



.NET DAY SWITZERLAND

Non Profit. Community. From Developers. For Developers.

#dotnetdaych

27 August 2024

Arena Cinemas AG, Kalanderplatz 8, Sihlcity, 8045 Zürich

[NEWSLETTER SIGNUP](#)

[SOLD OUT](#)



AI
Is Amazing!

ANTHROPIC

Agentic AI: Unleash Your AI Potential with AutoGen



José Luis Latorre

Developer at Swiss Life AG | LinkedIn Learning instructor | Microsoft AI MVP



.NET User Group Zürich

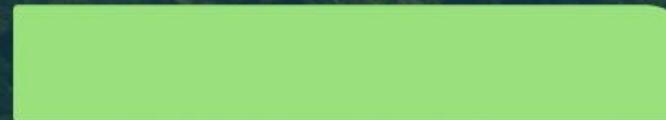
On what stage of the "Gen AI" story are you?

13



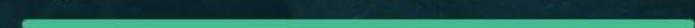
Starting (prompting, GitHub Copilot)

2



Intermediate (OpenAI SDK, AI Orchestrator
as Semantic Kernel, Langchain...)

0



Advanced (Using Agents & Agentic AI)

2



15





OFFERING
SOLUTIONS
SOFTWARE



NOSER
ENGINEERING



Agenda

- Intro
- Agentic AI
- AutoGen
- Agentic Workflows
- Ende

Agents!

Planner

tool



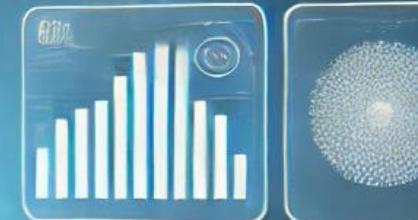
Use Tools



Use Toons



Autonodully AI
Generation - Actions



Adachonet AI
Technology



Personas!

Ask: How would you solve a blackout in Avenger City due to a problem at the power plant?...



Hulk smash darkness!!



Do not worry! With Mjolnir, I will restore light to this city



Nothing that a genius, billionaire, playboy, and philanthropist can't handle with a bit of Stark Industries technology. I'm going to sync my suit with the power plant system, deploy a couple of miniaturized Arc reactors to stabilize the grid, and, of course, upgrade the system to ensure this doesn't happen again. Give me a few minutes... and get ready to see how modern magic is done. And someone bring me a coffee while I save the city, please!

How Relevant are AI Agents?

AI Agents are incredibly relevant and a game changer for Gen AI



Strongly disagree

Strongly agree





Agentic AI!

Usual usage vs Agentic

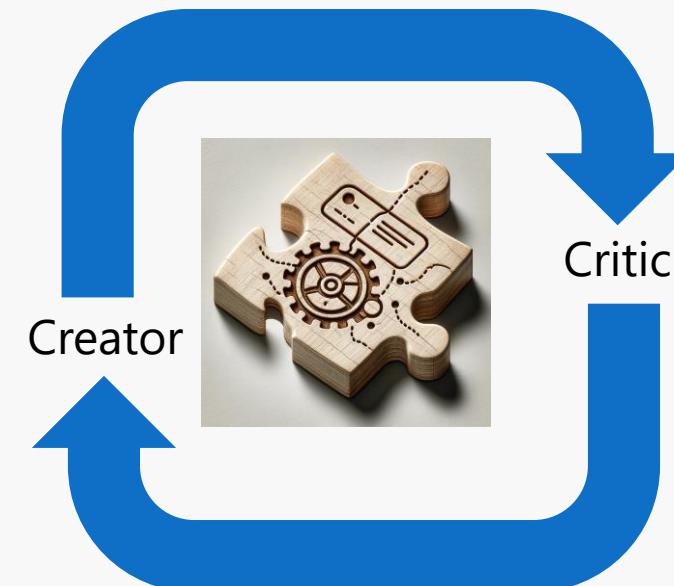
Usual Workflow

Please write me a blog post entry about .NET day for LinkedIn in one go.



Agentic Workflow

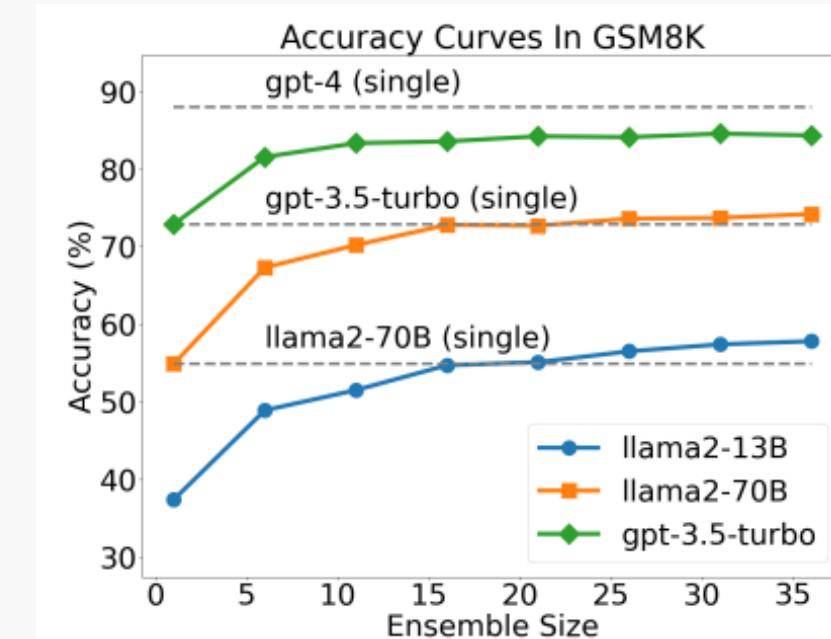
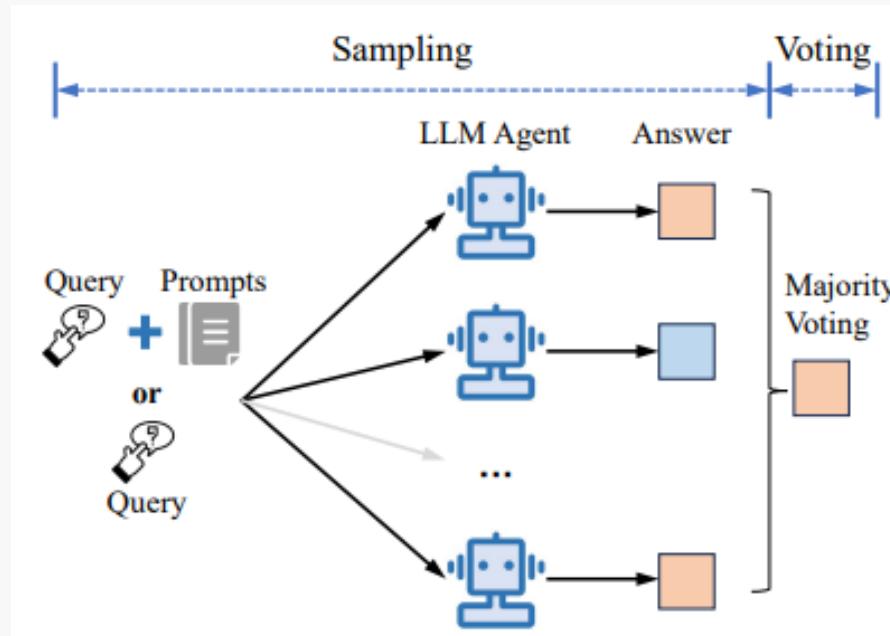
- Please write me a blog post entry about .NET day
- Need more information.
- Write the starting draft
- Consider what areas need revision
- Review for style
- Etc...



