Global AI Bootcamp 2025-NASHUA

In-Person Only

Nashua / United States

12 March 2025

Nashua CLOUD .NET User Group

Event details →

Global AI Bootcamp 2025 - Nashua

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Attendee badge

Attendee badges

Share the link and code below with your attendees to request their badges.

Code:	YU76RT4
Link for attendees:	https://globalai.community/bootcamp/united-states-nashua/badge/ You can share this link with your attendees to request a badge with your code.
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Azure Subscription

- Navigate to: https://aka.ms/JoinEduLab
- Login with a Microsoft Account
- Enter the code
- Wait for the confirmation email

Thanks, Global AI Community!

Agenda (EDT 4:00 PM – 8:00 PM)

- 4:00 – 4:30 Welcome and Microsoft Recorded Keynote
- 4:30 – 5:40 Introduction to Azure Foundry & Hands-On-Lab
- 5:40 – 5:50 Break (Pizza and Drinks)
- 5:50 – 6:40 Understanding and Programming AI & Hands-On-Lab
- 6:40 – 7:50 Introduction to AI Agents & Hands-On-Lab
- 7:50 – 8:00 Closing notes

Important

Bathrooms are available on both sides of the elevator: Women's on the left side and Men's on the right side.

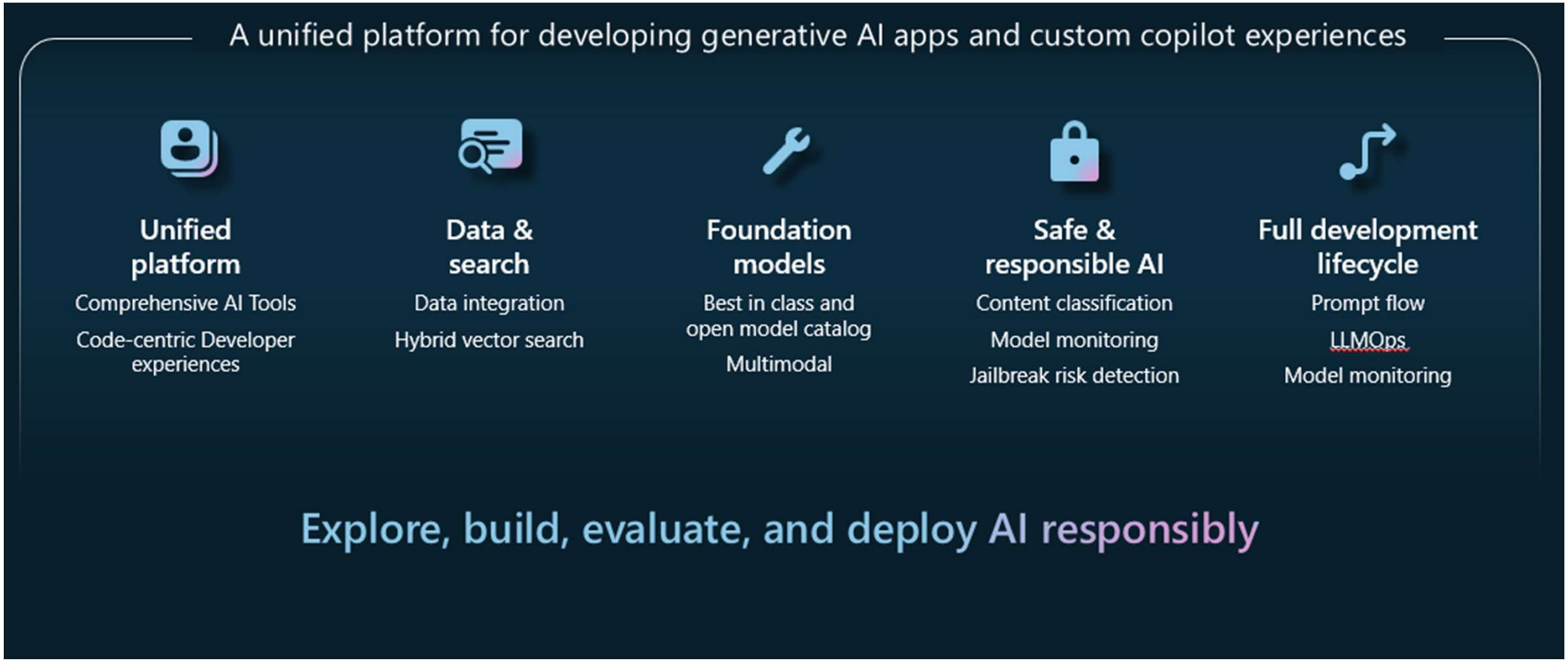
The kitchen (for coffee, tea, and water) is on the first right after this conference room

Exit or Enter for a break. Make sure to leave the door open.

