

Getting Started with MCP Servers on Microsoft Azure

AI Integration on the Cloud

Jonah Andersson



MC2MC
—CONNECT—

2Pint



robopack

wortell

INGRAM^{MICRO}®



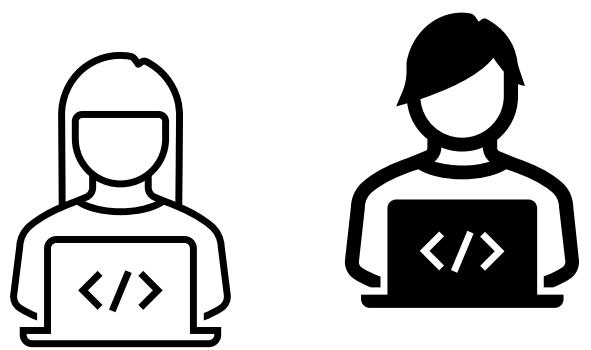
The Collective



VirtualMetric

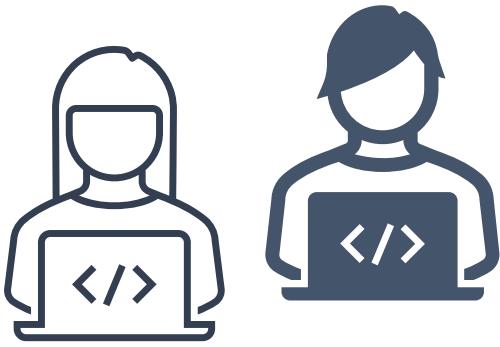


-22 cold ❄️



*Any of you started
coding AI Agents?*





*As developers or tech
nerds learning AI,
what is your
Greatest challenge
when developing
with it ?*



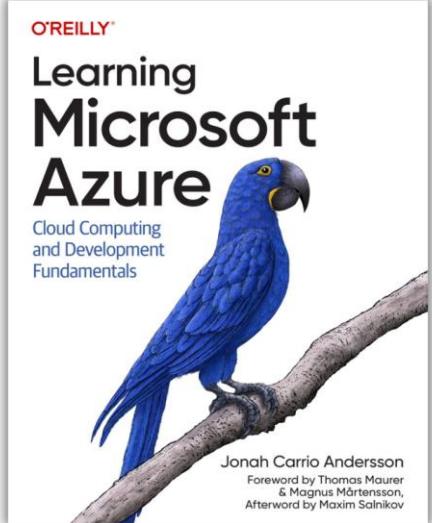
Jonah Andersson



- Senior Azure Consultant @Eficode
- Freelance @Jonah Andersson Tech AB
- Author of Learning Microsoft Azure (O'Reilly)
- Founder of @Azure User Group Sweden
- MCT Community Lead, Microsoft MVP
- Ask me anything about .NET, Azure, DevOps,
& how much I love spending time with my dog Lorentz! ❤️

