



# Latest news from Microsoft Build 2024

30 . 5 . 2024  
Milan



**Andrea Benedetti**  
Sr Cloud Architect - Microsoft



/in/abenedetti



@anBenedetti



<https://github.com/anbened>

# Sponsors

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Gold sponsors \_\_\_\_\_



Silver sponsors \_\_\_\_\_

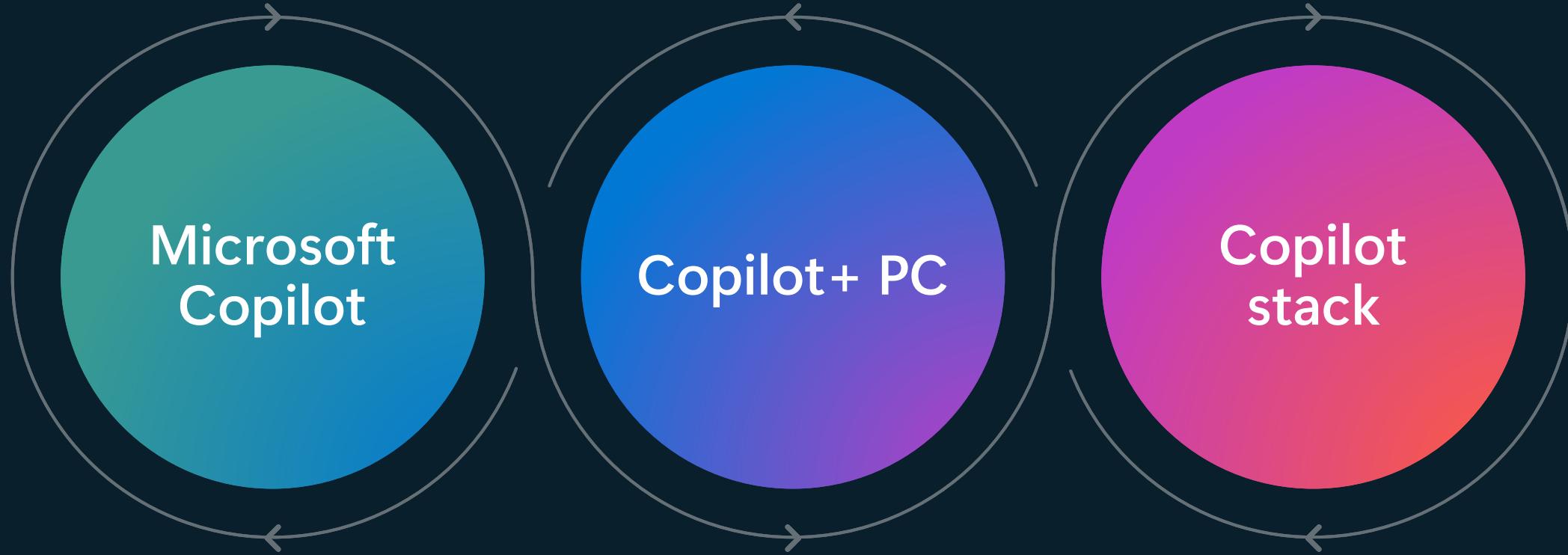


Microsoft Build just happened, and it was epic.

There is literally something new every day.

50+

new updates





# Copilot+PC

Powered by Neural Processing Units (NPUs), these devices bring high performance and efficiency right to your desk

