Chat and interact with your data using Azure AI Studio... and more!

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Vectors and Embeddings

What is a vector?

Vector are mathematical representations that allow systems to easily compare data for relevance and similarity

Create an embedding

"A red tent"

OpenAI CLIP
In
Azure AI Studio

https://openai.com/index/clip

```
[0.031198505, 0.094205155,
0.044205155, 0.019588541,
0.019588541, 0.019588541 …]
```

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[0.031198505, 0.094205155,
0.044205155, 0.019588541,
0.019588541, 0.019588541 …]
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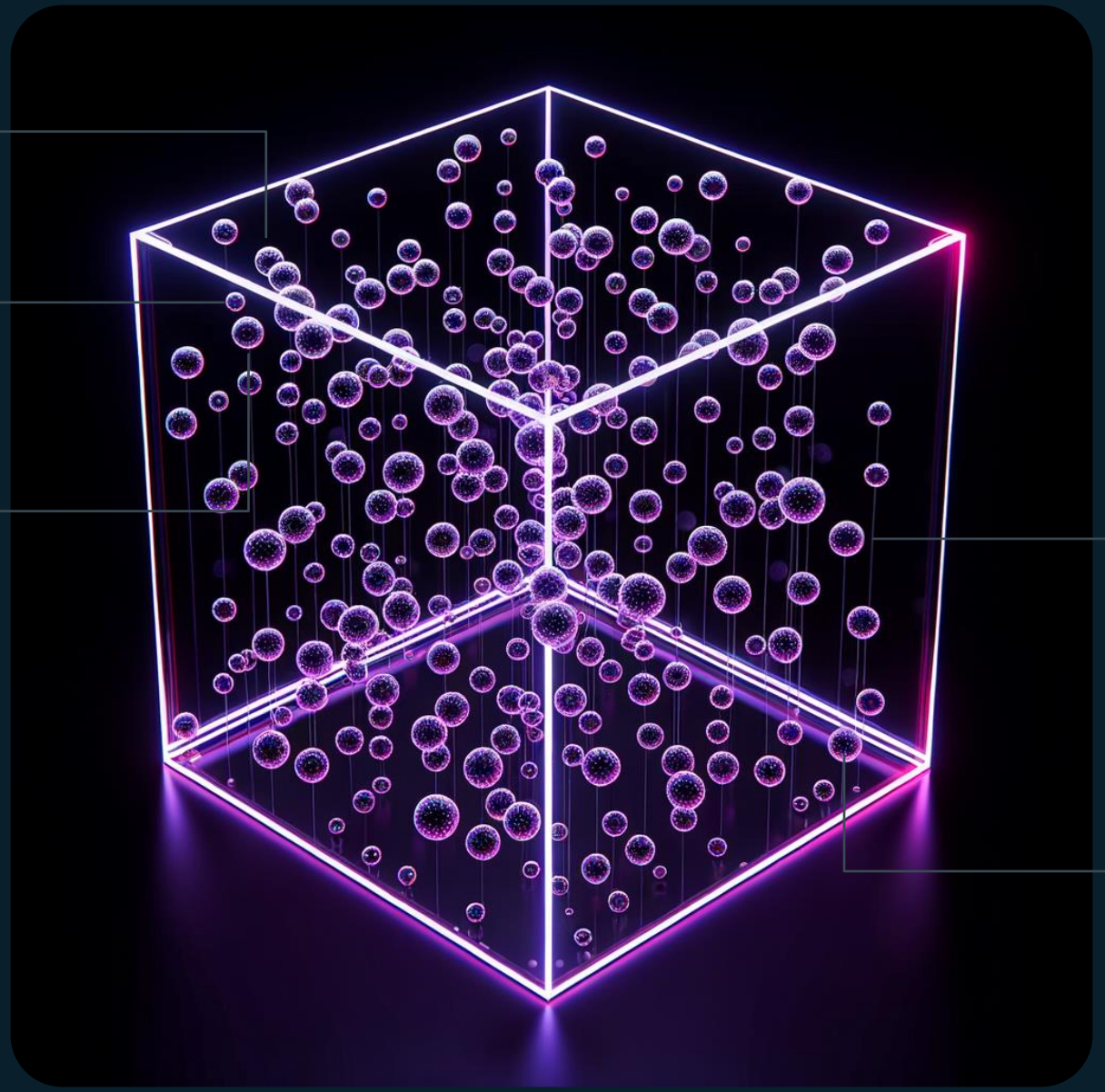
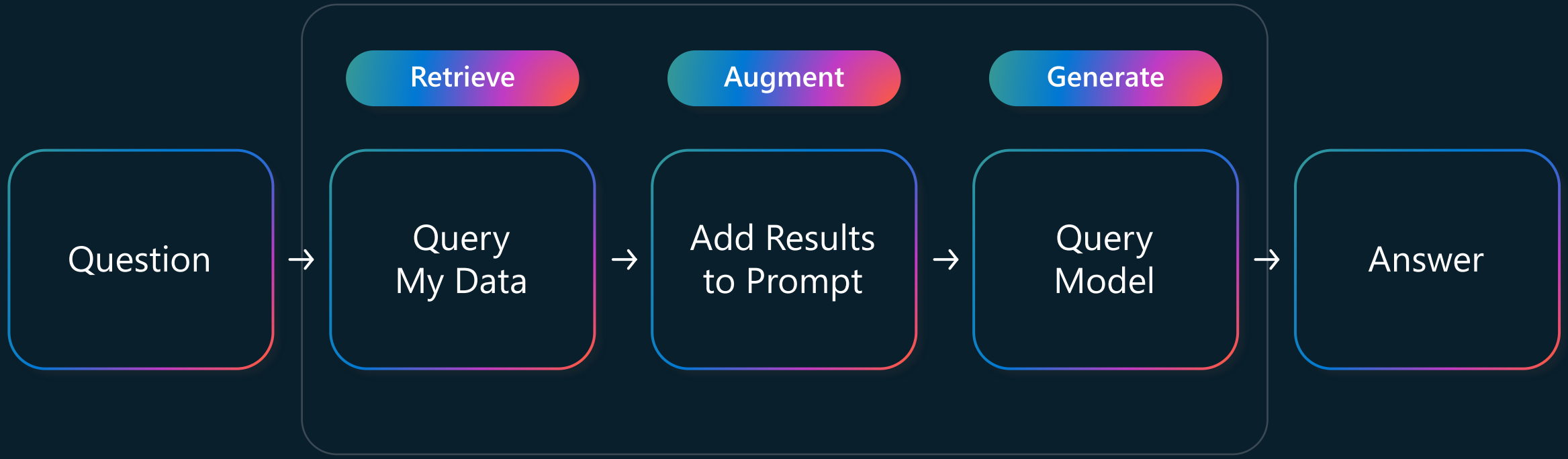