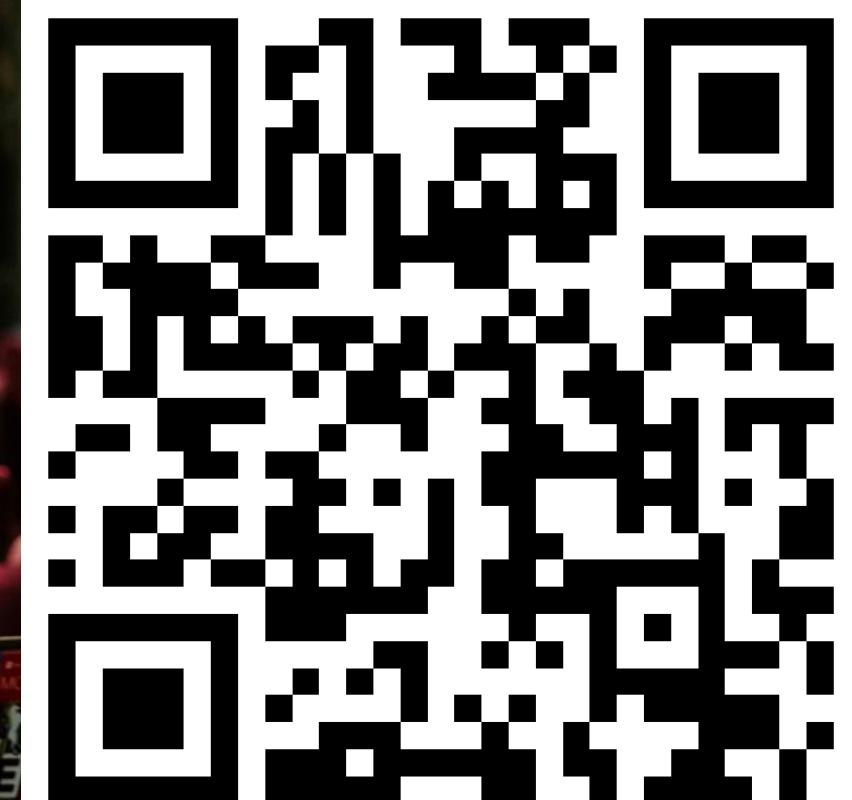


JONAH ANDERSSON
TECH



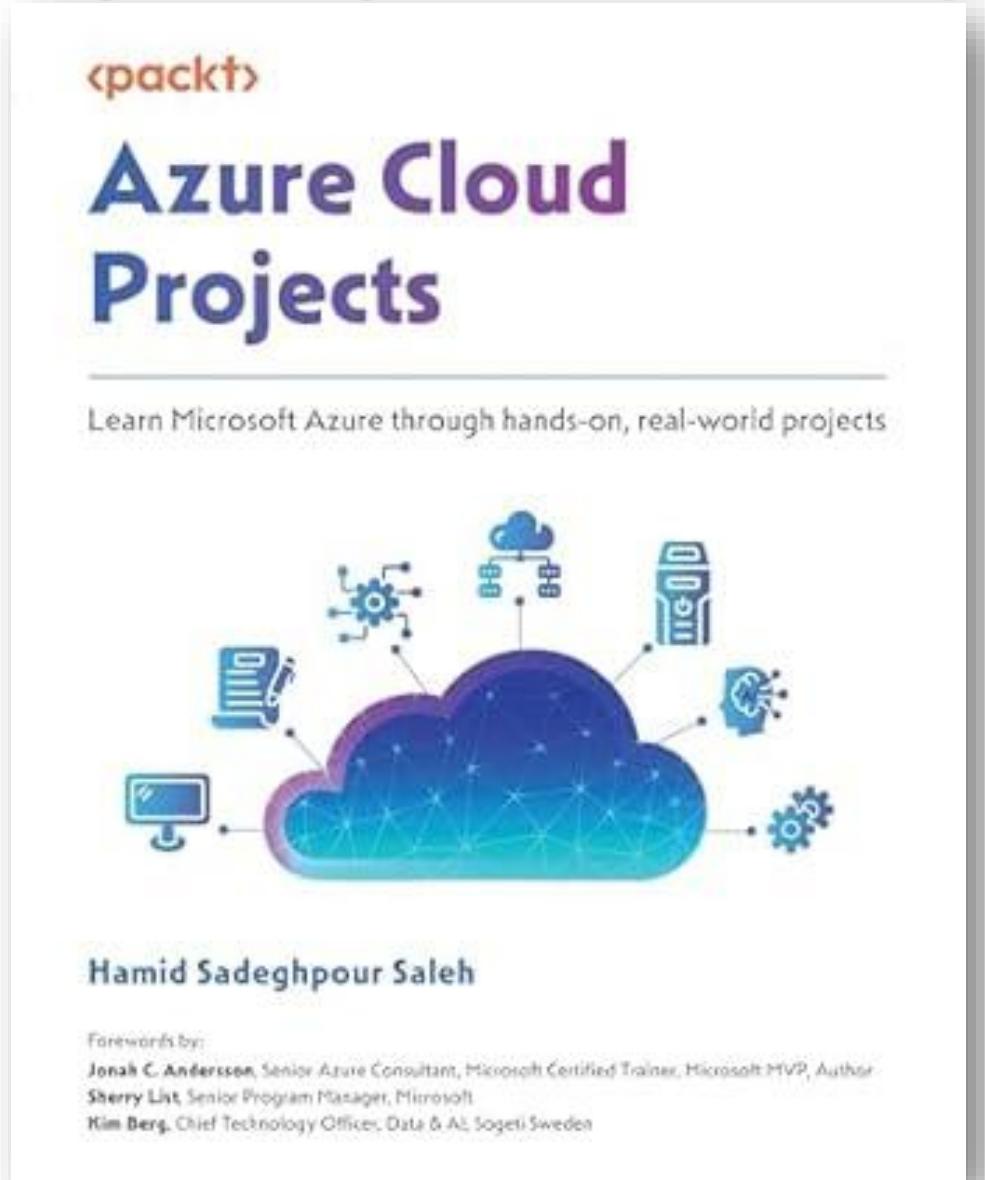
"Inspire tech to others"

New to Azure? Giving away e-books



<https://learningmicrosoftazure.com>

**New to Azure? Check out Azure Cloud Projects –
A give away to best technical question at this session** 🎉



I wrote the foreword 😊

AI Agents Developer Challenges

- 💡 Where do I start to build an agent?
- 🔌 How do I connect my agent to other services?
- 🤝 How can I make agents work together?
- 📊 How do I know what my agent is doing?
- 🚀 How do I deploy and manage agents?
- 💻 How do I build good user interfaces for agents?

What will you learn today?

Developer Solutions for AI

 **AI Agents – What, Why, Best Practices**

 **Building Own Custom MCP Server on Microsoft Azure**

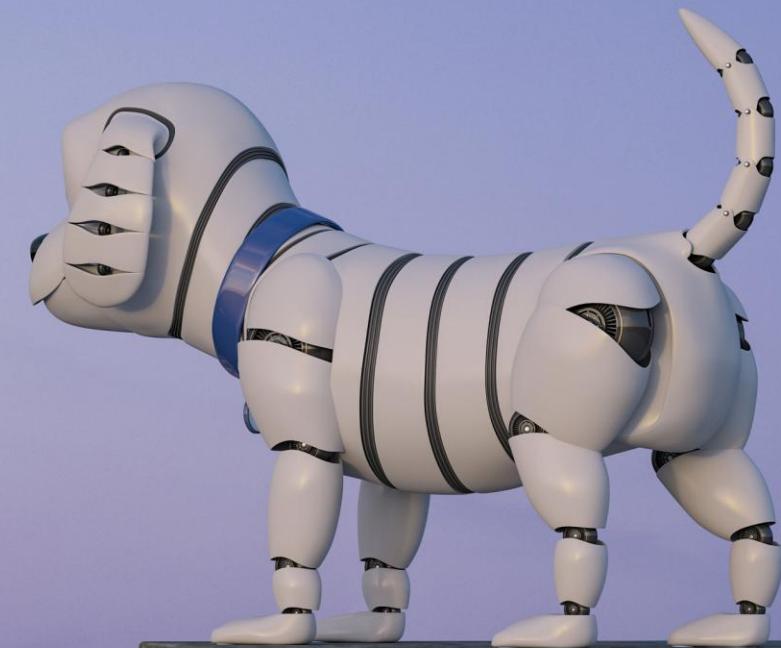
 **Demo**

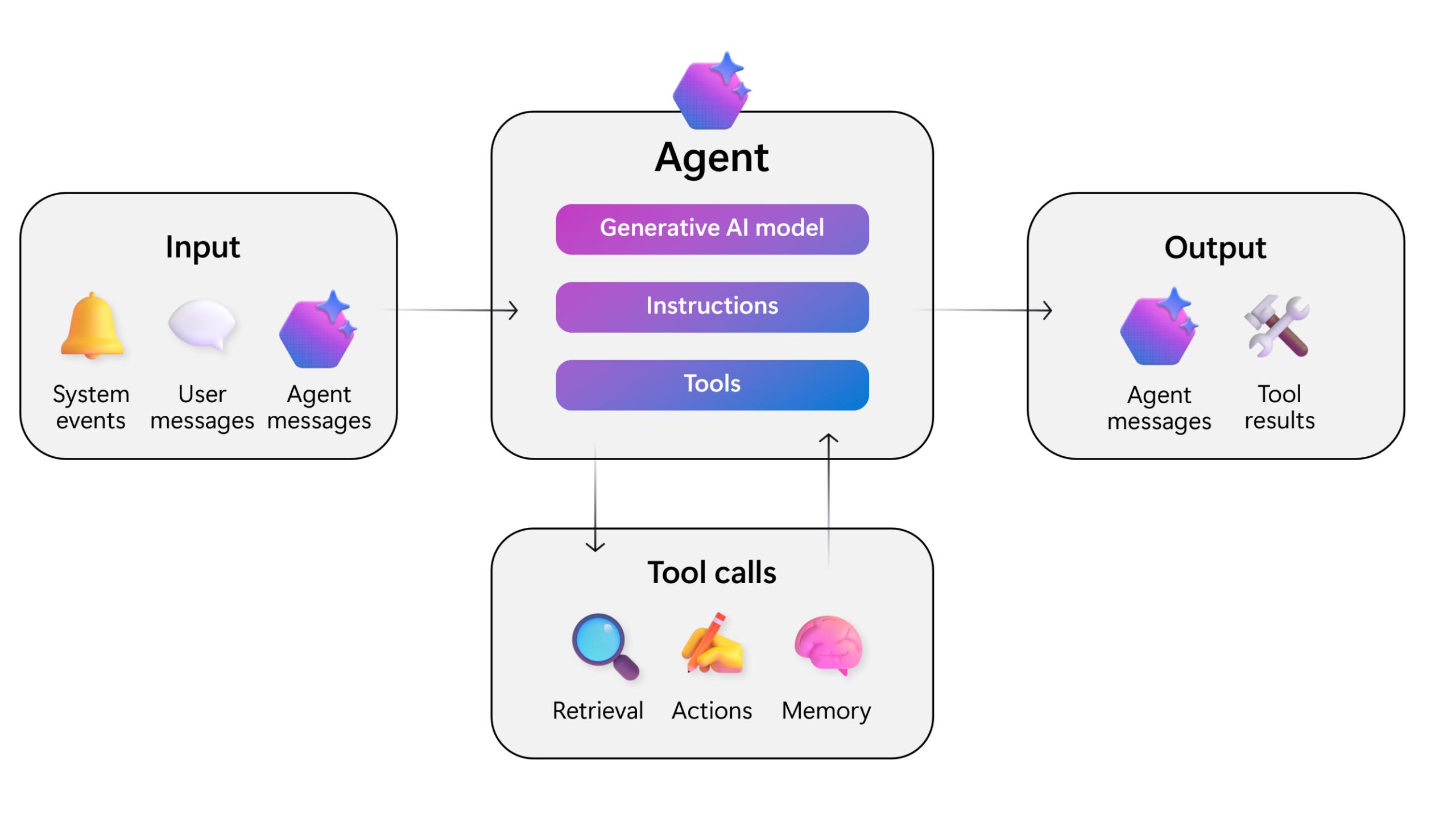
- MCP Servers with .NET integration with Azure Functions and Azure Static Web Apps