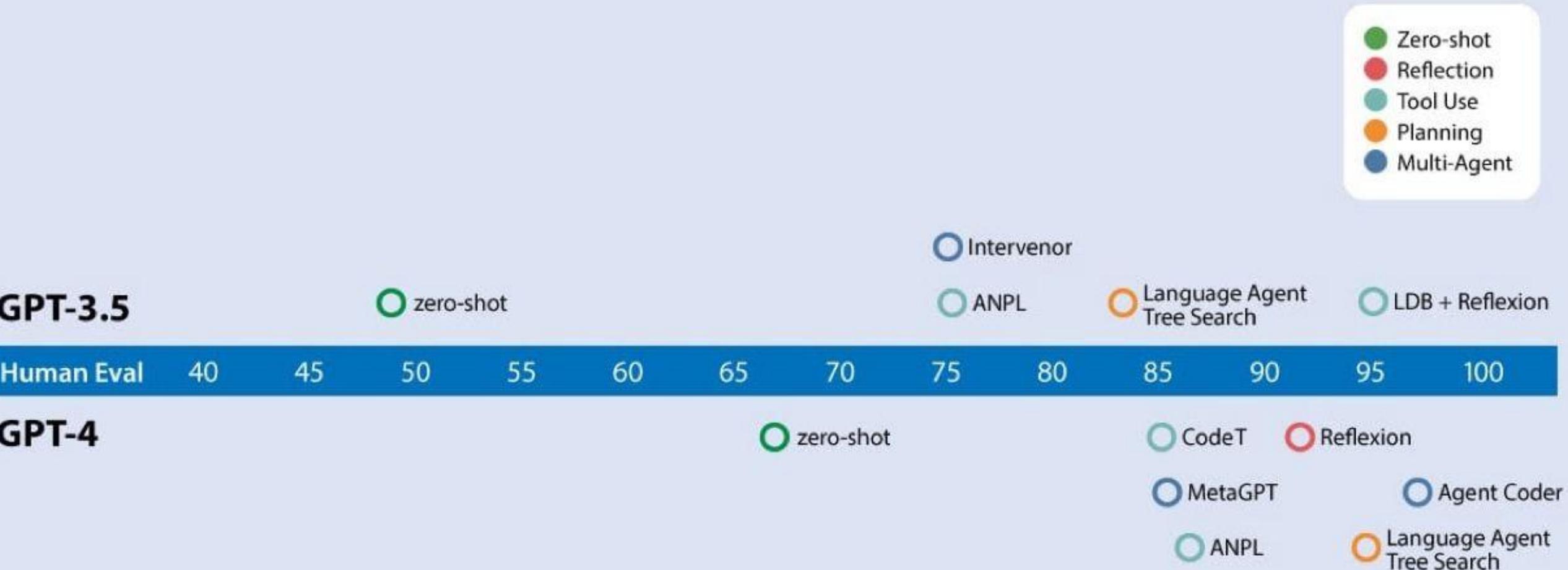
Papers, papers, papers...

More Agents is all you need

"sampling-and-voting method, the performance of large language models (LLMs) scales with the number of agents instantiated". <https://arxiv.org/abs/2402.05120>



GPT-3.5 and GPT-4 performance using zero-shot and agent workflows



Source: Andy Ng

Performance of GPT-3.5 and GPT-4 (zero-shot) on HumanEval, along with algorithms that use agent workflows on top of GPT-3.5 or GPT-4. Thanks to Joaquin Dominguez and John Santerre for help with this analysis.