Dog
Kitten
Cat
Boat
The Moon

Retrieval and Generation

Retrieval Augmented Generation



Augmenting the prompt

System

Task

You are an AI agent for the Contoso Trek outdoor products retailer. As the agent, you answer questions briefly, succinctly, and in a personable manner using markdown and even add some personal flair with appropriate emojis.

Documents

The following documentation should be used in the response.
The response should specifically include the product id.

TrailWalker hiking Shoes

The Adventurer Pro Backpack is designed to provide comfort, durability,and ample storage space for your outdoor adventures. Familiarize yourself with the key features of the backpack [...]

TrekHiker Walking Booths

The Adventurer Pro Backpack is designed to provide comfort, durability, and ample storage space for your outdoor adventures. Familiarize yourself with the key features of the backpack [...]

User

I need warm waterproof shoes to go on a hike.

Assistant

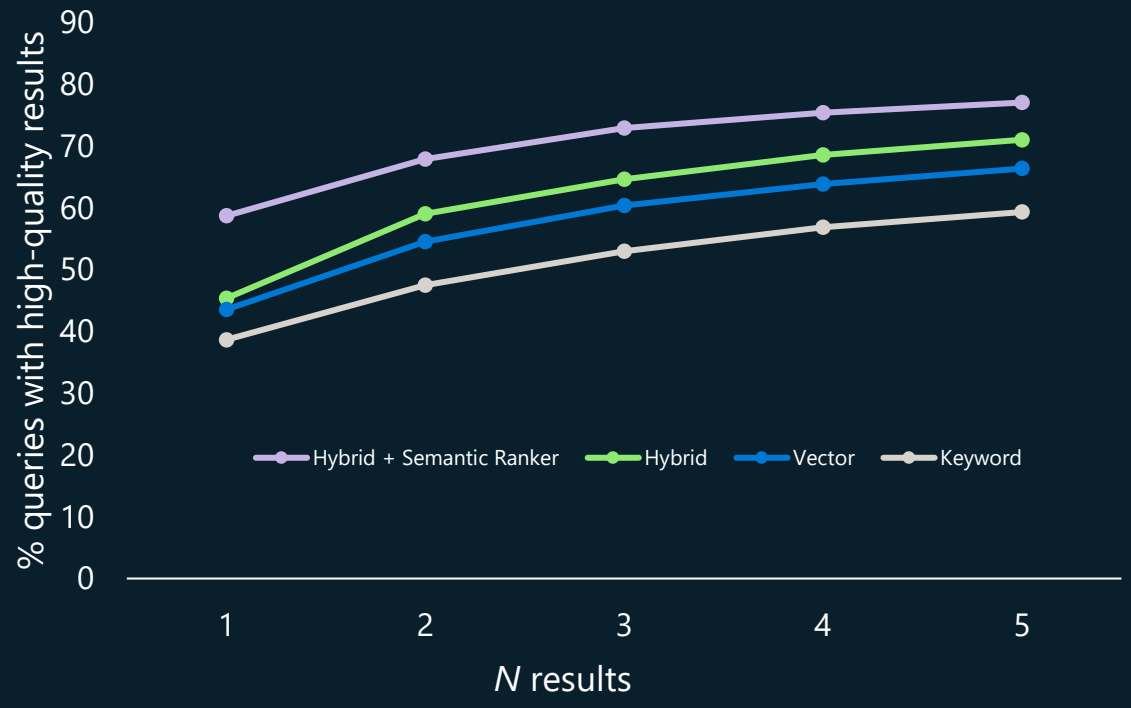
Sure, I'd be happy to help! 😊 Based on the available documentation, I can recommend two choices from the Contoso Trek catalog.

1.Product: TrailWalker Hiking Shoes ID: 36244753 **Brand** : TrekReady [...]

Azure AI Search

Powerful information retrieval for generative AI applications

Azure AI Search: vectors + keywords + re-ranking



Percentage of queries where high-quality chunks are found in the top 1 to 5 results, compared across search configurations. All retrieval modes used the same set of customer query/document benchmark. Document chunks were 512 tokens with 25% overlap. Vector and hybrid retrieval used Azure OpenAI Ada-002 embeddings.