# Windows Copilot Runtime

Applications + Experiences

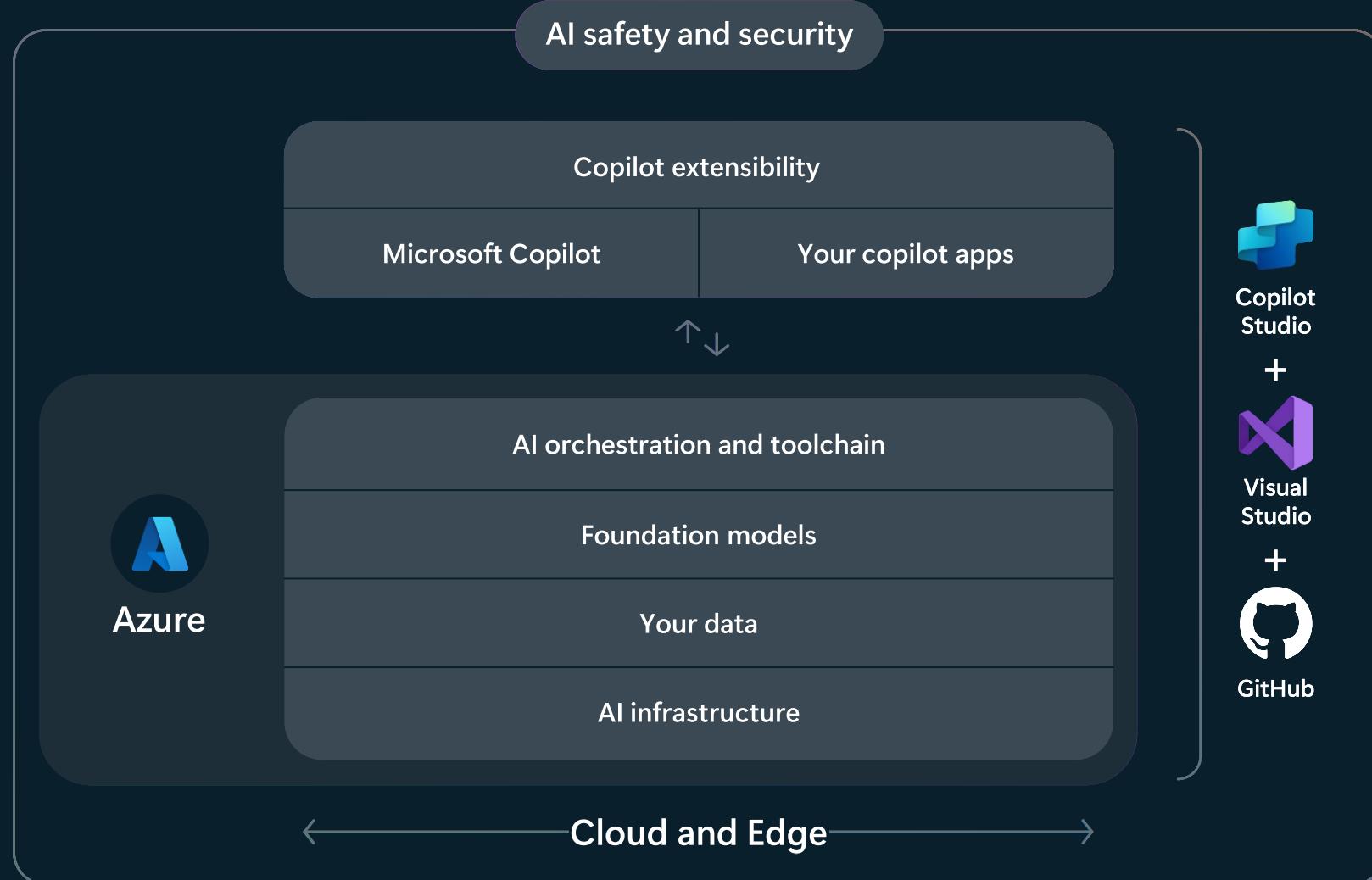
Windows Copilot Library + On-device models