"In the future, AIs are going to be like employees in our companies"
Jensen Huang, CEO, NVIDIA

"96% of executives agree leveraging AI agent ecosystems will be a significant opportunity for their organizations in the next 3 years," - Accenture, Technology Vision 2024

"Agents are not only going to change how everyone interacts with computers. They're also going to upend the software industry, bringing about the biggest revolution in computing since we went from typing commands to tapping on icons." - Bill Gates, Co-founder, Microsoft

"In terms of AI technology trends, I think for any builder, anyone building AI, if I had to pick one thing to keep an eye on, I would say it's AI agents." - Andrew Ng, CEO, DeepLearning

"I think AI agentic workflows will drive massive AI progress this year — perhaps even more than the next generation of foundation models." - Andrew Ng, CEO, DeepLearning

"...the technology is moving from thought to action," - McKinsey, Why agents are the next frontier of generative AI

"AI agents are poised to become the next step of evolution of AI for businesses in our increasingly digital society," - Lionel Sujay Vailshery, Statista

AutoGen

An Open-Source Programming Framework for Agentic AI

Getting Started - 3min 



Multi-Agent Conversation Framework

AutoGen provides multi-agent conversation framework as a high-level abstraction. With this framework, one can conveniently build LLM workflows.



Easily Build Diverse Applications

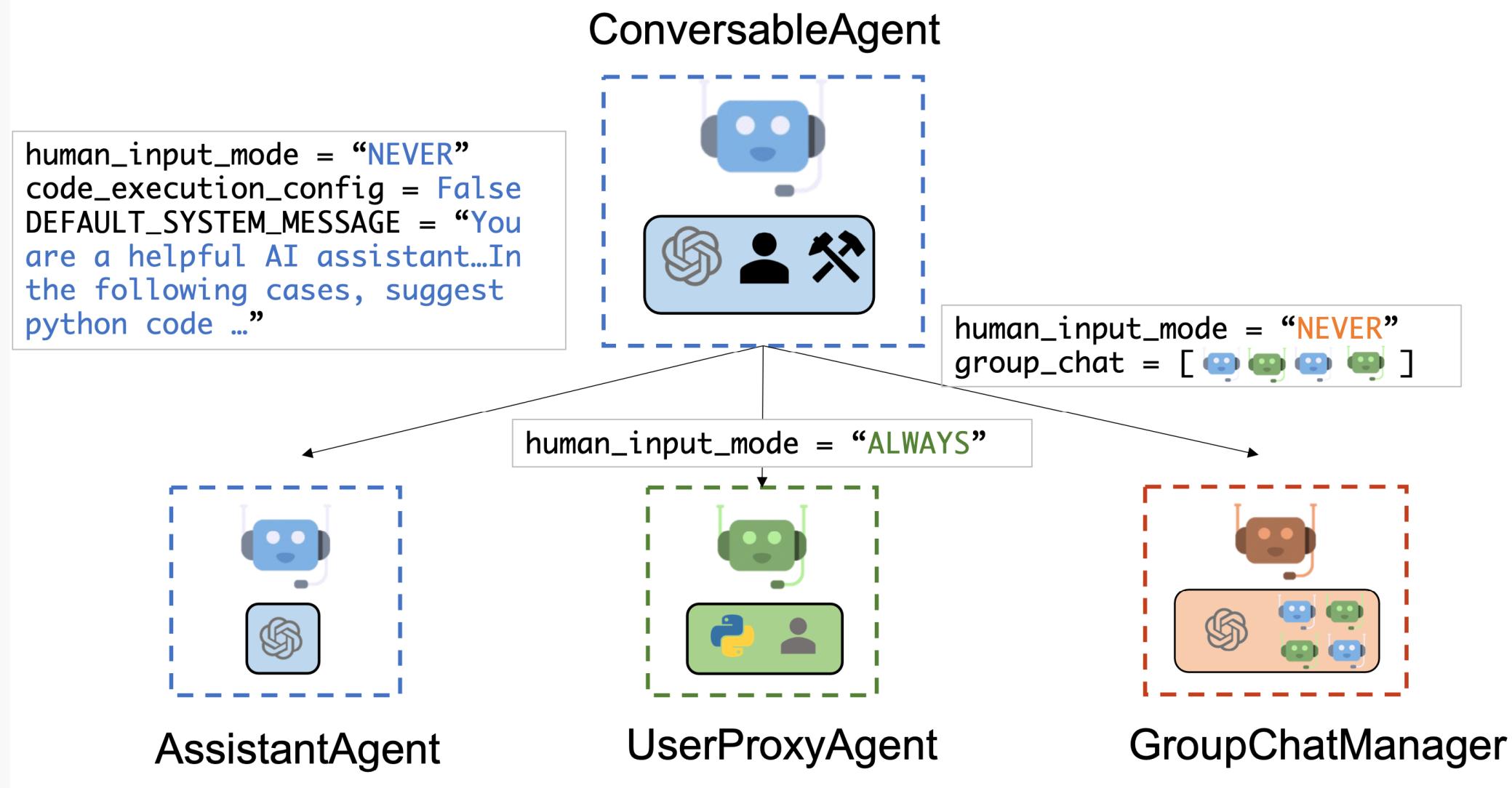
AutoGen offers a collection of working systems spanning a wide range of applications from various domains and complexities.