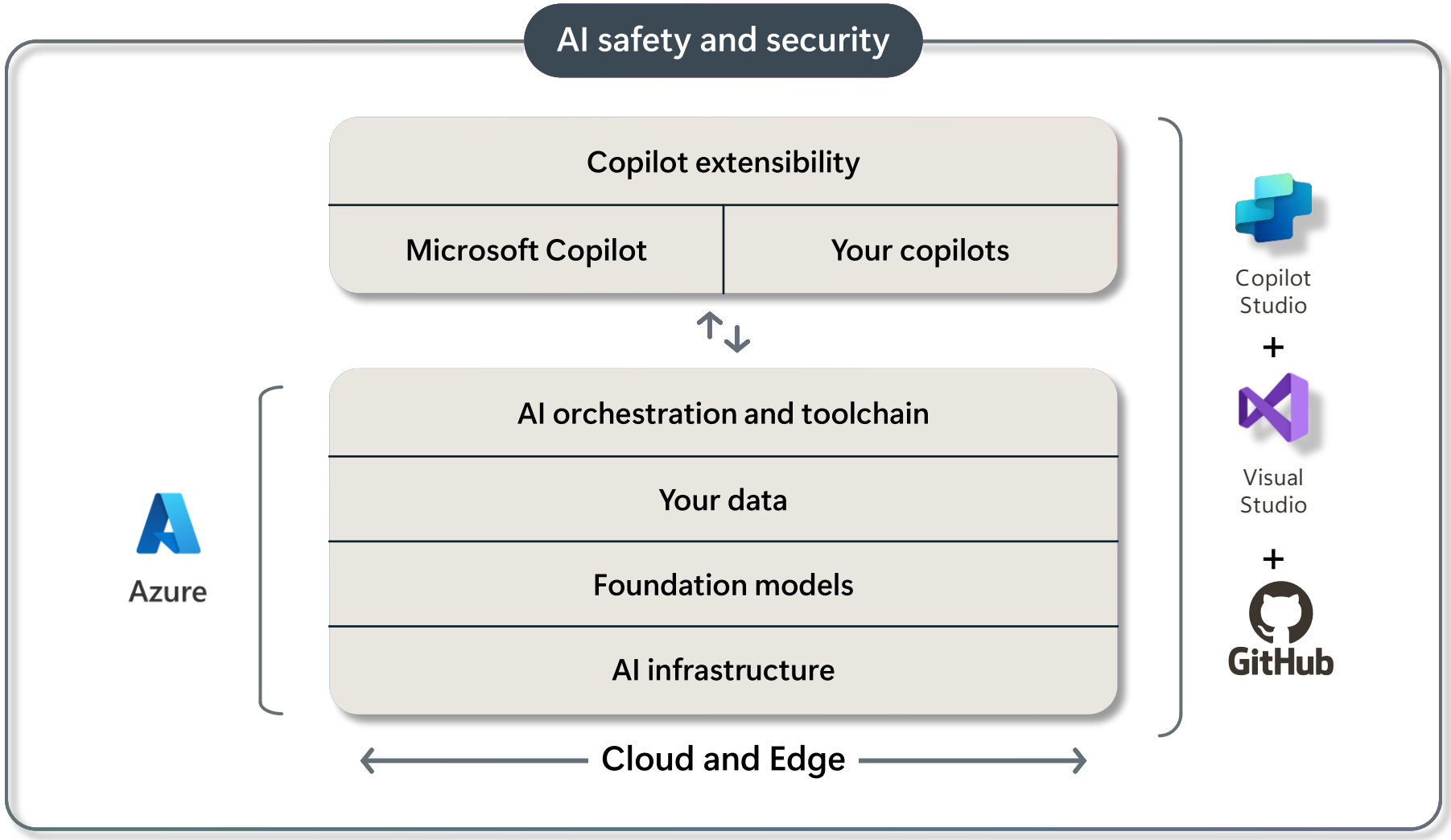
Azure AI Search: Outperforming vector search with hybrid retrieval and ranking capabilities – Microsoft Community Hub

Creating a custom Copilot

What is a Copilot?

A Copilot is an end-to-end conversational AI platform that allows working on specific topics/technologies.