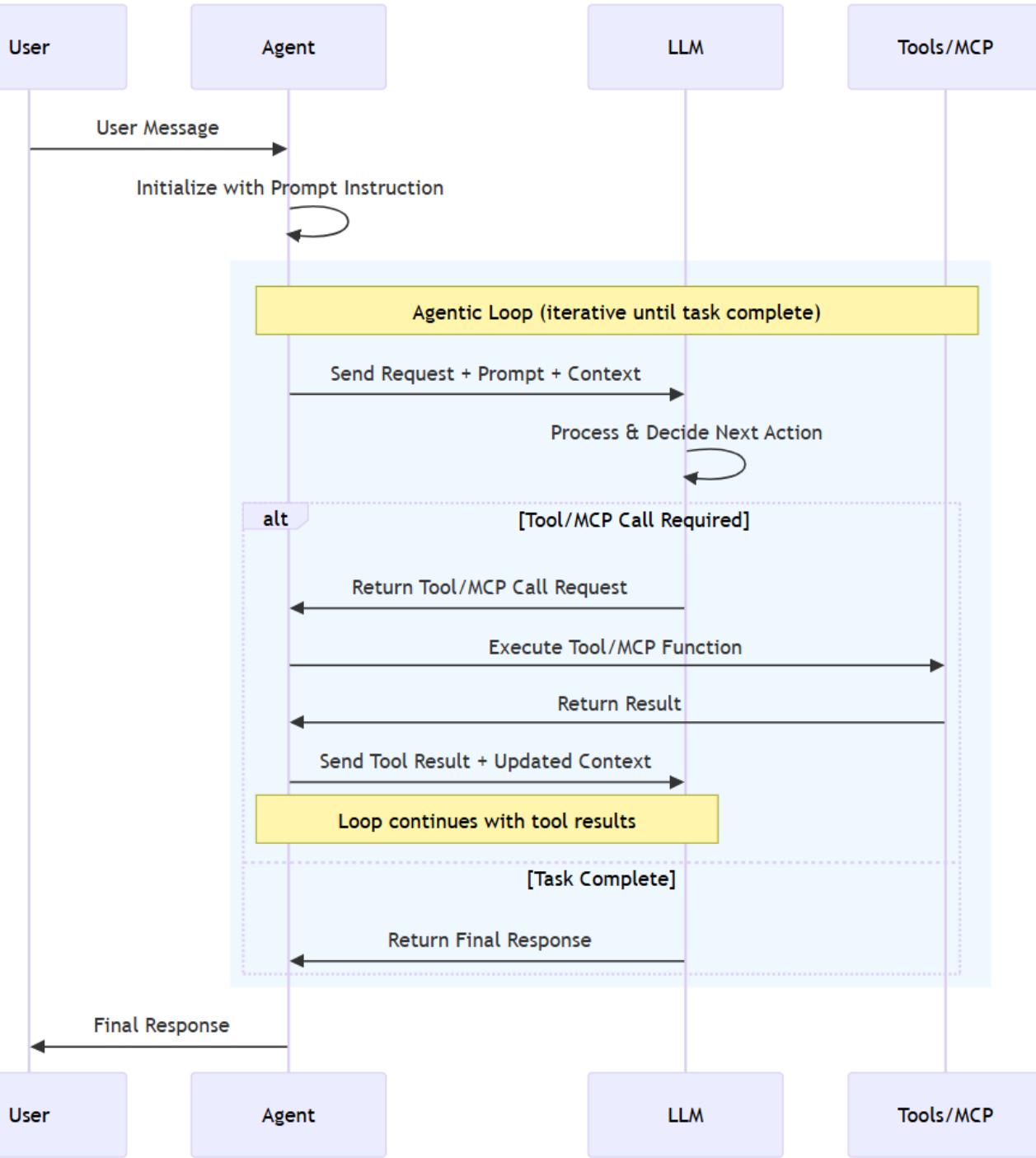
 **Recommended Resources**

What are AI Agents?

An AI agent uses an LLM to process **user inputs**, make decisions, call tools and MCP servers to perform **actions**, and generate **responses**.







AI Agents Flow



Different Ways to Build AI Agents



Foundry Agent Service

- Managed service in Azure for creating, managing, and using AI agents

AG AutoGen

- Open-source framework for rapid agent development



Copilot Studio

- Low-code development environment for building and deploying agents



Microsoft Agent Framework

- Lightweight development kit for building AI agents



Agent Builder

Declarative tool for business users to author basic agents in Microsoft Copilot Chat and other Copilot-based interfaces