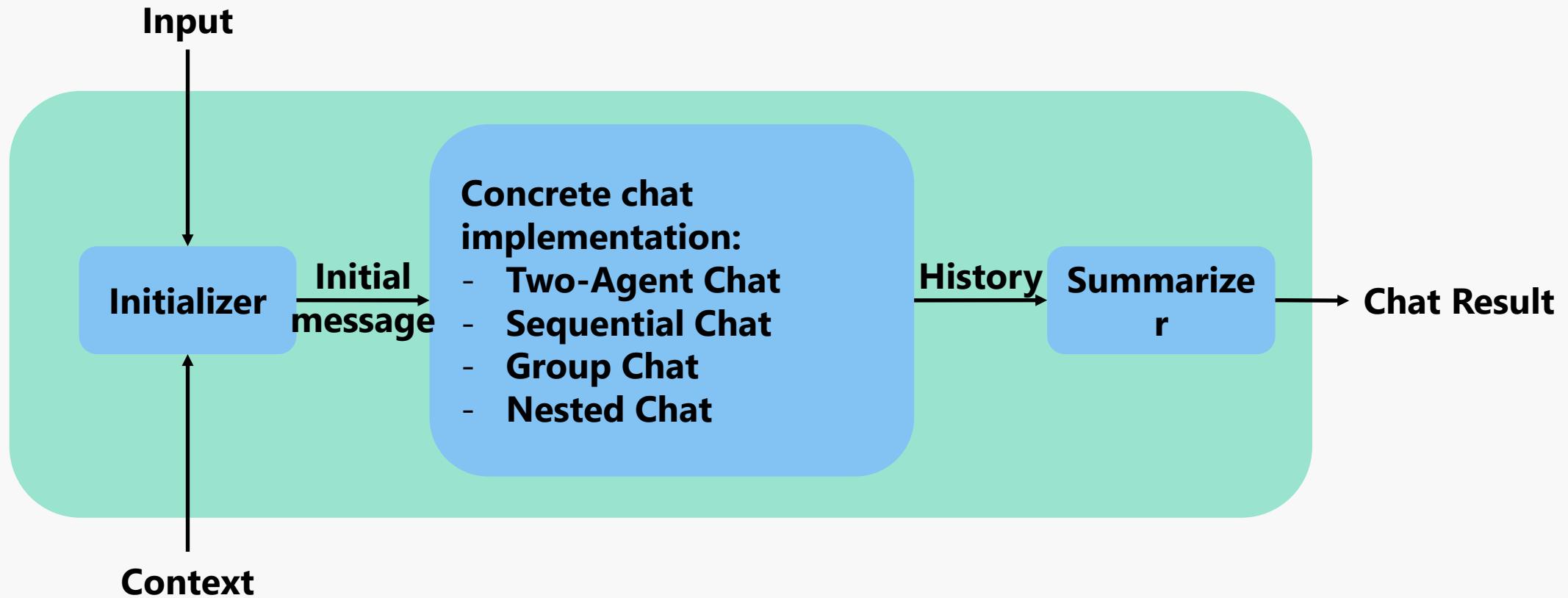
Enhanced LLM Inference & Optimization

AutoGen supports enhanced LLM inference APIs, which can be used to improve inference performance and reduce cost.

AutoGen 101 – Agent types



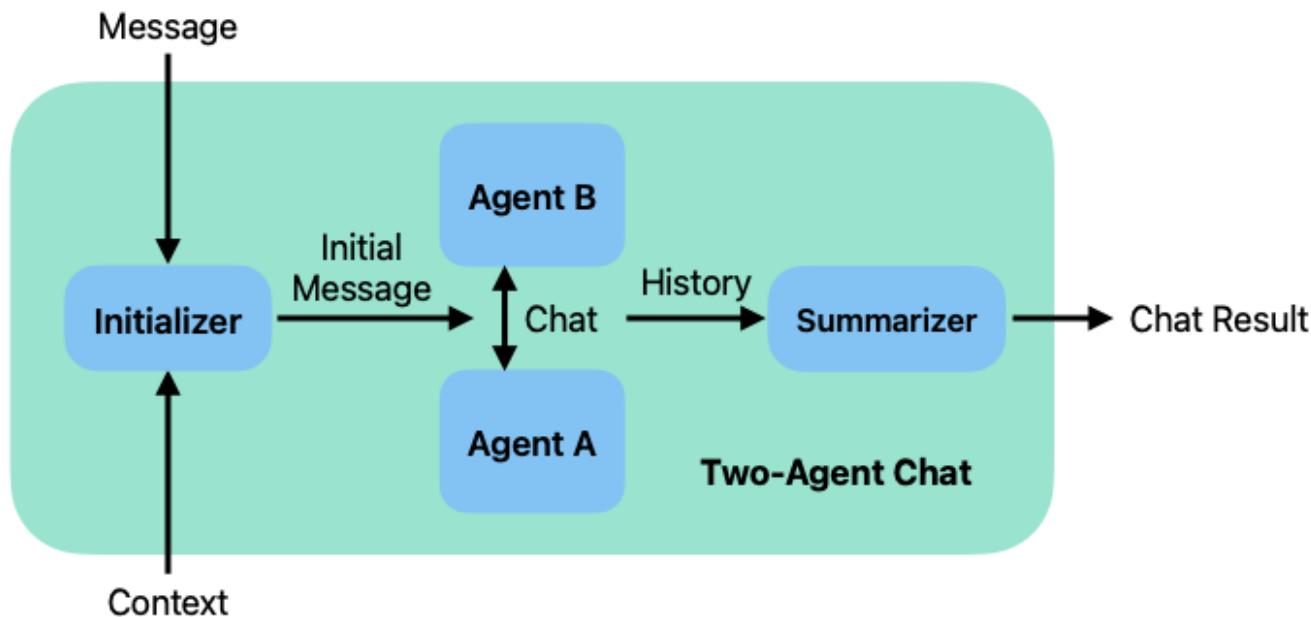
AutoGen 101 – Base Chat



AutoGen 101 – Two-Agent Chat

- Simplest chat, a round-robin sequential dialogue between two agents that iterate a “discussion” and at one point it ends due to a finalization condition or a number of iterations has been met.

E.g., "What is triangle inequality?"



E.g., summary_method: reflection_with_llm

Filter by title

Getting start

[Overview](#)[Installation](#)[agent](#)[built-in messages](#)[function call](#)[middleware](#)[group chat](#)[AutoGen.DotnetInteractive](#)[AutoGen.OpenAI](#)[AutoGen.SemanticKernel](#)[AutoGen.Ollama](#)[AutoGen.Gemini](#)[AutoGen.Mistral](#)[AutoGen.LMStudio](#)

Docs / Getting start

Get start with AutoGen for dotnet



dotnet-ci passing



chat 2k online

nuget package 0.1.0

Firstly, add [AutoGen](#) package to your project.

```
dotnet add package AutoGen
```

**NOTE**

For more information about installing packages, please check out the [installation guide](#).