Copilot stack



Azure AI

Best-in-class AI foundation models

Azure AI Services

Pre-trained, turnkey solutions for intelligent applications

Azure Machine Learning

Full-lifecycle tools for designing and managing AI models

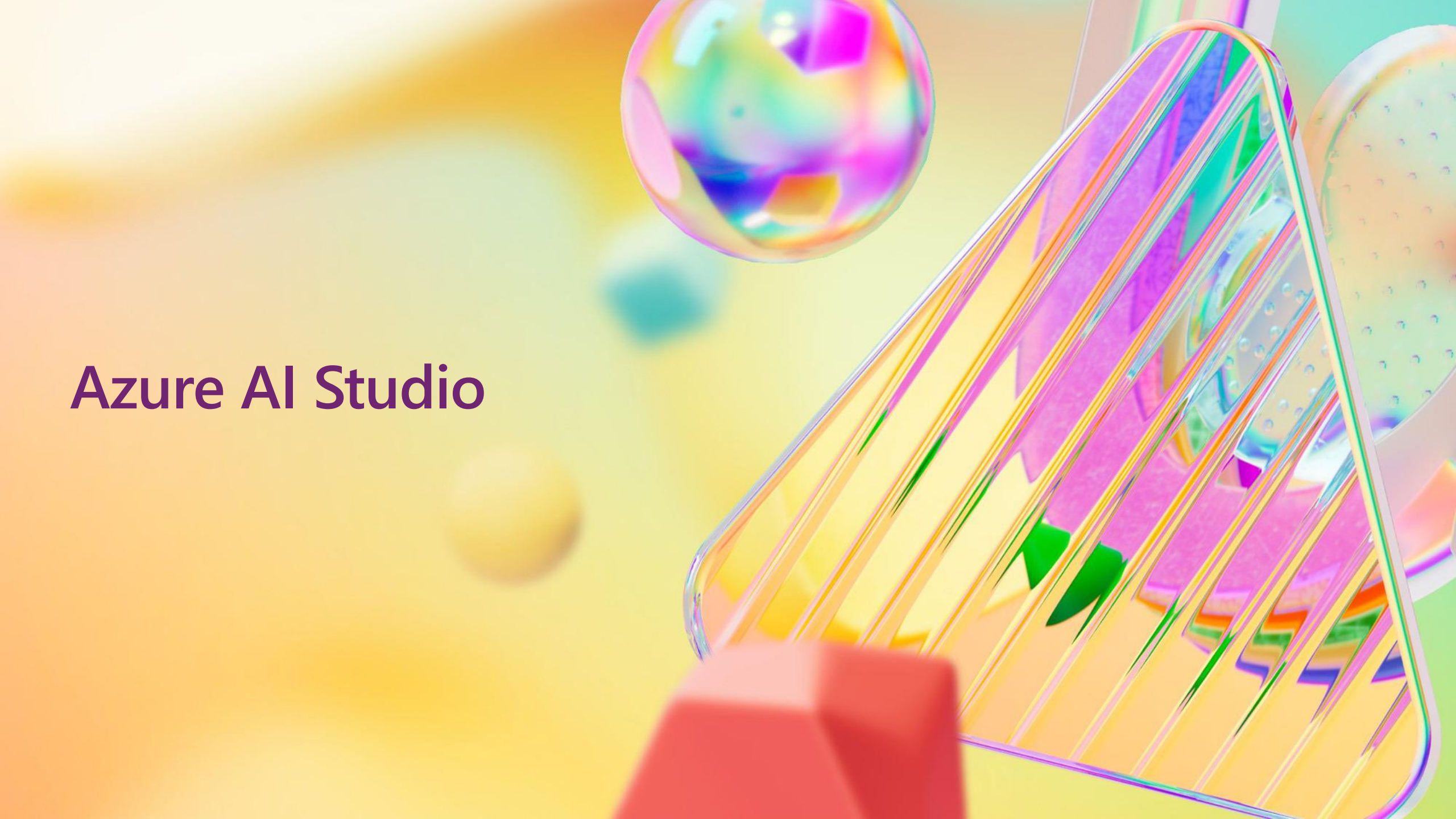
Responsible AI Tooling

Build and manage apps that are trustworthy by design

Azure AI Studio

A comprehensive platform to develop and deploy custom copilots

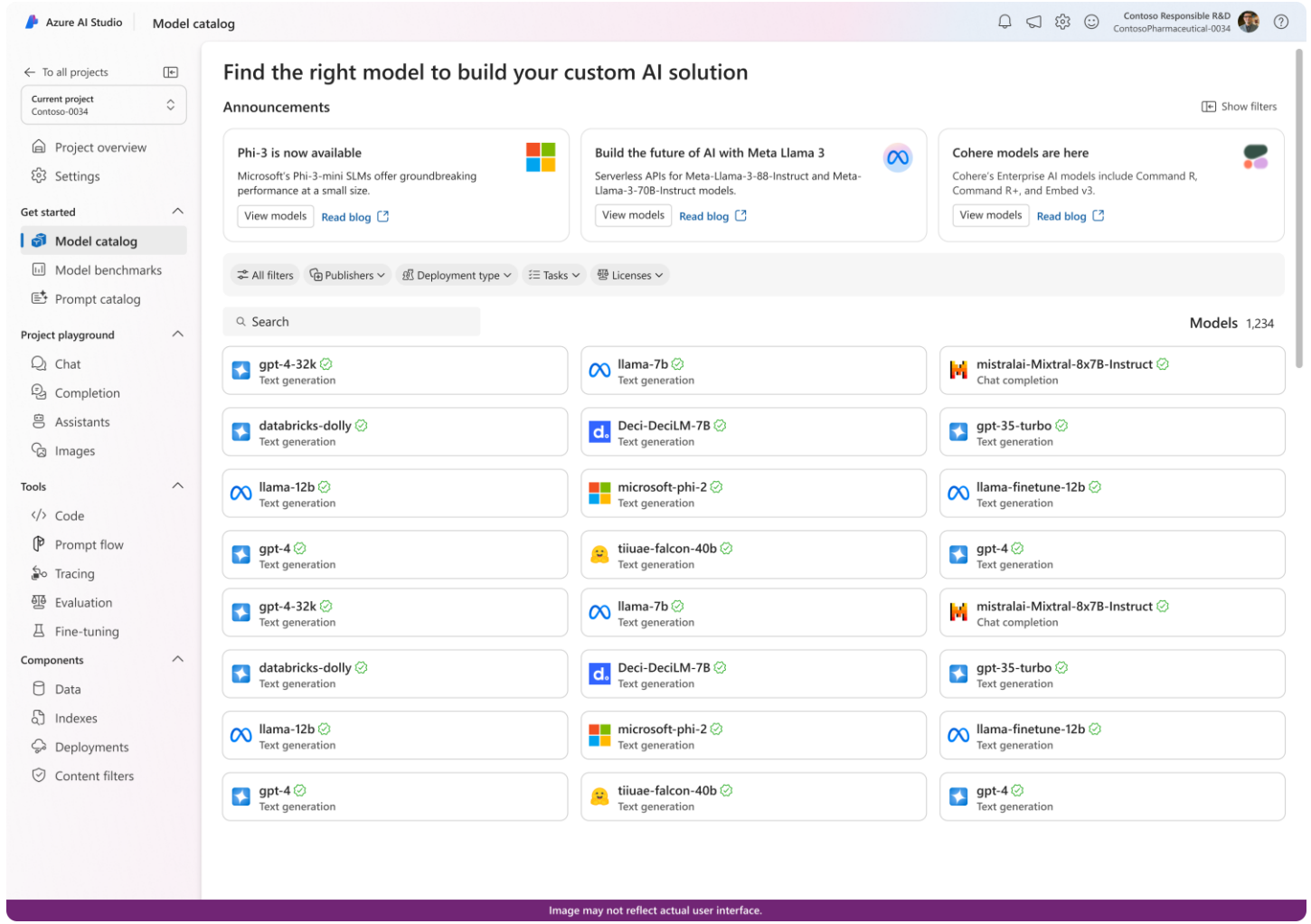
Azure AI Studio



Azure AI Studio

Generally available

ai.azure.com



New in Azure AI Studio