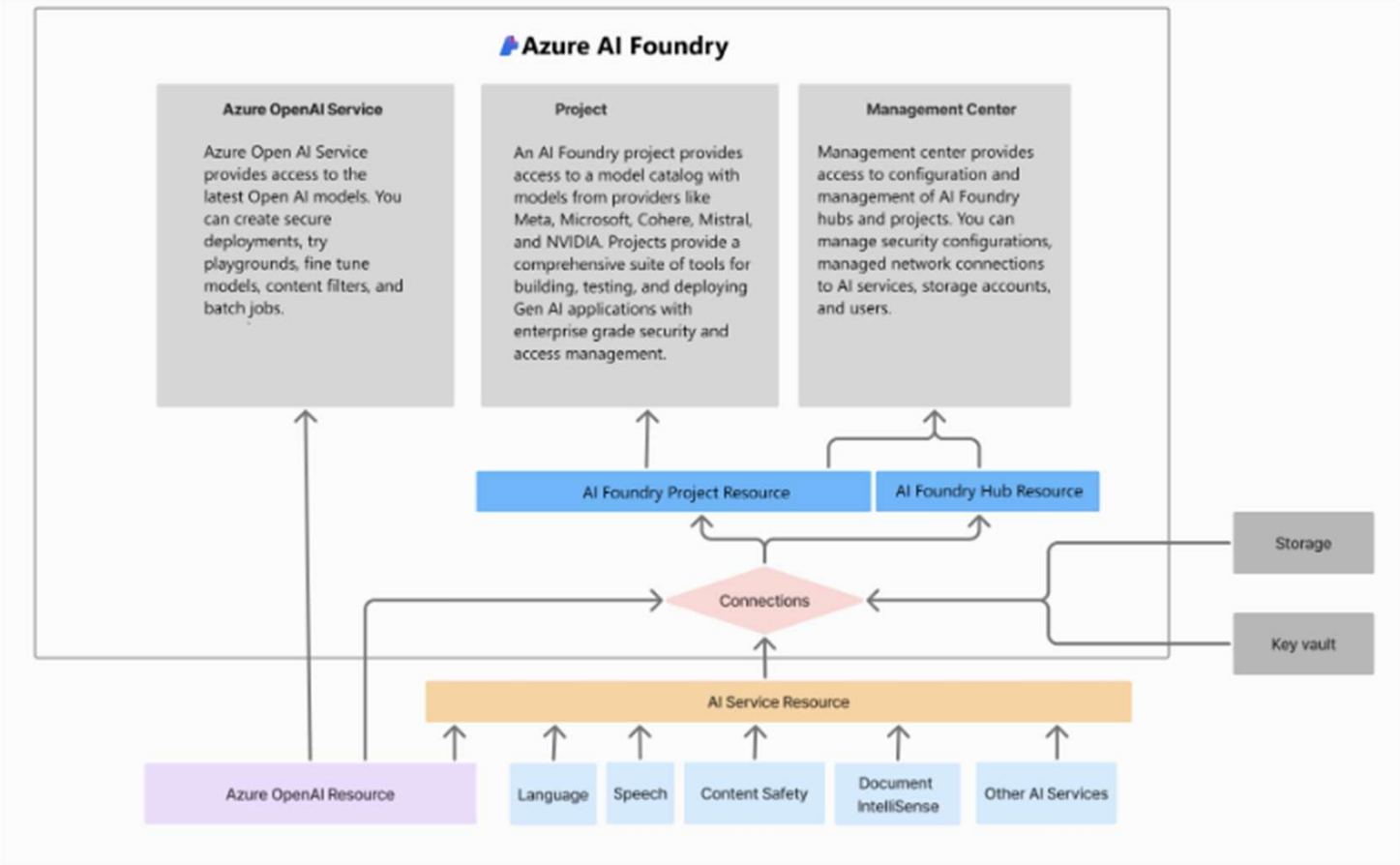
Global AI Bootcamp 2025 - Keynote

https://youtu.be/M6N-o2ONHRY

Azure AI Foundry

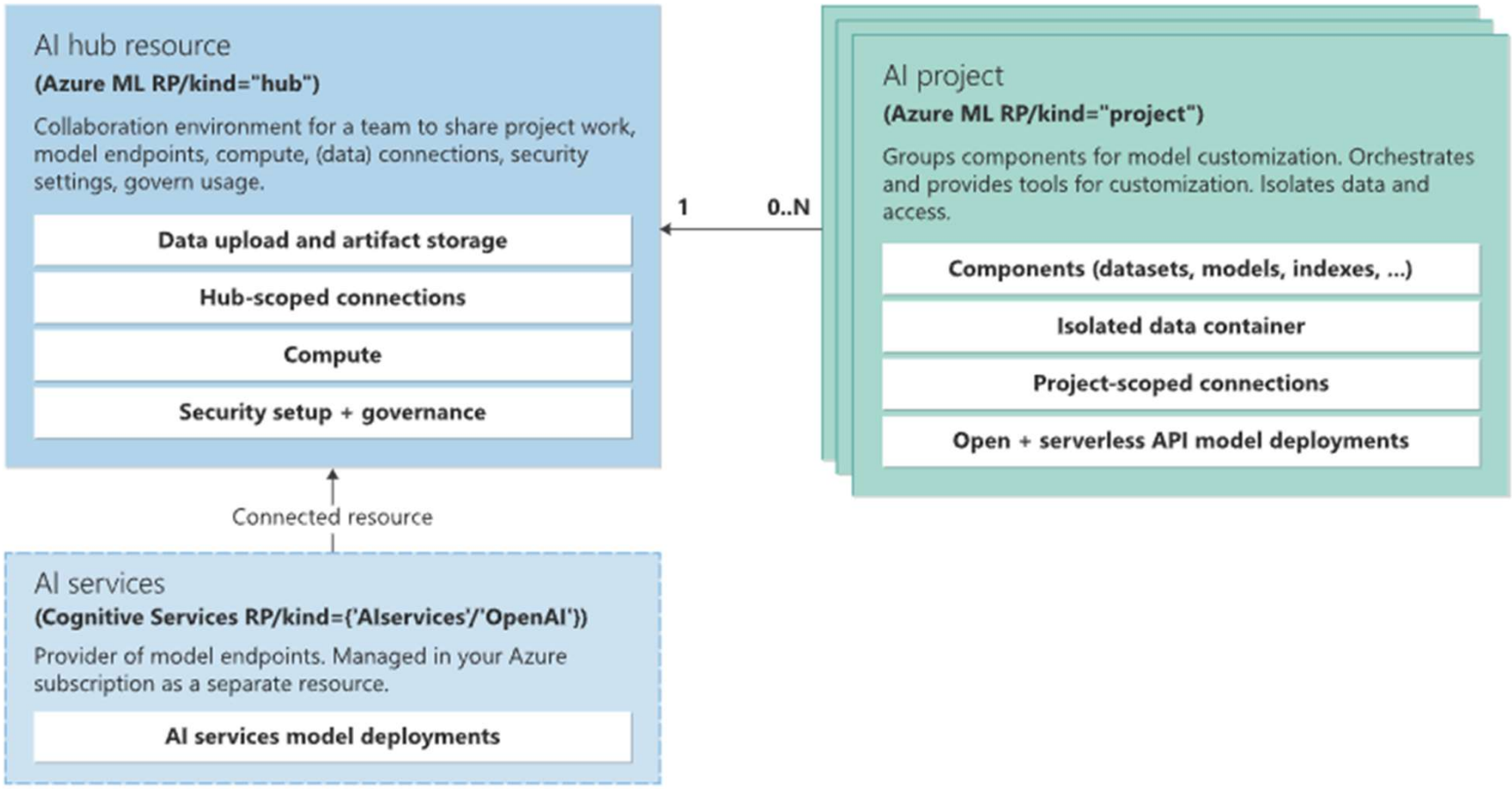


Azuere AI Foundry Architecture



https://learn.microsoft.com/en-us/azure/ai-foundry/media/concepts/ai-studio-architecture.png#lightbox