Then you can start with the following code snippet to create a conversable agent and chat with it.

```
using AutoGen;
using AutoGen.Core;
using AutoGen.OpenAI.V1;
```

```
var openAIKey = Environment.GetEnvironmentVariable("OPENAI_API_KEY") ?? throw new Exception("Please");
var gpt35Config = new OpenAIConfig(openAIKey, "gpt-3.5-turbo");
```



Bring AutoGen to dotnet #48

Closed

2 tracking issues

LittleLittleCloud opened this issue on Sep 29, 2023 · 23 comments



LittleLittleCloud commented on Sep 29, 2023 • edited

[Comment guide.](#)

any insights on how to introduce AutoGen to the world of dotnet? It would be truly exciting to witness the potential agent collaboration in helping dotnet developers to create highly intelligent applications.

t and chat with it.

[@sonichi](#) [@luisquintanilla](#) [@JakeRadMSFT](#)

Update on 2024/02/12

Nightly build are available to public.

throw new Exception("Please

```
var gpt35Config = new OpenAIConfig(openAIKey, "gpt-3.5-turbo");
```

microsoft / LittleLittleCloud

Code Issues 6 Overview Repositories 120 Projects Packages Stars 50

Bring AutoGen to the Cloud

Closed

2 tracking



LittleLittleCloud

any insights or
agent collaboration?

@sonichi @l

Update

Nightly build



Xiaoyun Zhang

LittleLittleCloud

Unfollow

=oOoOo=

65 followers · 9 following

Followed by Josephrp

Pinned

Agent-ChatRoom Public

A multi-agent chatroom for AutoGen agents

C# 21 2

Torchsharp-llama Public

Implement llama 2/3 using torchsharp

C# 12 2

Torchsharp-stable-diffusion-2 Public

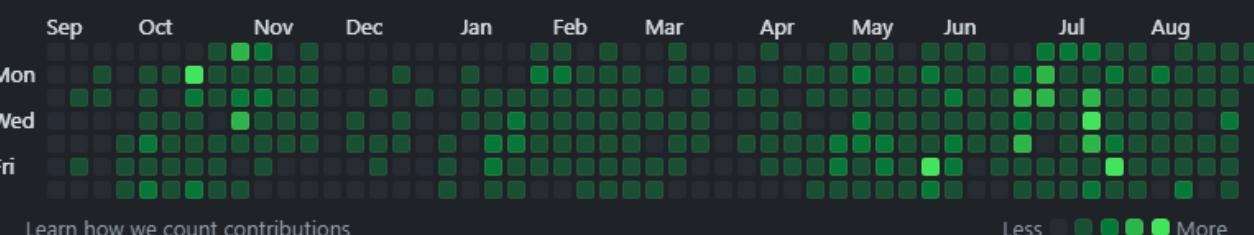
C# 7 1

AI-Agentic-Design-Patterns-with-AutoGen.NET

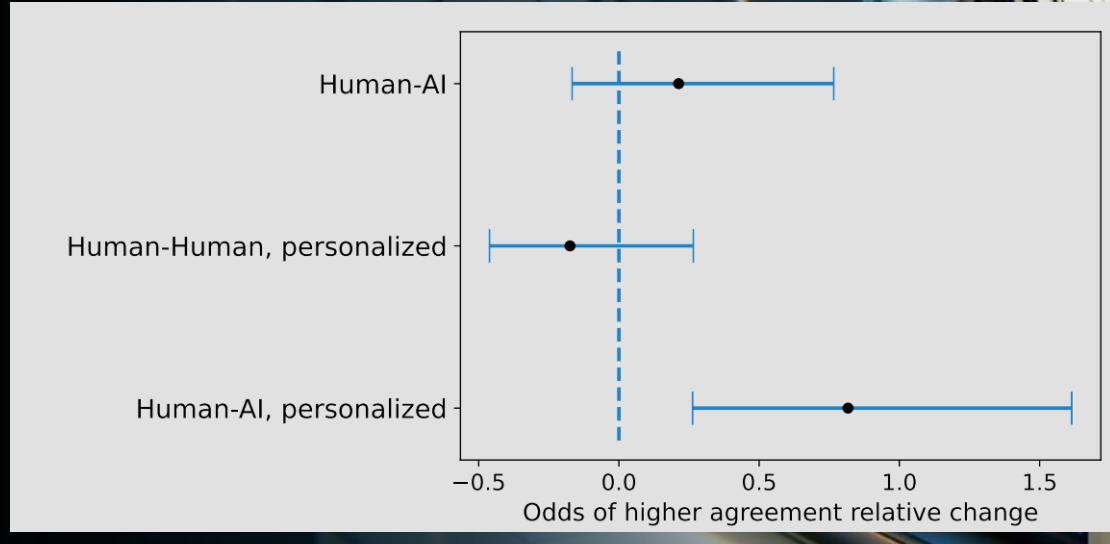
Jupyter Notebook 5 1

Single sign-on to see contributions within the swisslife-ch organization.