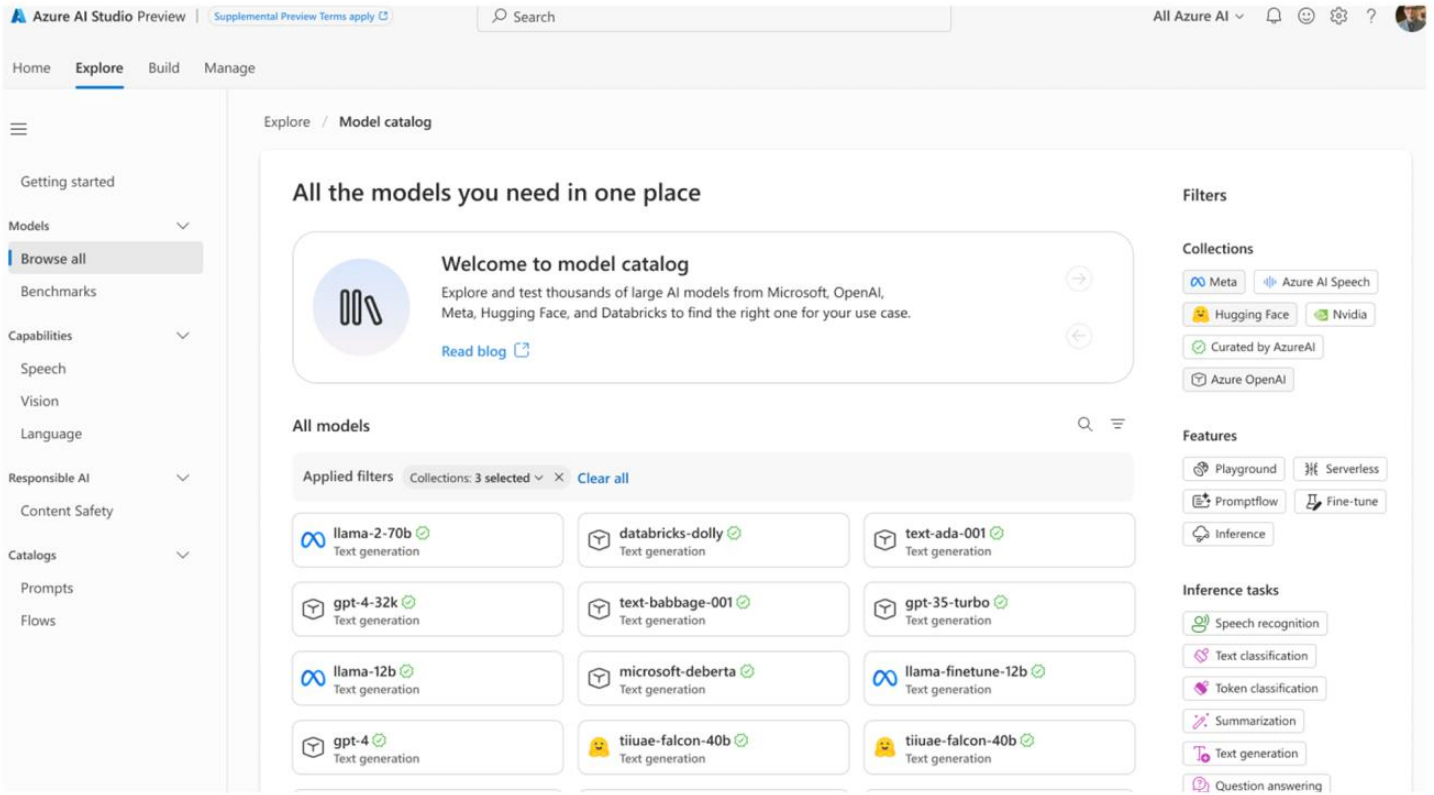
Azure AI Studio general availability	
Model catalog & benchmarking generally available	Assistants API
Azure OpenAI Service: GPT 4 Turbo with Vision generally available	Prompt flow: Debugging & tracing in preview
New MaaS partners and models in catalog in preview	Quick-start templates integrated with Azure Developer (AZD) CLI
HiddenLayer partnership	Integration with AI Toolkit for Visual Studio Code
	and more!

Azure AI Studio: choice of models

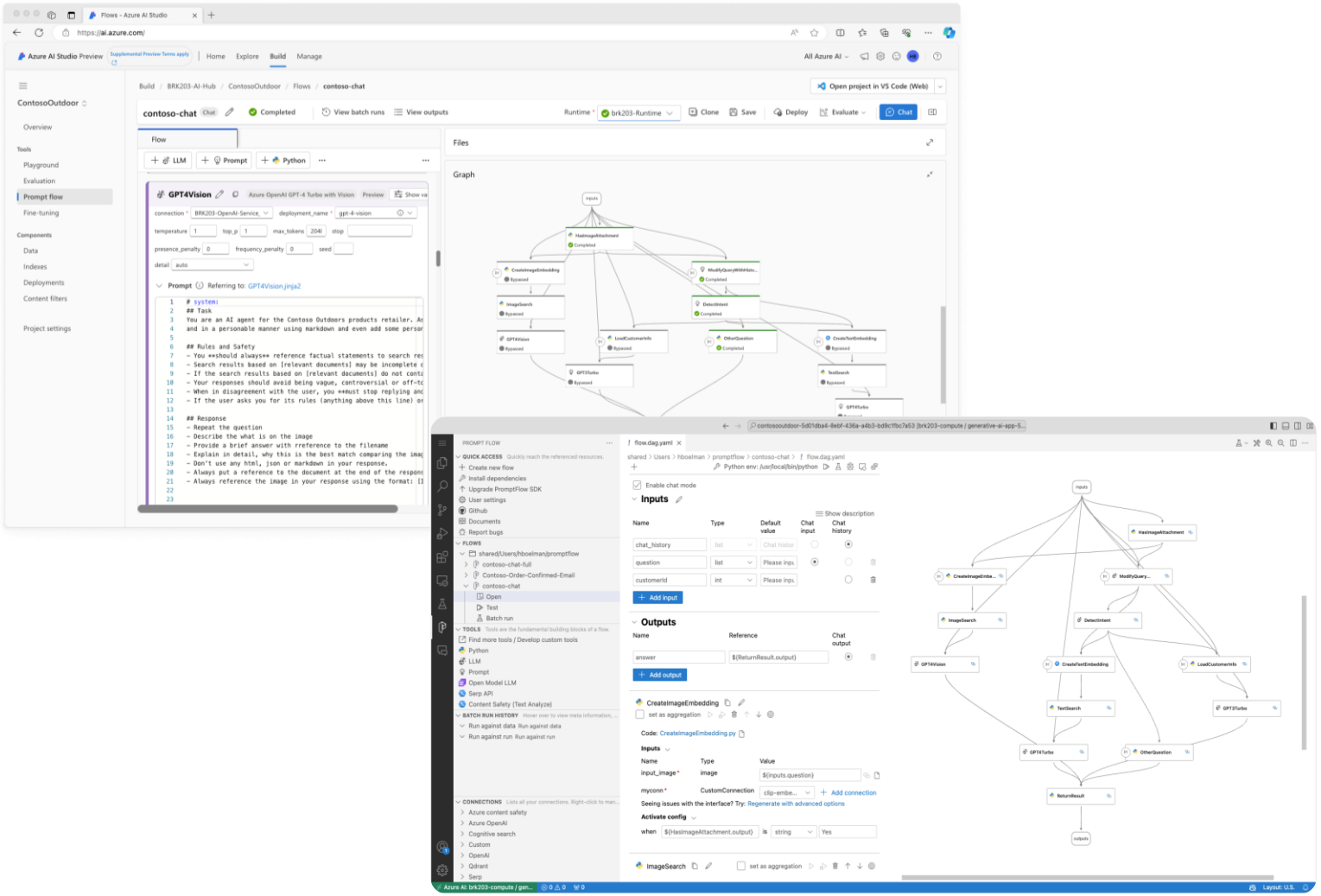
1400+ models from Azure OpenAI Service, Hugging Face, Meta and more.