Microsoft 365 Agents SDK

- Create self-hosted agents for various channels

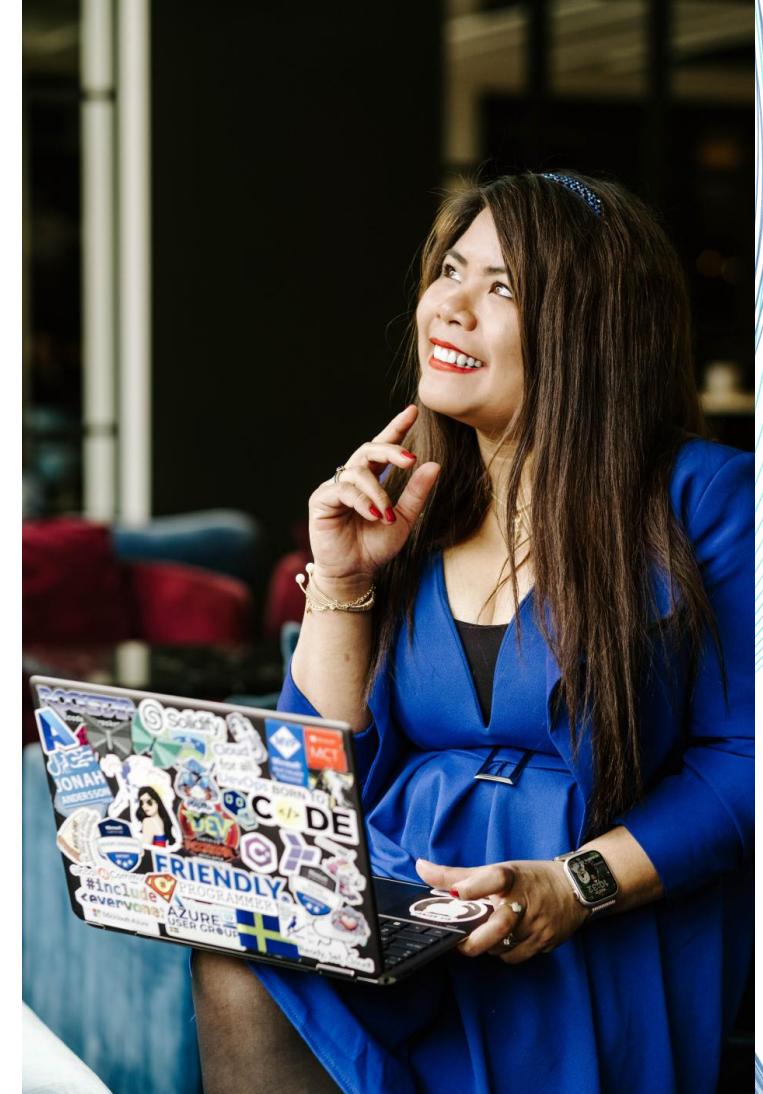


OpenAI Assistants API

- Standard API for OpenAI agent development

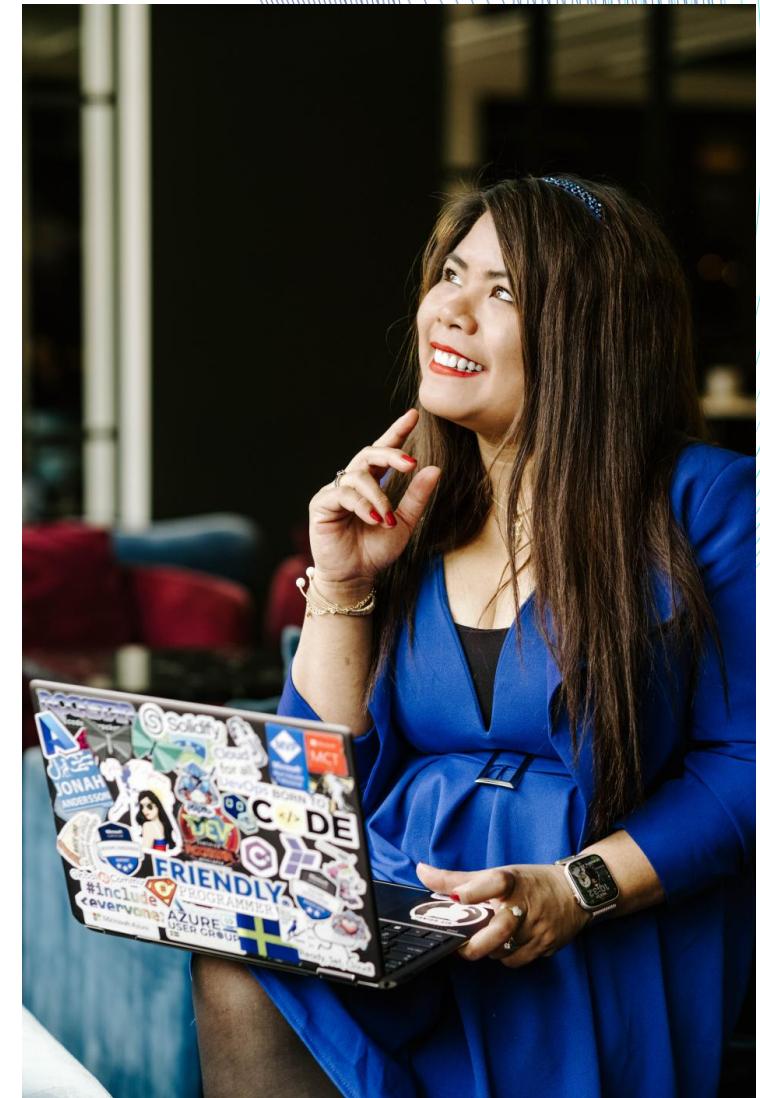
Why AI Agents matters to Developers?

- Automating Repetitive Developer Tasks
- Real-Time Coding Suggestions for Developer Productivity
- Improve Coding Quality – Refactoring, Detection, Best Practices



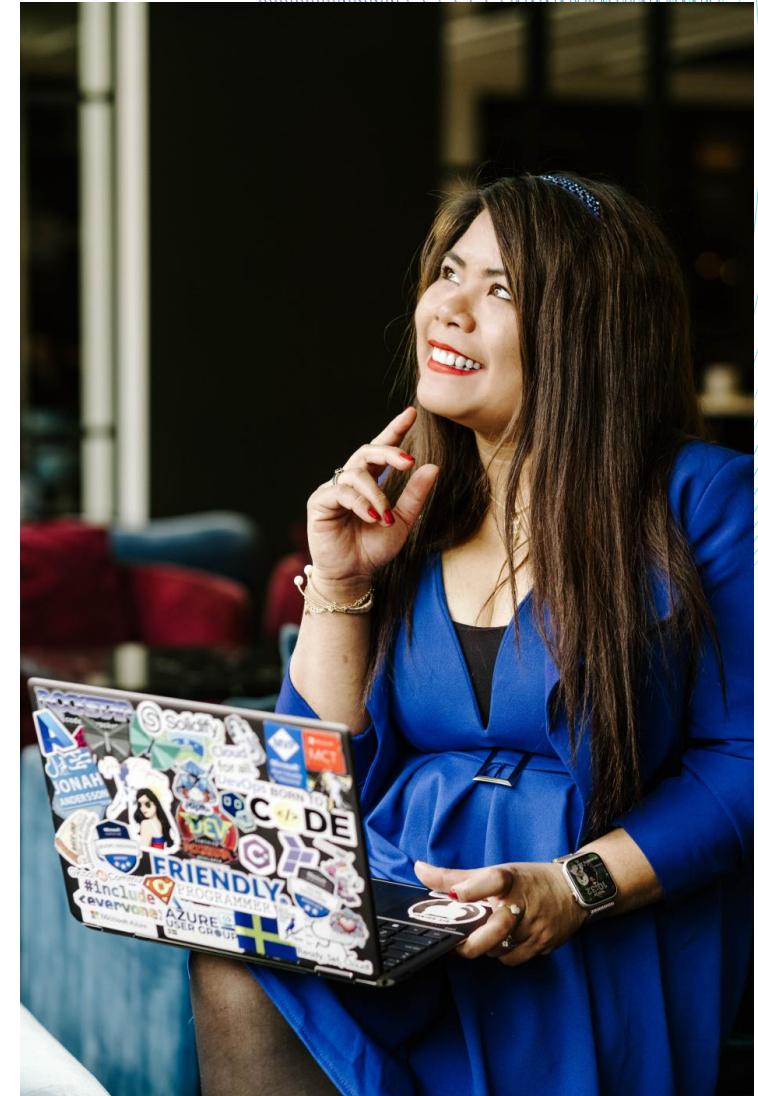
When to use AI Agents?