1,639 contributions in the last year

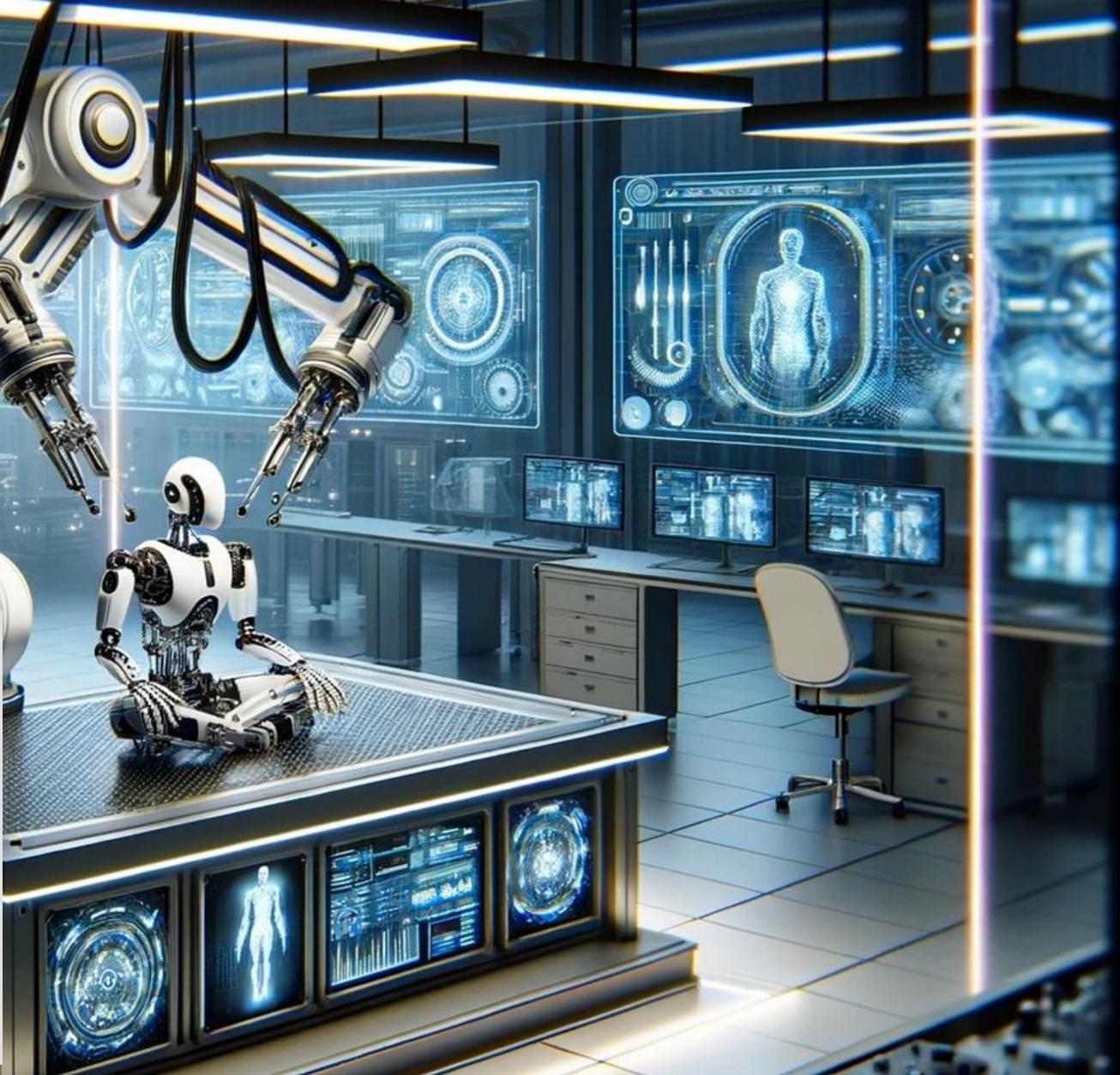


Demo!



