requirement already satisfied: annotated-types>=0.6.0 in c:\users\user\miniconda3\anaconda\lib\site-packages (from pydantic<3,>=2.6.1->ag2==0.9.1post0->autogen) (0.6.0)

Requirement already satisfied: pydantic-core==2.27.1 in c:\users\user\miniconda3\anaconda\lib\site-packages (from pydantic<3,>=2.6.1->ag2==0.9.1post0->autogen) (2.27.1)


```
gen) (3.3.2)
PS C:\Users\User\Desktop\INTERNSHIP\Internship2025> pip install requests pandas
Requirement already satisfied: requests in c:\users\user\miniconda3\anaconda\lib\site-packages (2.32.3)
Collecting pandas
  Downloading pandas-2.2.3-cp313-cp313-win_amd64.whl.metadata (19 kB)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\user\miniconda3\anaconda\lib\site-packages (from requests) (3.3.2)
Requirement already satisfied: idna<4,>=2.5 in c:\users\user\miniconda3\anaconda\lib\site-packages (from requests) (3.7)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\user\miniconda3\anaconda\lib\site-packages (from requests) (2.3.0)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\user\miniconda3\anaconda\lib\site-packages (from requests) (2025.4.26)
Collecting numpy>=1.26.0 (from pandas)
  Downloading numpy-2.2.5-cp313-cp313-win_amd64.whl.metadata (60 kB)
Collecting python-dateutil>=2.8.2 (from pandas)
  Using cached python_dateutil-2.9.0.post0-py2.py3-none-any.whl.metadata (8.4 kB)
Collecting pytz>=2020.1 (from pandas)
  Using cached pytz-2025.2-py2.py3-none-any.whl.metadata (22 kB)
Collecting tzdata>=2022.7 (from pandas)
  Using cached tzdata-2025.2-py2.py3-none-any.whl.metadata (1.4 kB)
Collecting six>=1.5 (from python-dateutil>=2.8.2->pandas)
  Using cached six-1.17.0-py2.py3-none-any.whl.metadata (1.7 kB)
Downloading pandas-2.2.3-cp313-cp313-win_amd64.whl (11.5 MB)
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Downloading numpy-2.2.5-cp313-cp313-win_amd64.whl (12.6 MB)
  ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 12.6/12.6 MB 2.5 MB/s eta 0:00:00
Using cached python_dateutil-2.9.0.post0-py2.py3-none-any.whl (229 kB)
Using cached pytz-2025.2-py2.py3-none-any.whl (509 kB)
Using cached tzdata-2025.2-py2.py3-none-any.whl (347 kB)
Using cached six-1.17.0-py2.py3-none-any.whl (11 kB)
Installing collected packages: pytz, tzdata, six, numpy, python-dateutil, pandas
Successfully installed numpy-2.2.5 pandas-2.2.3 python-dateutil-2.9.0.post0 pytz-2025.2 six-1.17.0 tzdata-2025.2
```