Hub/Project/Connection

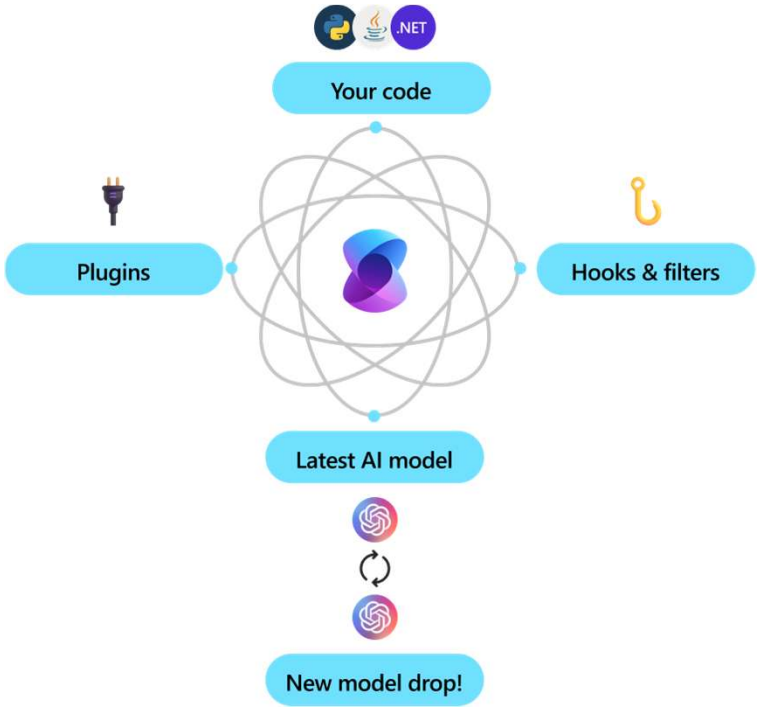


https://learn.microsoft.com/en-us/azure/ai-foundry/media/concepts/resource-provider-connected-resources.svg

LAB I – Azure AI Foundry

Introduction to Semantic Kernel

- What is Semantic Kernel?
  - A lightweight, open-source development kit for building AI agents.
  - Supports C#, Python, and Java, allowing easy integration of AI models into existing codebases.
  - Facilitates enterprise-grade AI solutions with flexibility and modularity.
- Key Features
  - Enterprise-ready: Secure, modular, and observable with telemetry and responsible AI features.
  - Future-proof: Easily integrates with the latest AI models, ensuring adaptability.
  - Cross-platform support: Works seamlessly across multiple languages (C#, Python, Java).



https://learn.microsoft.com/en-us/semantic-kernel/overview/

Introduction to Semantic Kernel

- Automating Business Processes
  - Combines prompts with existing APIs to perform automated actions based on model requests.
  - Enables AI models to interact with code to complete business functions.
- Modular and Extensible
  - Easily integrates with custom code and external APIs using OpenAPI specifications.
  - Maximizes investments by sharing extensions and plugins within the company.
- Get Started Quickly
  - Provides simple, fast methods to build agents that automate tasks and call functions efficiently.