Paper: <https://arxiv.org/abs/2403.14380>

Conversational Persuasiveness of Large Language Models

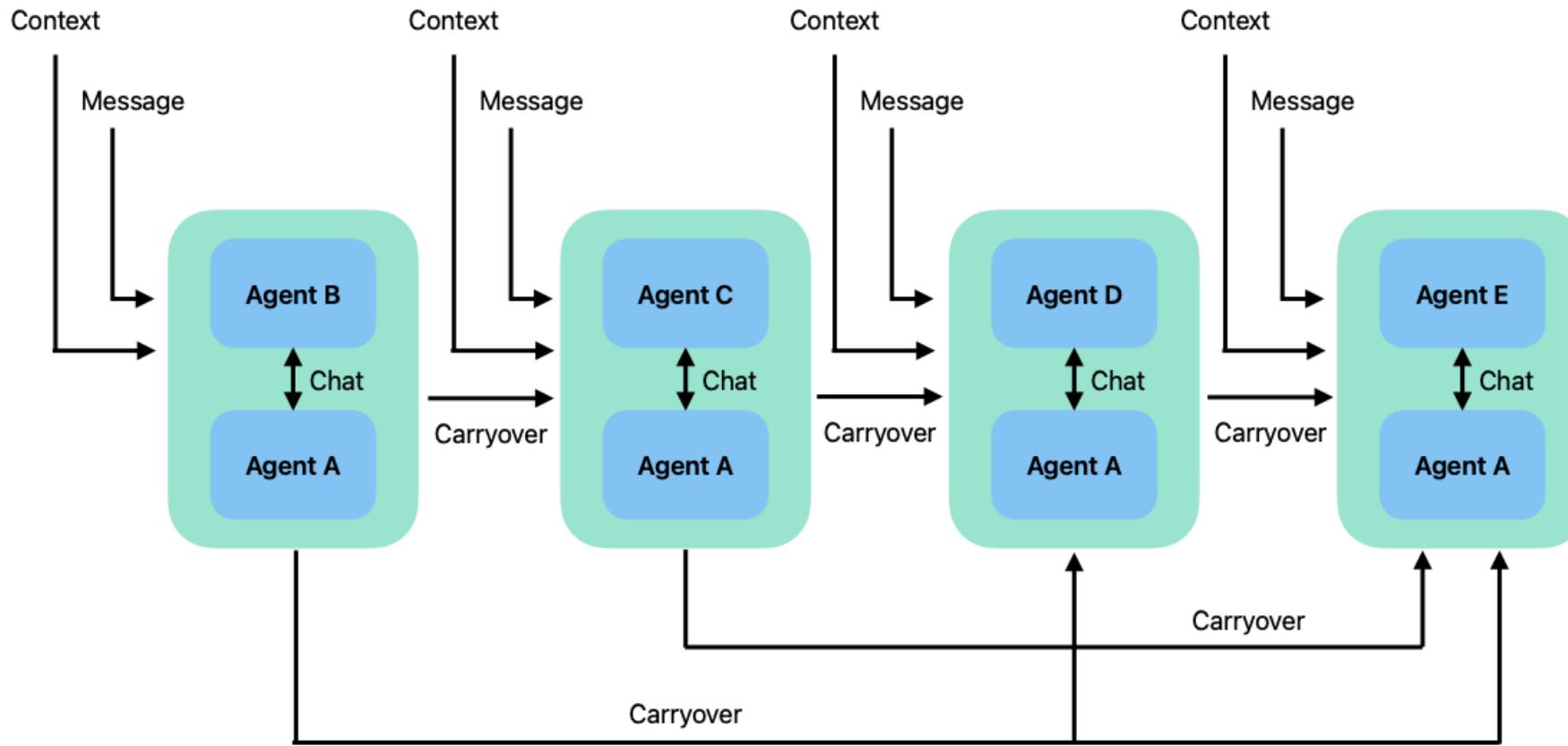


Agentic Workflows



Sequential Chat

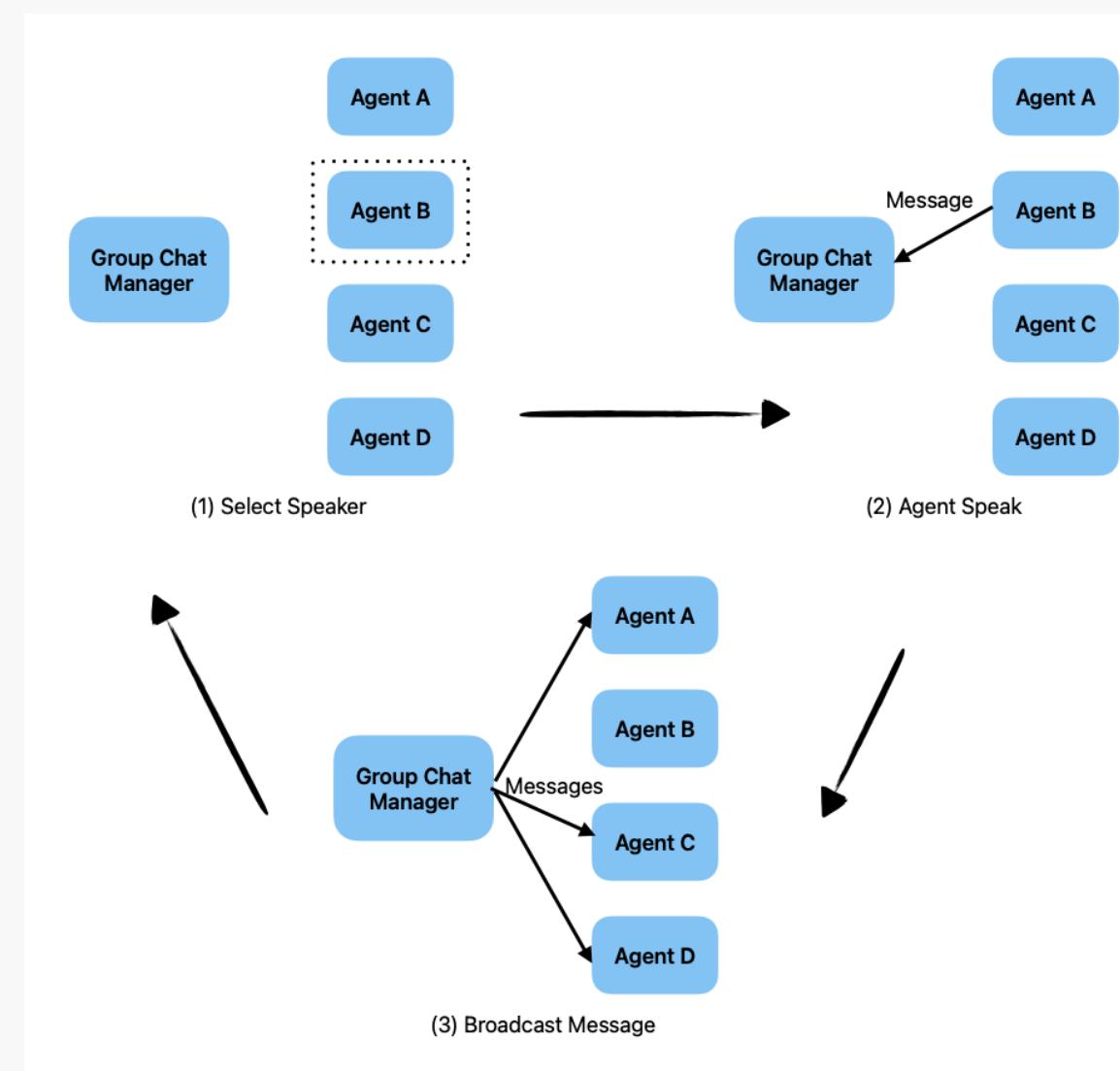
- The name of this pattern is self-explanatory – it is a sequence of chats between two agents, chained together by a mechanism called *carryover*, which brings the summary of the previous chat to the context of the next chat. Shortly is a sequence of the previous two-agent chat.