- Customer Support, Multi-AI Agents
- Code Generation and Debugging
- Research Assistant, or any kind of assistant
- Education and Tutoring
- Anything that AI can help automate



*When **NOT** use AI Agents?*

AI agents are not well-suited
for tasks that are highly
structured and require strict
adherence to predefined rules



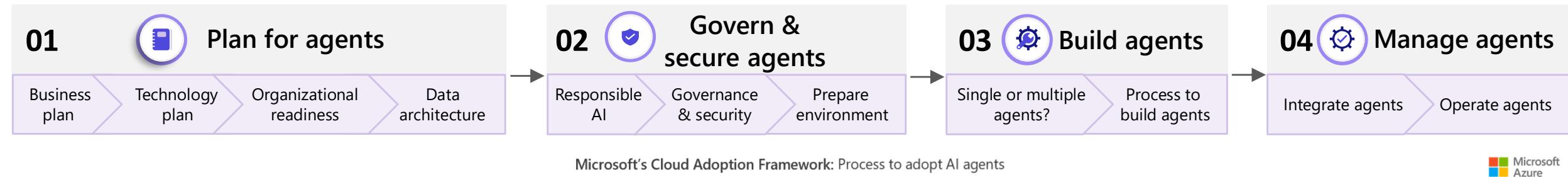
Workflow for AI Agents

When to Consider

- Pre-defined sequence of operations using AI agents as components
- Handling complex and long-running process using multi agents, human interactions, and integrations
- Model- based decision making
- Concurrent execution



MS CAF AI Agents Adoption Flow



1. Plan for Agents
2. Govern & Secure Agents
3. Build the Agents
4. Manage the Agents

Why Building Trustworthy AI matters?

TRUST is important in everything.
Most especially in digital products and tools everyday.
We are in an evolving digital, tech and AI-revolution generation
when everything goes quick and fast, but are we ready? Can
we trust the AI we integrating our systems with? Are we
building quality AI-powered apps and solutions?

- **Jonah Andersson**
Author, Developer, Tech Leader



The 5 Dimensions of AI Trustworthiness



Transparency



Accountability



Security



Reliability



Fairness

Evaluate AI systems across all five dimensions. A weakness in any area is a potential risk.



No single framework guarantees trustworthiness — systematic evaluation across all dimensions does.

European AI Act – Why it is relevant?



EU Artificial
Intelligence Act

The Act ▾ Implementation ▾ Compliance ▾ About us

Newsletter ↗

EN ▾

The EU Artificial Intelligence Act

Up-to-date developments and analyses of the EU AI Act

AI Act Explorer

Browse the full AI Act text online. Search within the Act for parts which are relevant to you.



Compliance Checker

Discover how the AI Act affects you in 10 minutes by answering some straightforward questions.



I built trustworthyai.guide



AI Governance & Trustworthy AI Adoption Guide

EU AI Act Compliance + Microsoft Cloud Adoption Framework for AI Agents

For Developers & IT Leaders • Building Trustworthy AI

EU AI Act Risk Levels Compliance GPAI Timeline Exemptions Microsoft CAF AI Agent Adoption Guide Checklist



Welcome to Your AI Governance Journey

Navigate EU AI Act compliance and Microsoft Cloud Adoption Framework for building trustworthy AI systems