https://learn.microsoft.com/en-us/semantic-kernel/overview/

LAB II – Programming AI

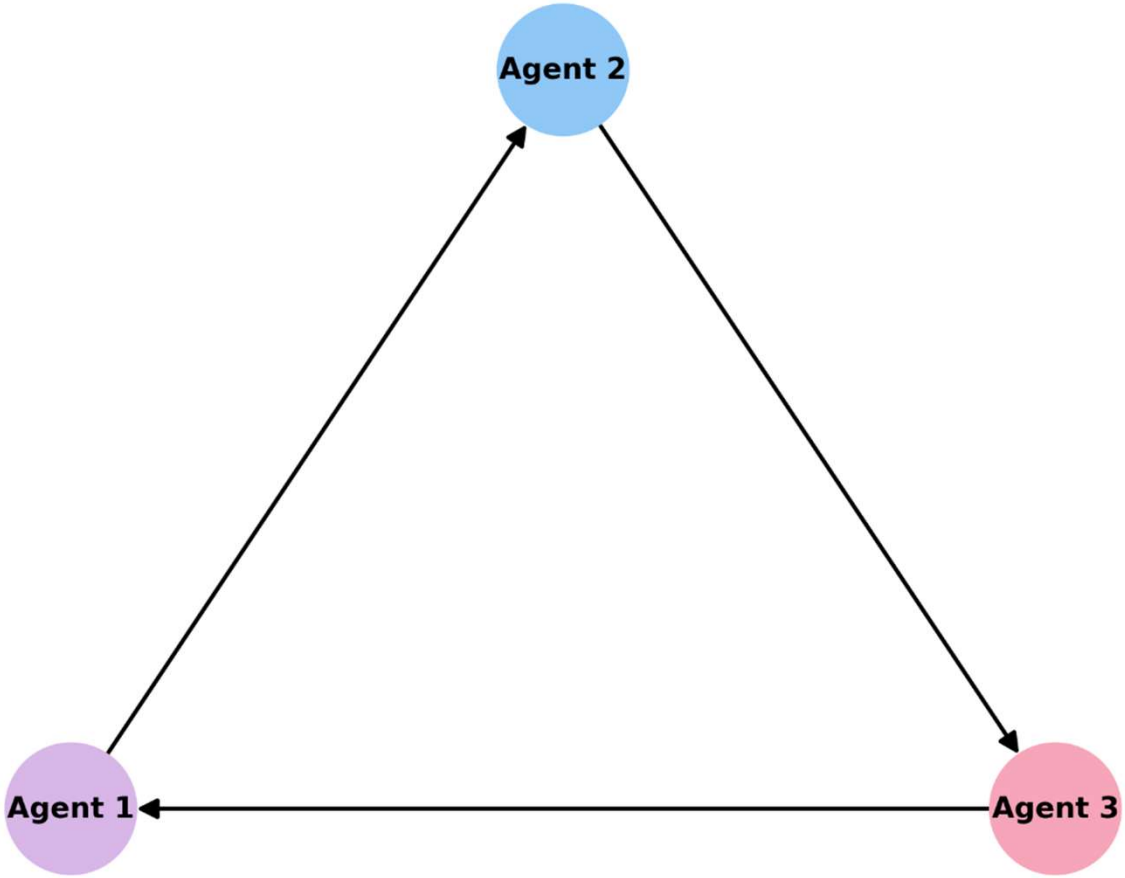
What is an Agent in AI

- Definition:
  - An agent is an autonomous entity that perceives its environment, processes information, and takes actions to achieve specific goals or complete tasks.
- Key Characteristics:
  - Autonomy: Acts independently without human intervention.
  - Perception: Gathers data from the environment through sensors or inputs.
  - Action: Takes actions based on perceptions to influence the environment or achieve objectives.
  - Goal-Oriented: Designed to pursue specific goals through reasoning and decision-making.
  - Interaction: Can collaborate or communicate with other agents for task completion.
- Applications:
  - Robotics
  - Virtual Assistants
  - Multi-Agent Systems
  - Game AI
  - Autonomous Vehicles

Agent Frameworks

- Frameworks
  - BabyAGI: Pioneering AI learning system
  - AutoGPT: automates content generation
  - GPTEngineer: Assists in coding and software development
  - AutoGen: Dialog based planning and execution from Microsoft
  - SemanticKernel: from Microsoft
- What Framework can do?
  - Agents may handle code generation, execution, and human supervision.
  - Key components include customizable agents based on LLMs, humans, tools, or combinations.
  - Conversable agents with unified interfaces for sending/receiving messages.
  - Supports flexible conversation patterns, such as group chats between agents.
  - environment (through sensors), makes decisions (to drive safely), and takes actions (like steering or braking) to reach its destination.