Group Chat

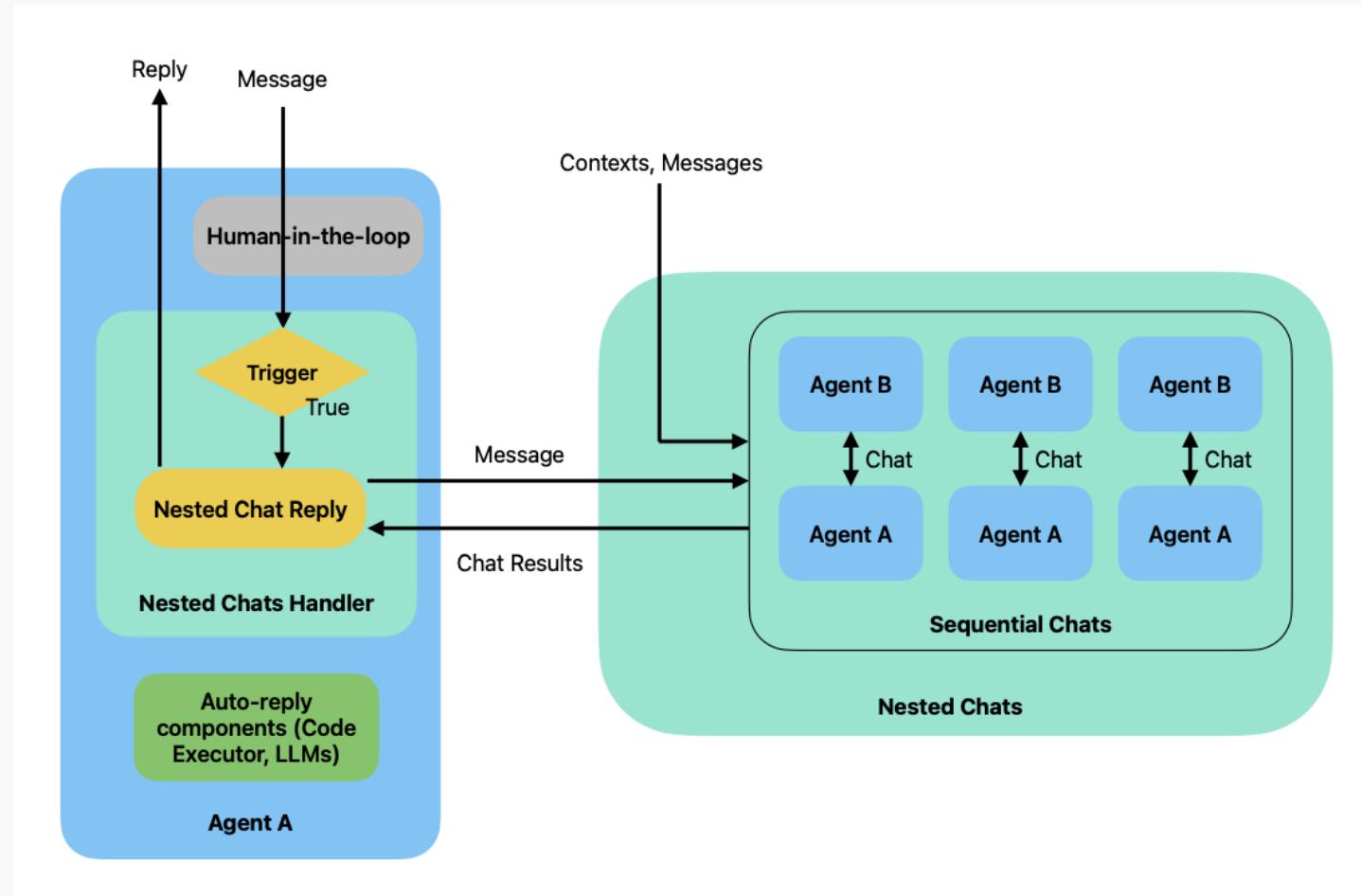
A group of agents which contribute to a single conversation thread and share the same context. This is useful for tasks that require collaboration among multiple agents. There is a coordinator Agent “Group Chat Manager” that decides which agent is next. The “selection method” only supports (according to documentation):

- Round_robin
- Random – Throw a dice
- Manual – ask the human
- Auto – LLM decides ;)



Nested Chat

The nested chat enable to package a chat workflow through a “nested chat handler” that can come in as a component that replaces an agent in a chat workflow. Nested Chat Handler is a component of “ConversableAgent” that wraps a chat workflow.



DEMO!



Recap & Take-Away

- We have seen Agents, Agentic AI, AutoGen
- Agents are more
- AI is getting better fast – so get to learn
- Change your mindset, our software now reasons and acts
- Exercise: Think actively where to use Agentic AI

NOW

START NOW

LEARN
GENERATIVE
COMPONENTS
AI AGENTS

MANAGE
AGENT
AI AGENTS

CLOUD
ENGINEERING

CLOUD
ENGINEERING

CLOUD
ENGINEERINGS
AI

PROMPT
ENGINEERING

AGETIC
AGIT

AGENT

CODING
KNOWLEDGE
PROMPT KNOWWEEDING

Start Learning now!

START AS SOONI AS POSSIBLE
TO STAY AHAD

How Relevant is Agentic AI?

Agentic AI is incredibly relevant and a game changer

4.2

Strongly disagree

Strongly agree



Actor Pattern

Distributed
Load Balancer

Orleans

Cloud Ready

Distributed
Scalable

and Local Already

Future?

- Agentic AI is about to explode
- Increase in Agent Capabilities
- And their Orchestration

Actor Pattern

Orleans

Graph
Approach

MicroService Approach

Cloud and Local Already

MicroService Approach

Microsize Approach
Approach

Graph
Approach

MicroService Approach

Actor
Pattern

Cloud Ready

Cloud Ready

and Local Already

Actor Pattern

Orleans

MicroService Approach

MicroService Approach



Thank You!!

Connecting & Continuing the journey

- Contact

- <https://www.linkedin.com/in/joslat/>
- <https://x.com/joslat>
- <https://github.com/joslat/AgenticAIAutoGen>

- .NET Zurich UG

- <https://www.linkedin.com/company/dotnet-zurich/>
- <https://www.meetup.com/dotnet-zurich/>

- Global AI Zurich

- <https://www.linkedin.com/groups/9862323/>
- <https://www.meetup.com/global-ai-zurich/>



Questions?