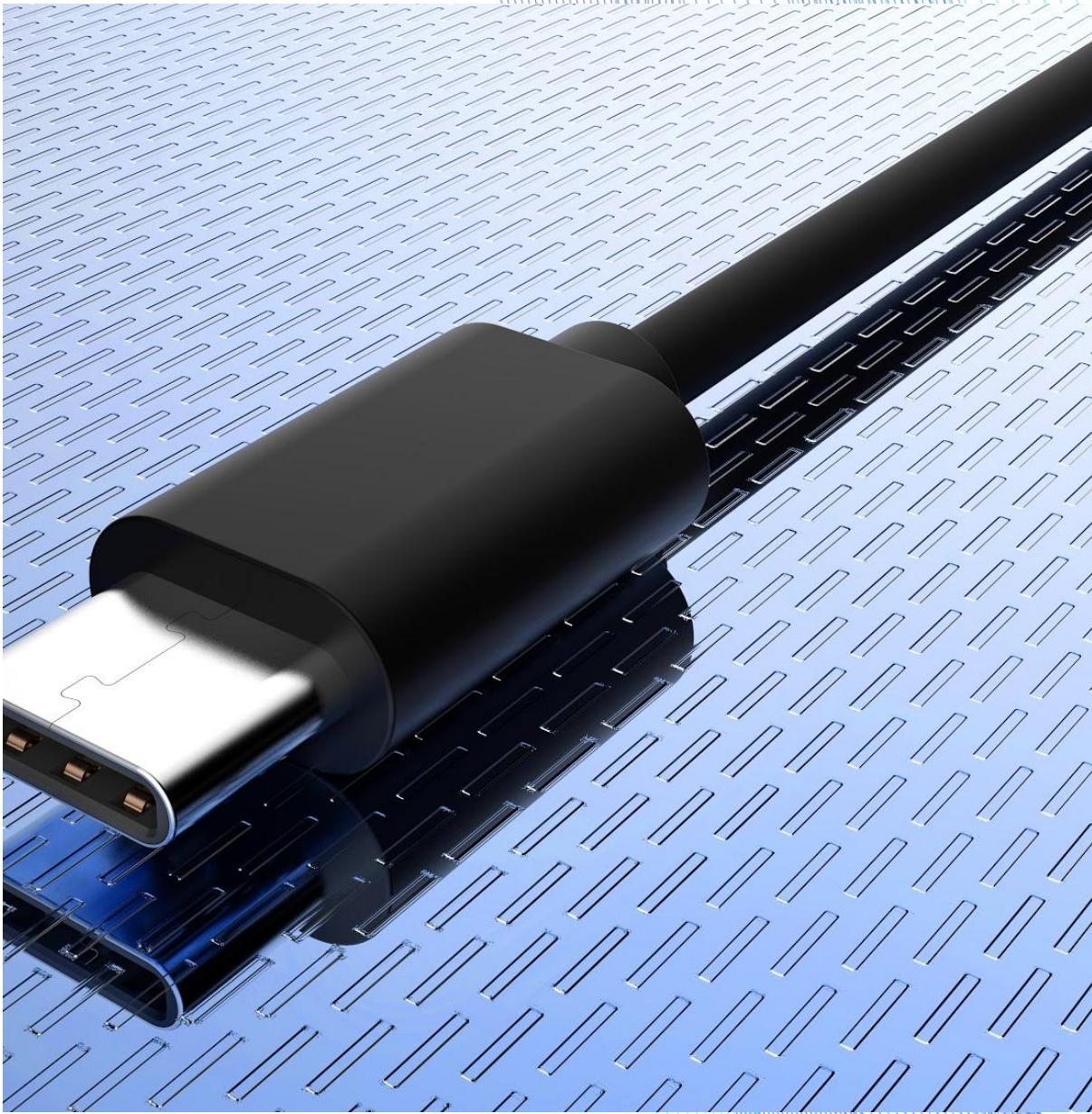
Foundry Agent Service



Microsoft Agent Framework

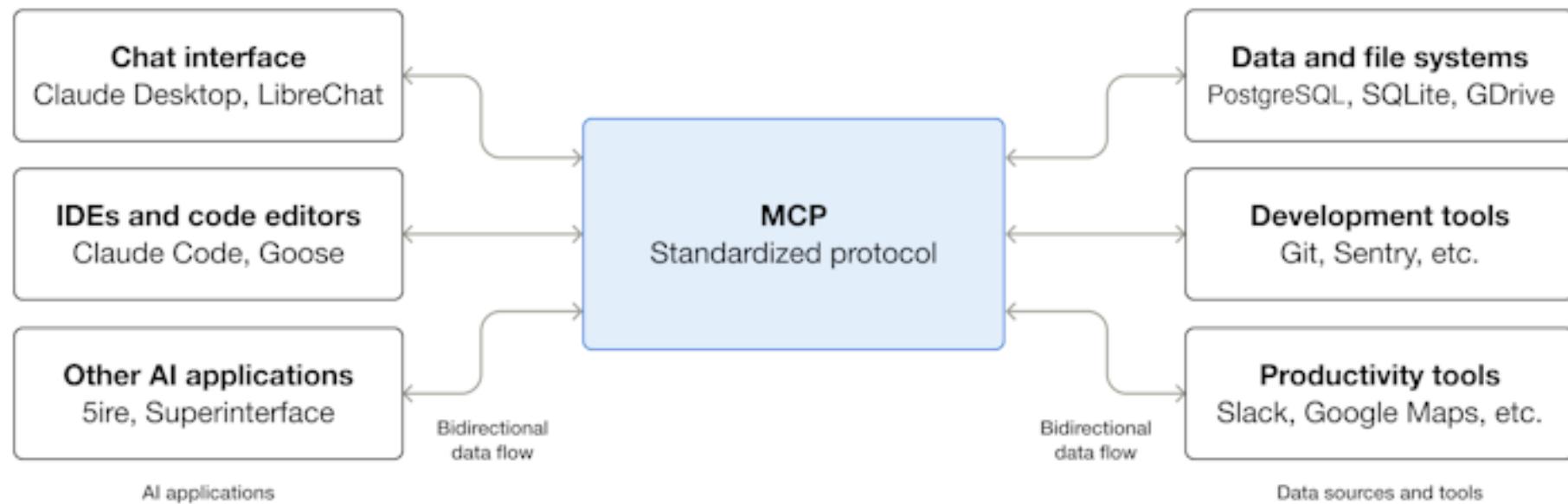


**MCP Servers are
like the USB-C,
plugins or adapter
for AI
– into your apps**



What is really MCP?

MCP (Model Context Protocol) is an open-source standard for connecting AI applications to external systems.

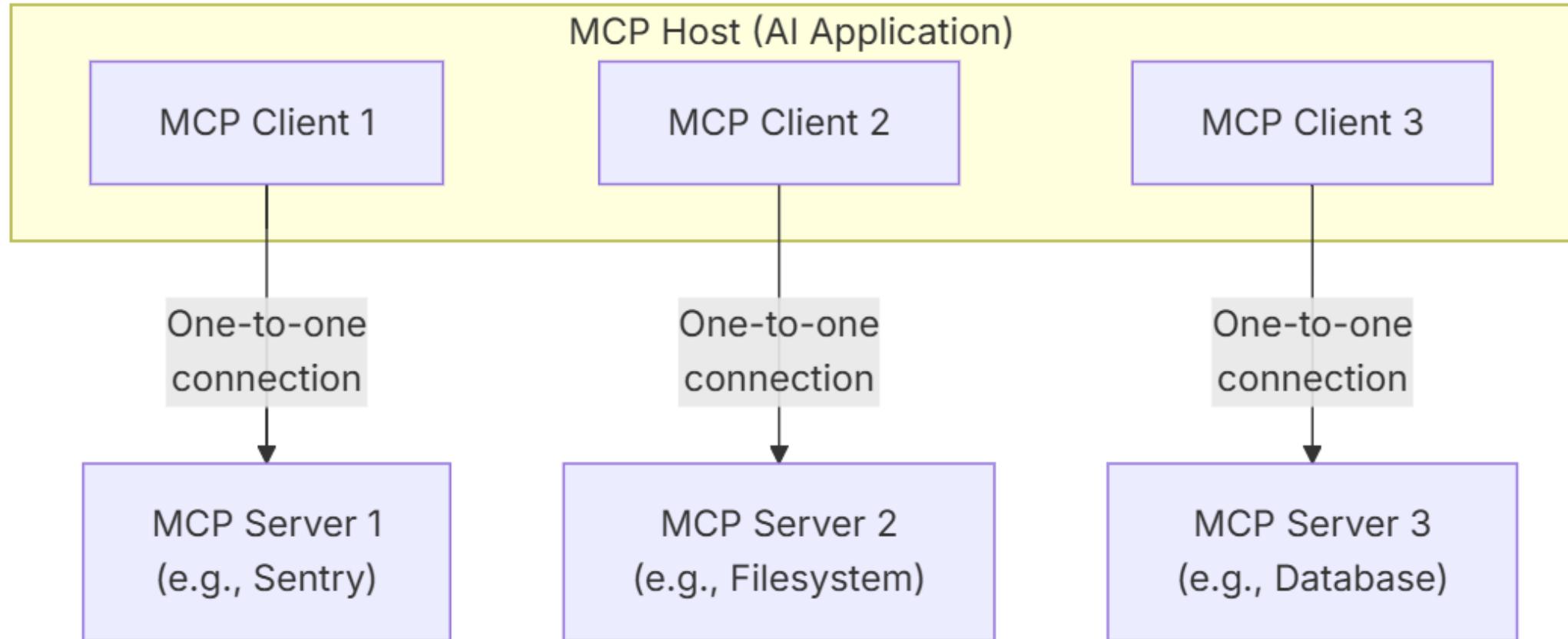


Reference: [What is the Model Context Protocol \(MCP\)? - Model Context Protocol](#)