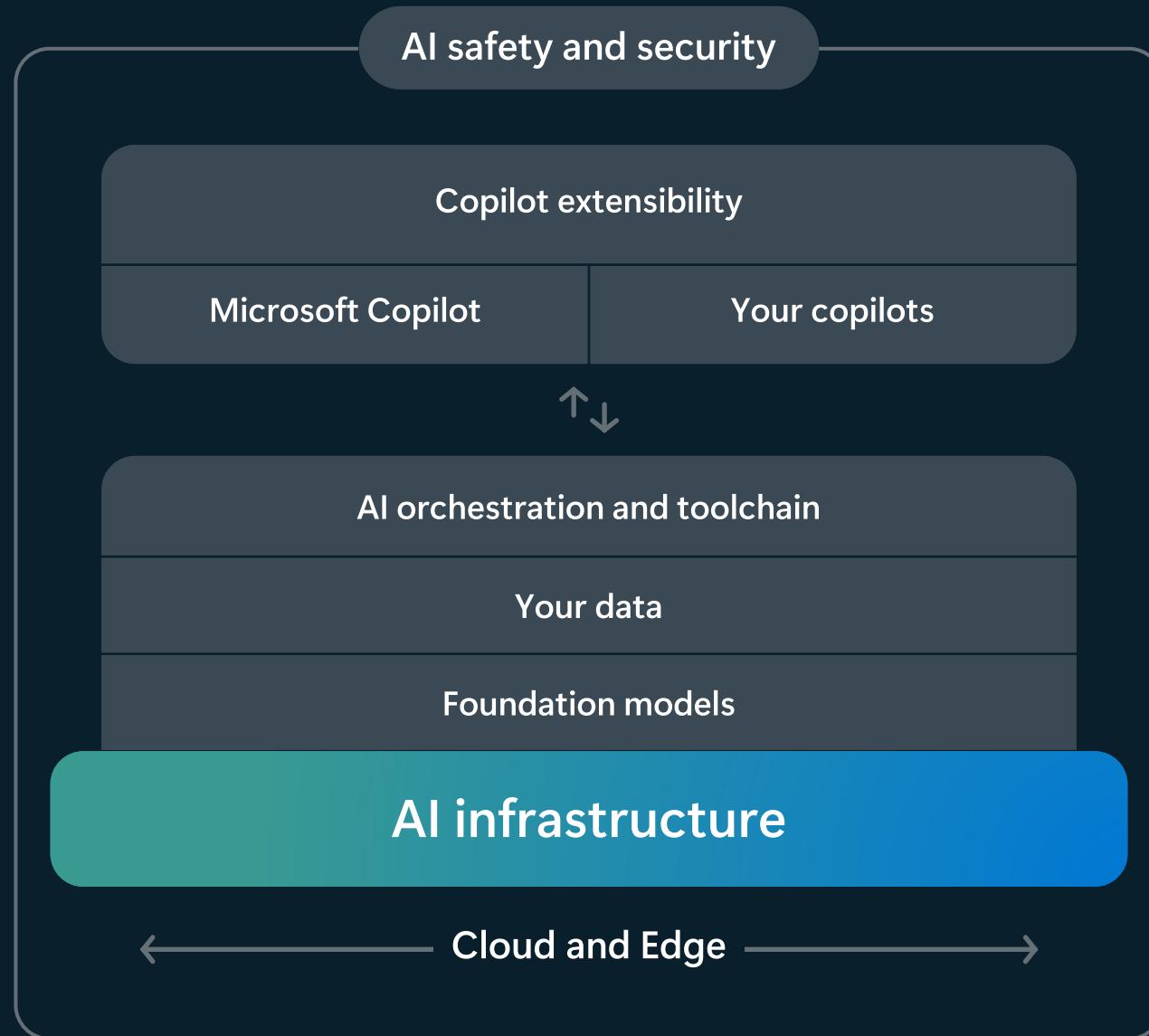
AI frameworks + Toolchains

← ━━━━━━ Silicon ━━━━━━ →

Extends AI capabilities across Windows, including AI-infused layers & tools for dev

# Copilot stack



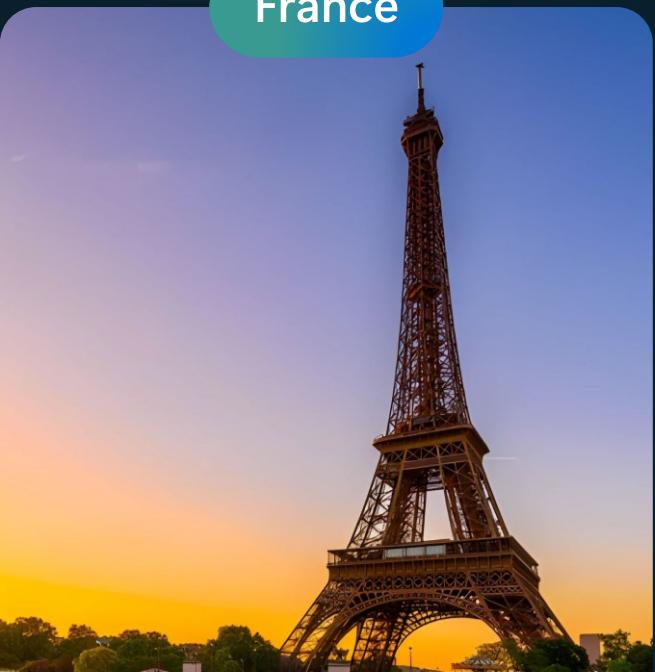


A semi-transparent globe is centered on Earth, showing continents and oceans. Cyan dots represent Azure regions, with a higher density in North America and Europe, and smaller clusters in Asia, Australia, and South America.

60+

Azure regions

## France



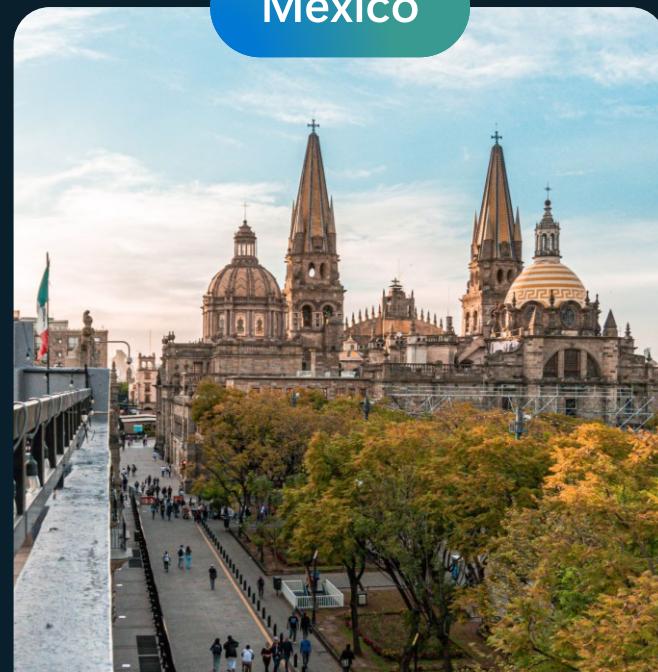
Largest investment to date to accelerate the adoption of AI, skilling, and innovation

