

AutoGen: Enabling Next-Gen LLM Applications via Multi-Agent Conversation

Qingyun Wu[†], Gagan Bansal^{*}, Jieyu Zhang[±], Yiran Wu[†], Beibin Li^{*}

Erkang Zhu^{*}, Li Jiang^{*}, Xiaoyun Zhang^{*}, Shaokun Zhang[†], Jiale Liu[∓]

Ahmed Awadallah^{*}, Ryen W. White^{*}, Doug Burger^{*}, Chi Wang^{*1}

^{*}Microsoft Research, [†]Pennsylvania State University

[±]University of Washington, [∓]Xidian University

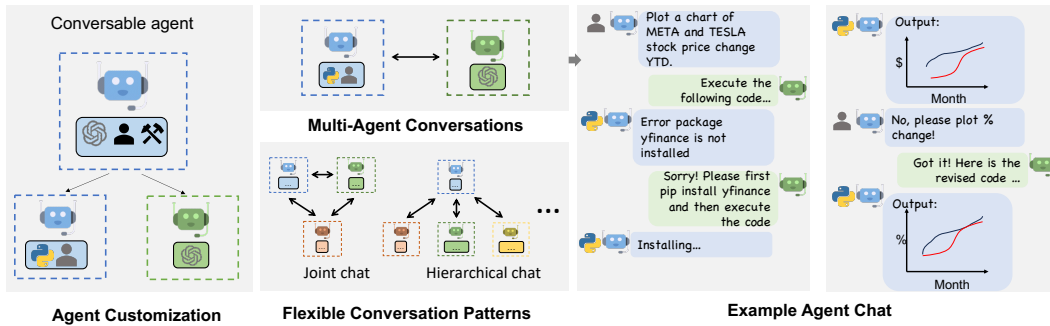


Figure 1: AutoGen enables diverse LLM-based applications using multi-agent conversations. (Left) AutoGen agents are conversable, customizable, and can be based on LLMs, tools, humans, or even a combination of them. (Top-middle) Agents can converse to solve tasks. (Right) They can form a chat, potentially with humans in the loop. (Bottom-middle) The framework supports flexible conversation patterns.

Abstract

AutoGen² is an open-source framework that allows developers to build LLM applications via multiple *agents* that can converse with each other to accomplish tasks. AutoGen agents are customizable, *conversable*, and can operate in various modes that employ combinations of LLMs, human inputs, and tools. Using AutoGen, developers can also flexibly define agent interaction behaviors. Both natural language and computer code can be used to program flexible conversation patterns for different applications. AutoGen serves as a generic framework for building diverse applications of various complexities and LLM capacities. Empirical studies demonstrate the effectiveness of the framework in many example applications, with domains ranging from mathematics, coding, question answering, operations research, online decision-making, entertainment, etc.

¹Corresponding author. Email: auto-gen@outlook.com

²<https://github.com/microsoft/autogen>