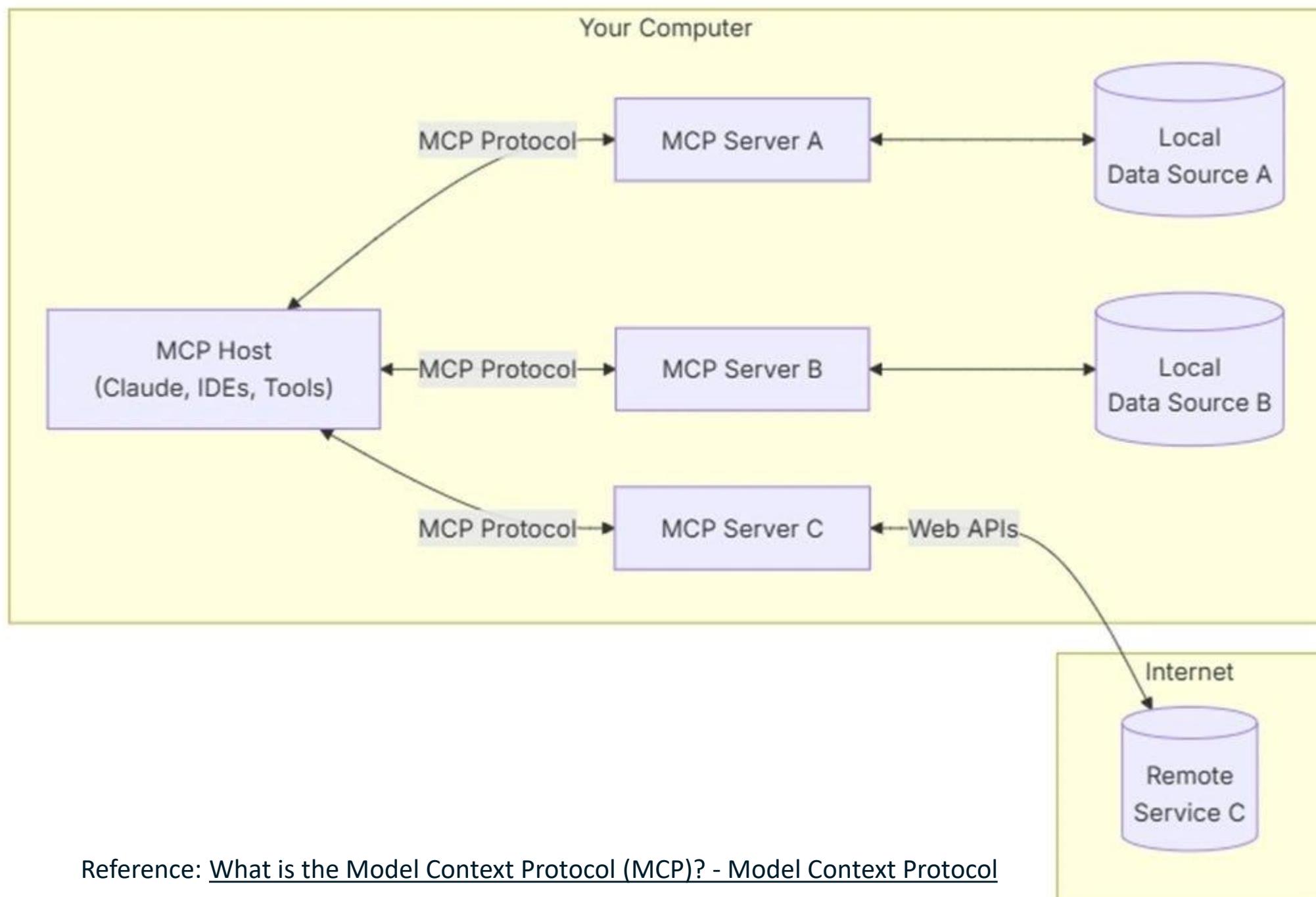
***MCP Servers removes the
AI-limitation of learning from
real-world data. It helps us
build apps that are more useful
and more context-aware.***

Reference: [What is the Model Context Protocol \(MCP\)? - Model Context Protocol](#)

MCP Communication



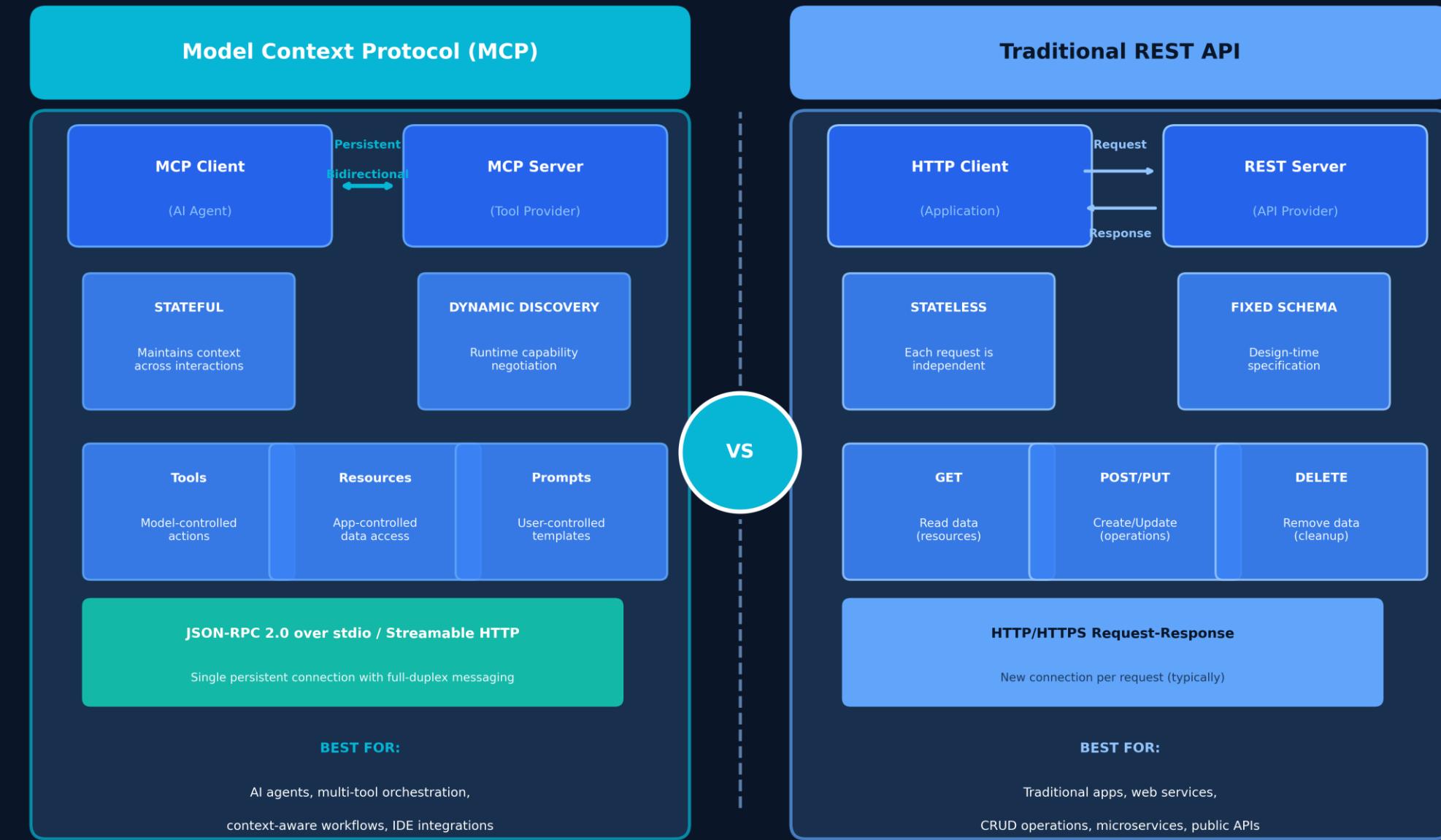
Reference: [What is the Model Context Protocol \(MCP\)? - Model Context Protocol](#)



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MCP vs Traditional API

Understanding the Fundamental Differences



Azure MCP Server

MCP Server for Azure. It enables AI agents and other types of clients to interact with Azure resources through natural language commands.