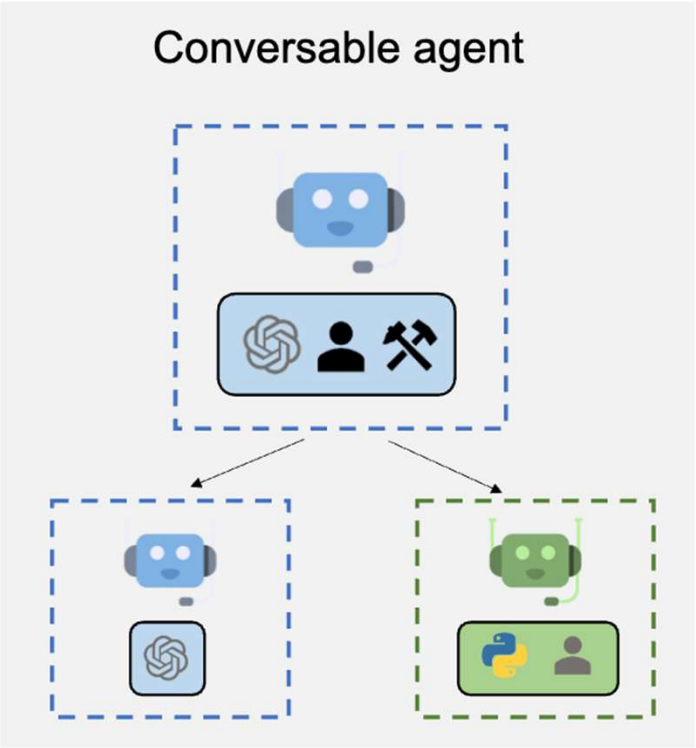
Multi-Agent Collaboration



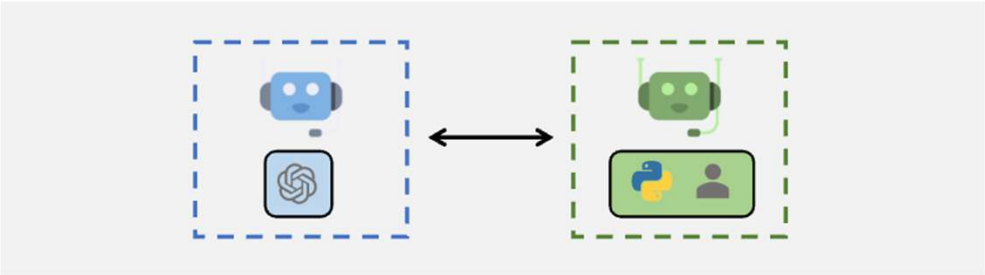
Multi-Agent Collaboration

- Task Division
  - Task breakdown
- Role Assignment
  - Assign roles to each agent
- Agent Communication
  - Agents talk with each other (share information)
- Final Assembly
  - Combine all contributions from all agents