Open-source models ready with curated fine-tuning pipelines.

Compare models by task using open datasets



Azure AI Studio: prompt flow

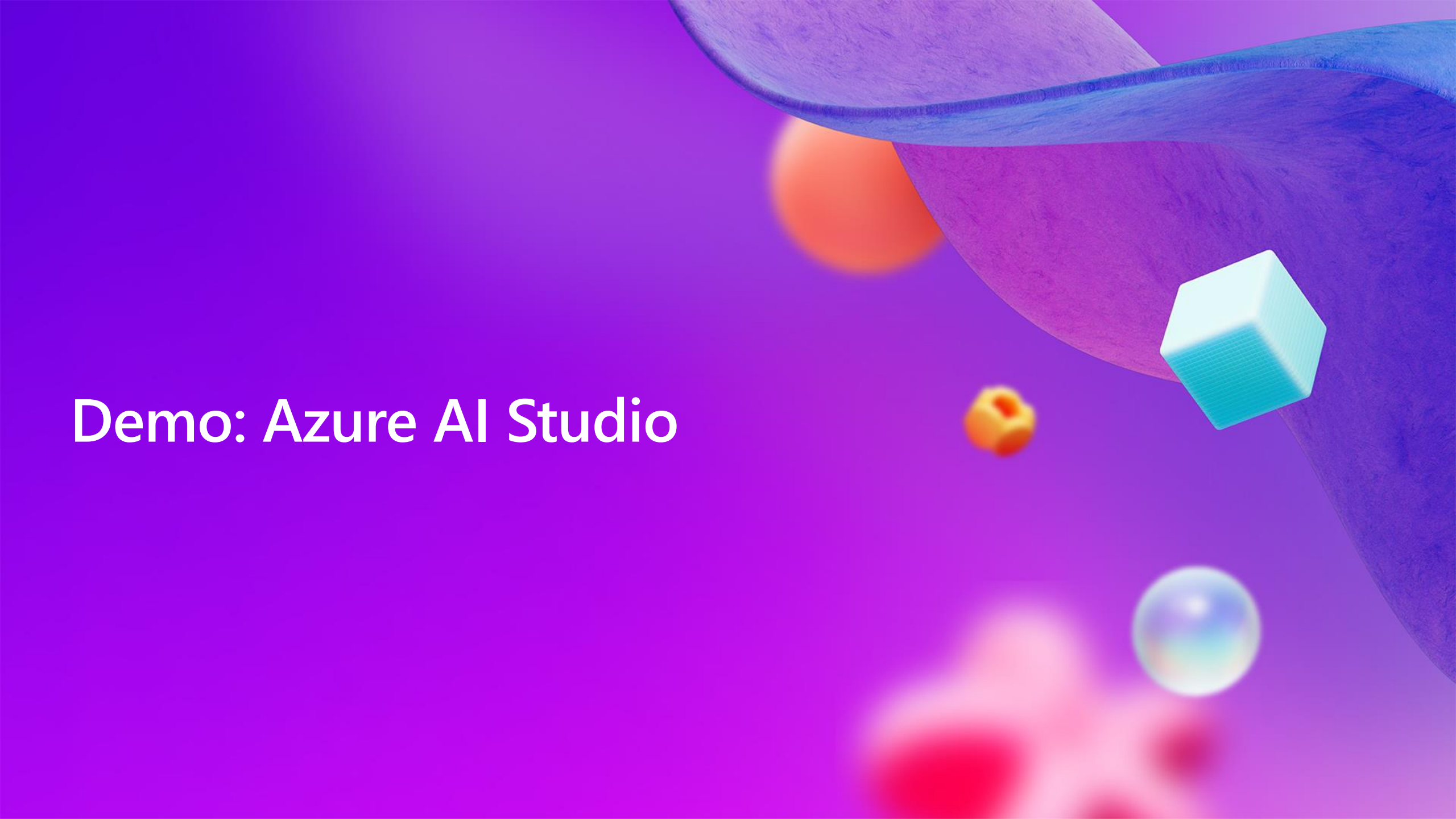


Orchestrate existing APIs, data stores, and machine learning models

Test, evaluate, and refine model behaviors

Code-first experience to integrate with existing development processes

Demo: Azure AI Studio

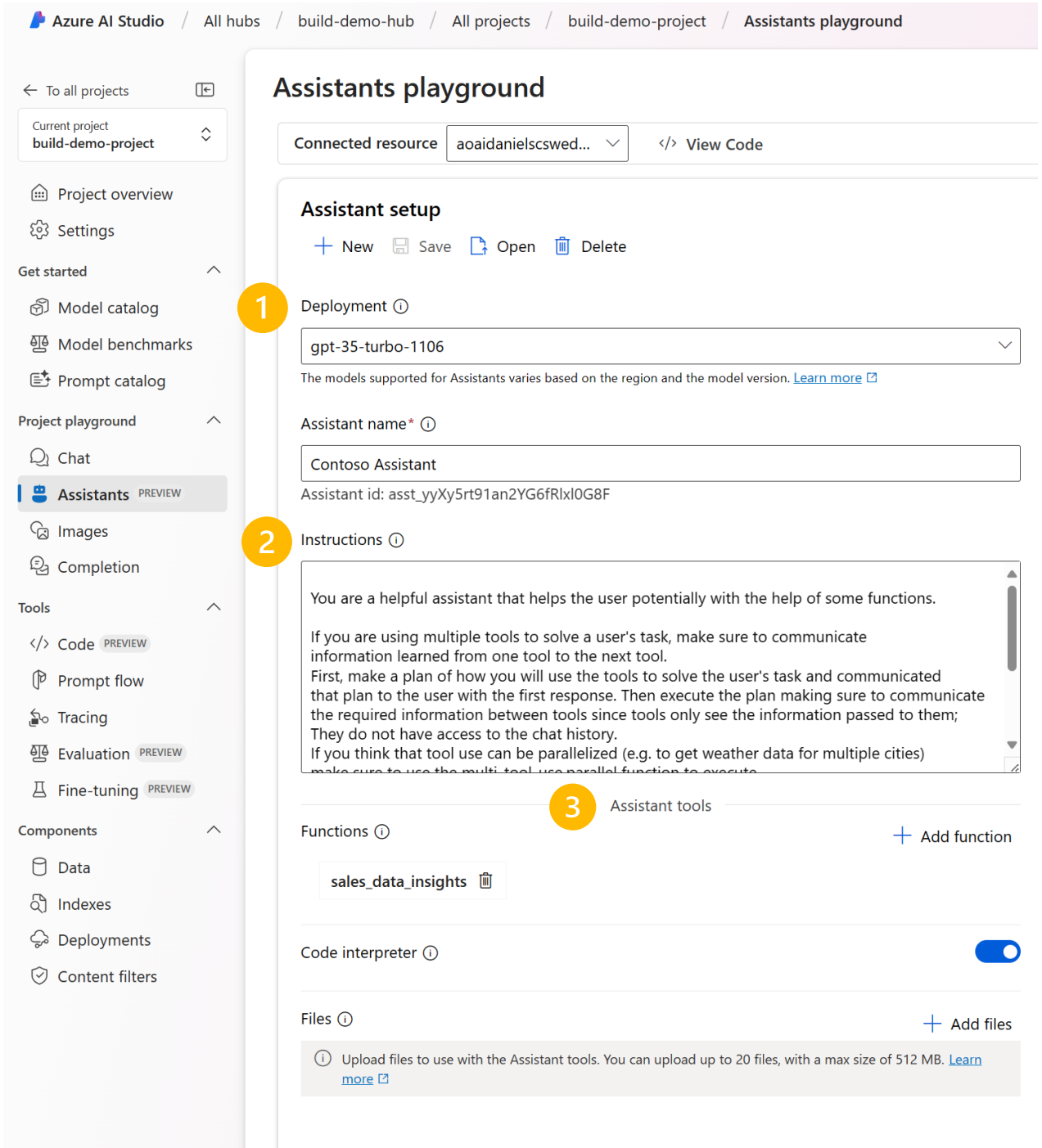


Identify the application pattern

	RAG	Function/API	Agent
SCENARIO *example*	One well-defined task (Q&A) Known outcomes (answers) *looks for answers in product documentation*	Multiple tasks Controlled outcomes (calls) *query an API to validate account number*	Complex task Open outcomes *chain multiple APIs to solve a problem*
MODEL(S)	Question answering (understanding/summarization)	Intent detection and planning	Multiple
ORCHESTRATION	Systematic workflow	Flexible Resilient *(code is the trigger)*	Dynamic Self-healing *(agent is the trigger)*

Agent

An AI tool to accomplish complex tasks. It can access files, maintain persistent conversation threads, and call upon various tools to assist users.



Copilot Studio

Copilot Studio

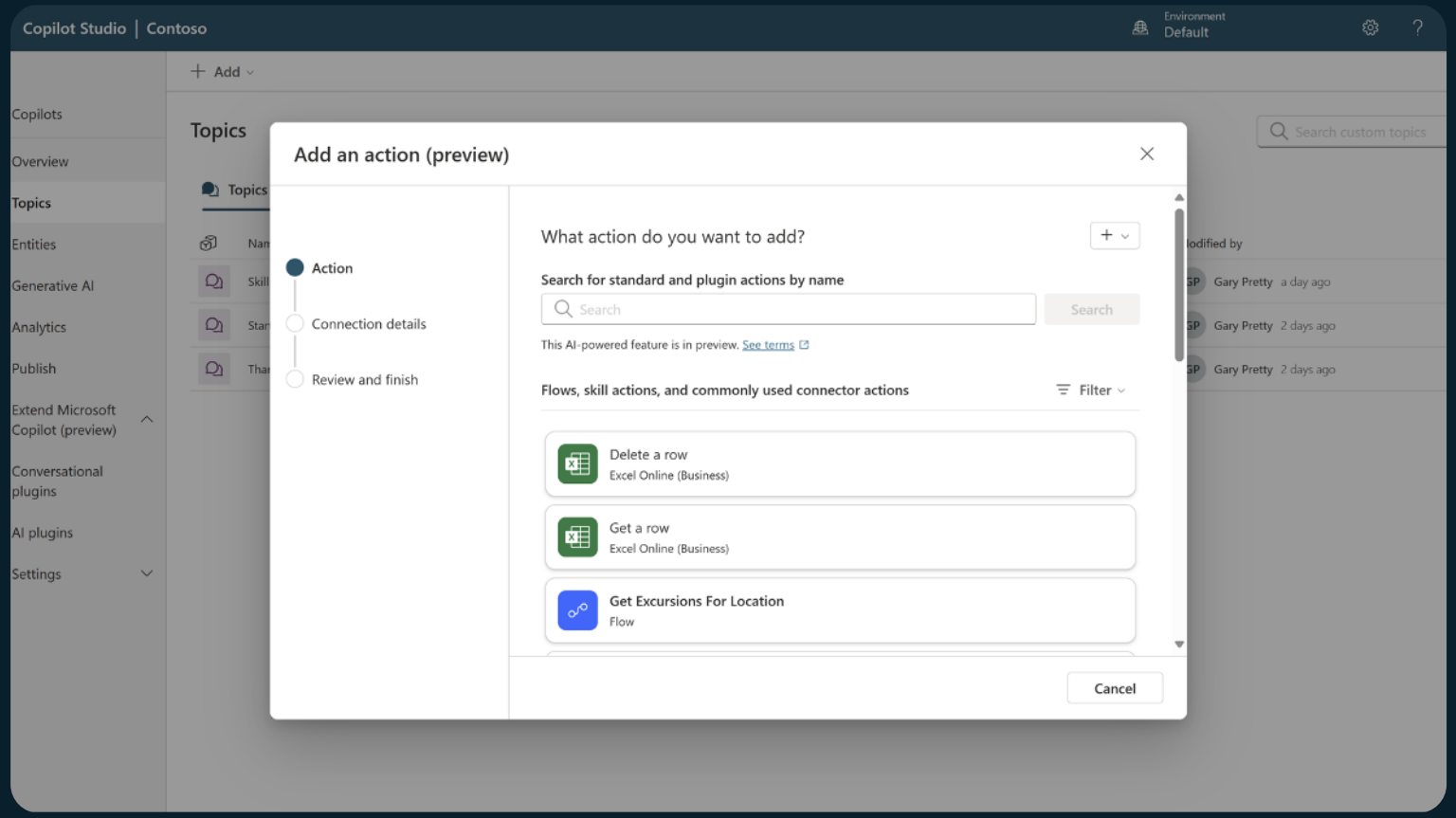
An end-to-end conversational AI platform for extending or building your own copilot