Configure Tools

Select tools that are available to chat.

36 Selected OK

Built-In

- Extension: AI Toolkit for Visual Studio Code
- Extension: Azure Load Testing
- Extension: Azure Resources
- Extension: Jupyter
- Extension: PostgreSQL
- Extension: Python
- Extension: SonarQube for IDE
- MCP Server: markdown
- MCP Server: playwright
- MCP Server: pylance mcp server

Open File... Open Folder... Clone Git Repository... Connect to... Generate New Workspace...

Customize your editor, learn the basics, and start coding

Recent

- mcp.mine D:\git\mcp
- mcp D:\git
- charris-e2e-demo2 D:\git\mcp
- training C:\git\mcp
- appstack C:\git\mcp

More...

Show welcome page on startup

CHAT

Build with agent mode

AI responses may be inaccurate.
If handling customer data, disable telemetry.

Deploy your App with ... Your quick guide to set up, provision, and deploy a new app with the azd CLI.

Learn the Fundamentals

Get Started w... Updated

Getting Starte... Updated

Add Context...

Add context (#), extensions (@), commands (/)

Agent ▾ Claude Sonnet 4 ▾

✖️ 🔍 ⏪ ⏴

EXPLORER

ZAVA_PHOTO_UPLOADER

- .venv
- .vscode
- infra
- src
- .env
- .env.example
- .gitignore
- azure.yaml
- DEPLOYMENT.md
- README.md
- requirements.txt
- run.ps1
- SETUP_COMPLETE.md

OUTLINE

TIMELINE

main 21 01 0 0 △ 0 SonarQube

DEMO



- MCP Servers in Action
 - Custom MCP Servers in .NET and Azure Functions (Frontend, Backend, Infra, etc) hosted on Azure



I built devdoglovers.com



Making AI assistants more helpful, one dog breed at a time!

Dog Breed Explorer

Discover dog breeds and find the perfect name for your furry friend!

Filter by size: All Sizes

 **Labrador Retriever**  0

Large
Friendly, outgoing, and active
⚡ High ⏳ 10-12 years

Labs are friendly, outgoing, and active.

 **French Bulldog**  0

Small
Playful, adaptable, and smart
⚡ Medium ⏳ 10-12 years

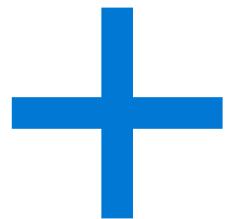
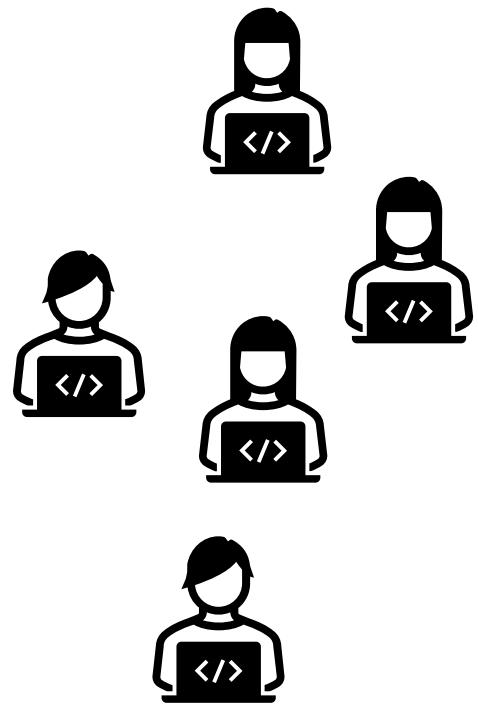
The French Bulldog is a small companion dog.

 **Golden Retriever**  0

Large
Intelligent, friendly, and devoted
⚡ High ⏳ 10-12 years

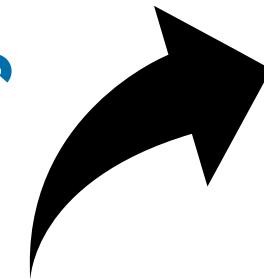
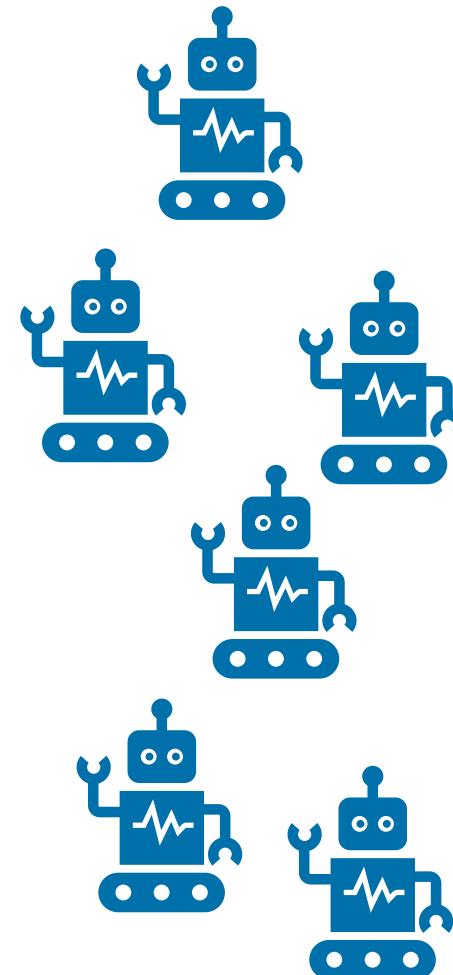
Golden Retrievers excel at retrieving game for

Developers
/ AI Engineers



MCP Servers

AI Agents



Smarter
Apps



JONAH ANDERSSON
TECH



***“Learn how to master AI,
before it masters you
and the apps you build.”***

Jonah Andersson



Recommended Learning

Generative AI for Developers



Learn MCP Servers for Developers





■ Learn By doing

■ ... and HAVE FUN
like my dog, Lorentz!

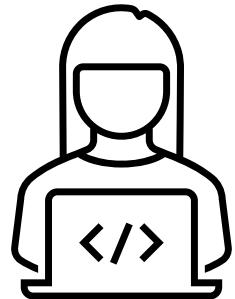


Questions?



Thank you!

Feel free to connect 😊



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Email: jonah@jonahandersson.tech

LinkedIn: Jonah Andersson

**Session feedback
available in home feed
of the app after the
session**





MC2MC
—CONNECT—