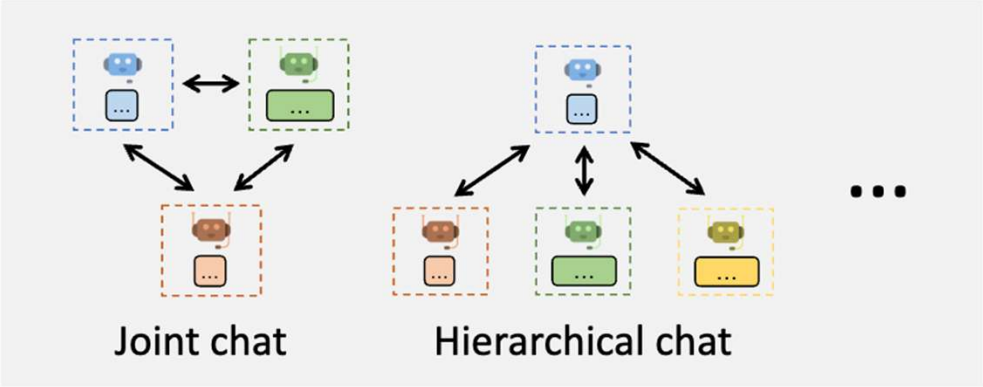
Multi-Agent Conversation



Agent Customization



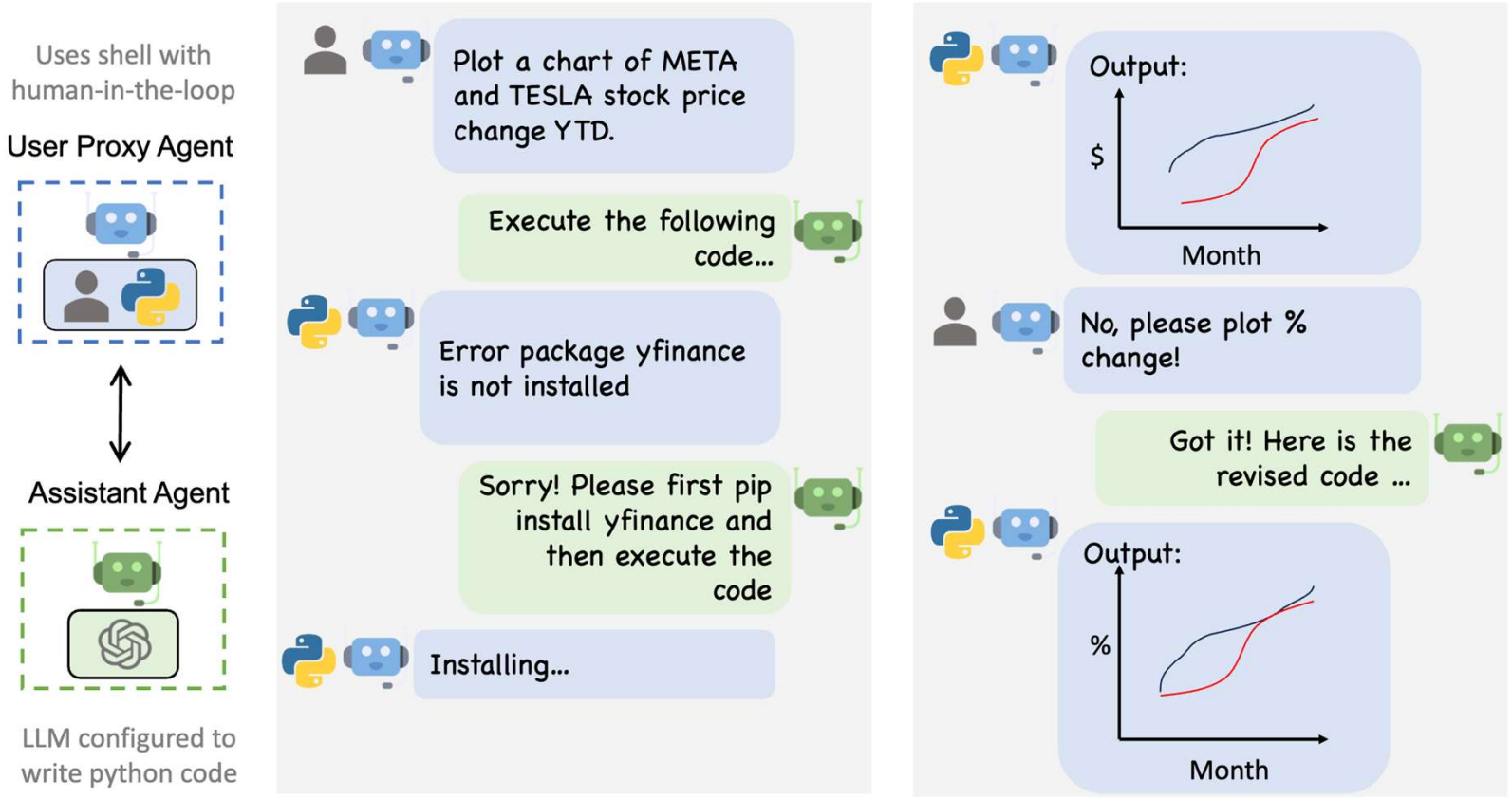
Multi-Agent Conversations



Flexible Conversation Patterns

https://microsoft.github.io/autogen/0.2/assets/images/autogen_agentchat-250ca64b77b87e70d34766a080bf6ba8.png

Multi-Agent Conversation Flow



https://microsoft.github.io/autogen/0.2/assets/images/chat_example-da70a7420ebc817ef9826fa4b1e80951.png

LAB III – Building Agents

Attendee badge

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References

- https://globalaicommunity.github.io/global-ai-bootcamp-2025/presentations/
- https://globalaicommunity.github.io/global-ai-bootcamp-2025/workshops/
- https://microsoft.github.io/autogen/stable/
- https://microsoft.github.io/autogen/dotnet/dev/core/index.html
- https://github.com/microsoft/autogen/tree/main
- https://github.com/microsoft/ai-agents-for-beginners/tree/main
- https://learn.microsoft.com/en-us/azure/ai-foundry/what-is-ai-foundry

Thank you for your time and trust!

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