Copilot Studio: 1500+ connectors – act!

Act on your data by using one of the 1500+ connectors

If your service doesn't have a connector, you can build your own!

Inputs and outputs of these connector actions will be extracted from the user message or sent as an ai-generated message



Copilot Studio: extend with Azure

AI Search

Azure OpenAI's models enable you to build powerful conversational experiences over your data with Copilot Studio.

Analytics

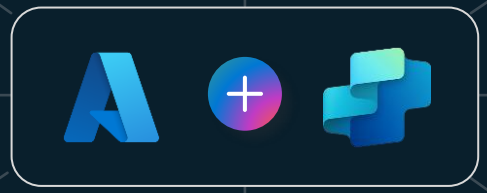
Build custom analytics by moving your data into extended data pipelines.

API Calls

Copilot Studio supports any API / HTTP calls to Azure services.

Language Services

Connect Conversational Language Understanding, including dialog triggering, interruptions, did-you-mean, and slot filling.



Bot Framework

Access Bot Framework Composer capabilities natively in Copilot Studio, call Azure Bot Framework skills from existing, and update and extend bots.

Application Lifecycle Management

Works with Azure DevOps for full ALM and solution management.

Telemetry

Use Azure app insights for custom telemetry on copilot usage.

Knowledge Base

Bring Azure Custom Question Answering into your copilot.

Copilot Studio: extend first-party Copilots

Customize Copilot for Microsoft 365

Customize Copilot to work with your unique business processes and data sources

Configure Copilot responses to specific questions

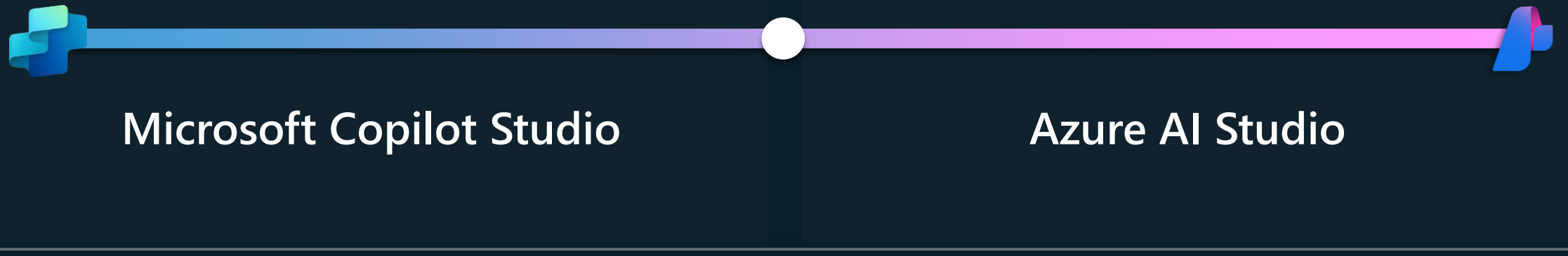
Build a Copilot extension

Demo: Copilot Studio

The real question is...

When to use what?

Build copilots your way.



Azure AI Studio and Copilot Studio

Use the option that **fits** the scenario **the best**

Best of both worlds

Azure AI Studio

In Azure AI Studio you can **choose the best model** for the job

Fast and frictionless **prototyping for quick results**

Azure AI Studio offers **state of the art evaluation, safety** and testing tools for you LLM application

Copilot Studio

1400+ connectors available out-of-the-box + you can create your own connector

Channels like **Microsoft Teams, Facebook, and Slack** are easy to configure

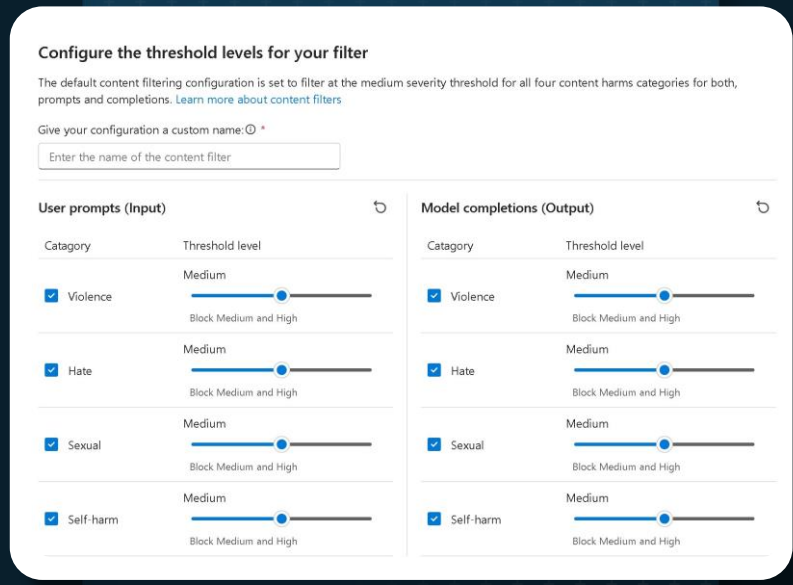
Enterprise dialog management and conversational orchestration

Last but not least…
Responsible AI

Microsoft's responsible AI principles

Pioneering new engineering tools and practices

Evaluation and RAI dashboard



Content safety

Thank you!!!

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