## Wisconsin



\$3.3B investment to spur AI innovation and economic growth

## Mexico

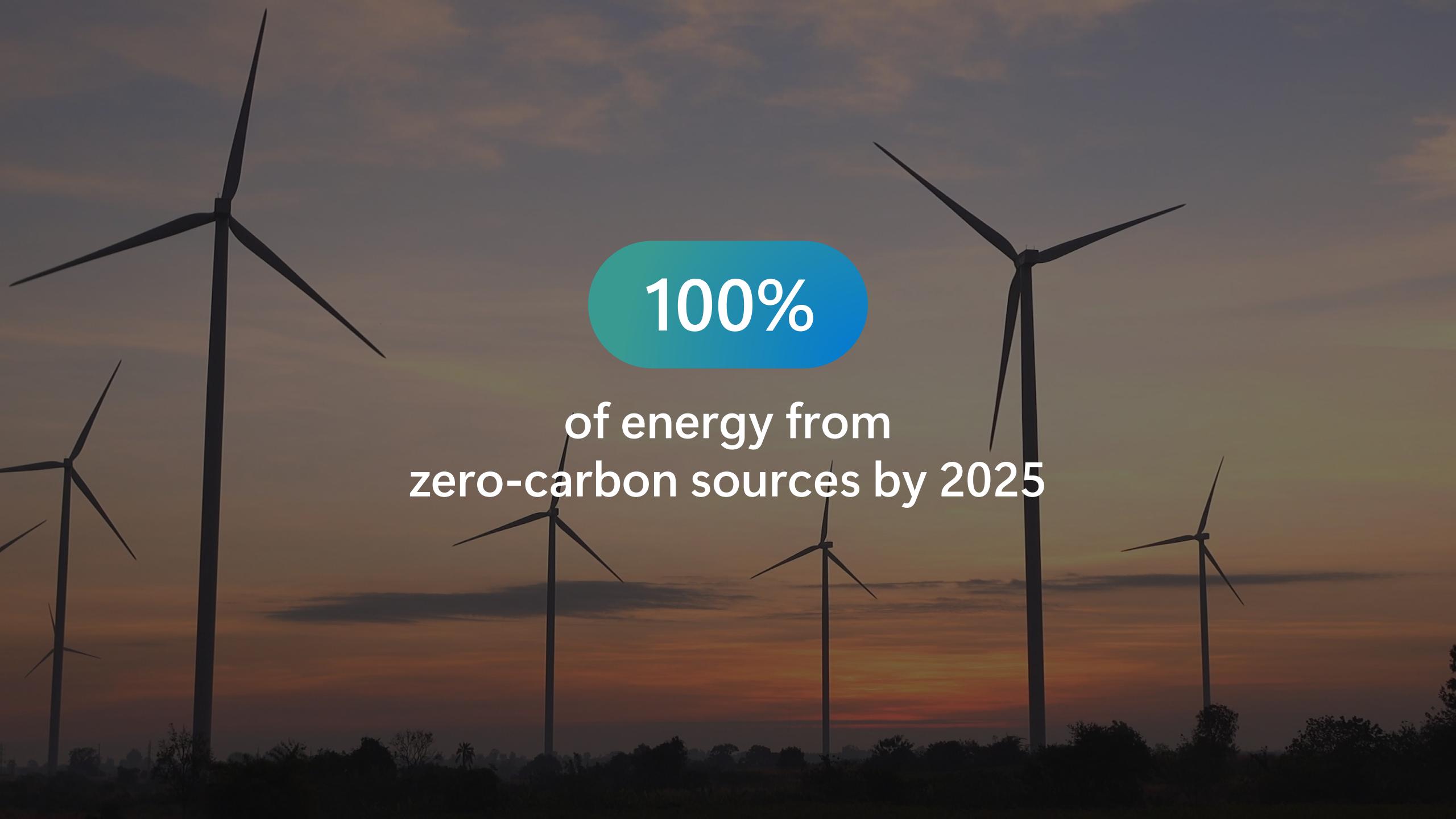


First hyper-scale cloud datacenter region

## Malaysia



US\$2.2B investment to fuel cloud and AI transformation

The background of the image shows several wind turbines standing in a field under a sky transitioning from blue to orange and yellow at sunset. The turbines are dark silhouettes against the bright horizon.

100%

of energy from  
zero-carbon sources by 2025

# Microsoft Azure

← End-to-end systems optimization →



Datacenter



CPU



AI accelerator



IO



Network

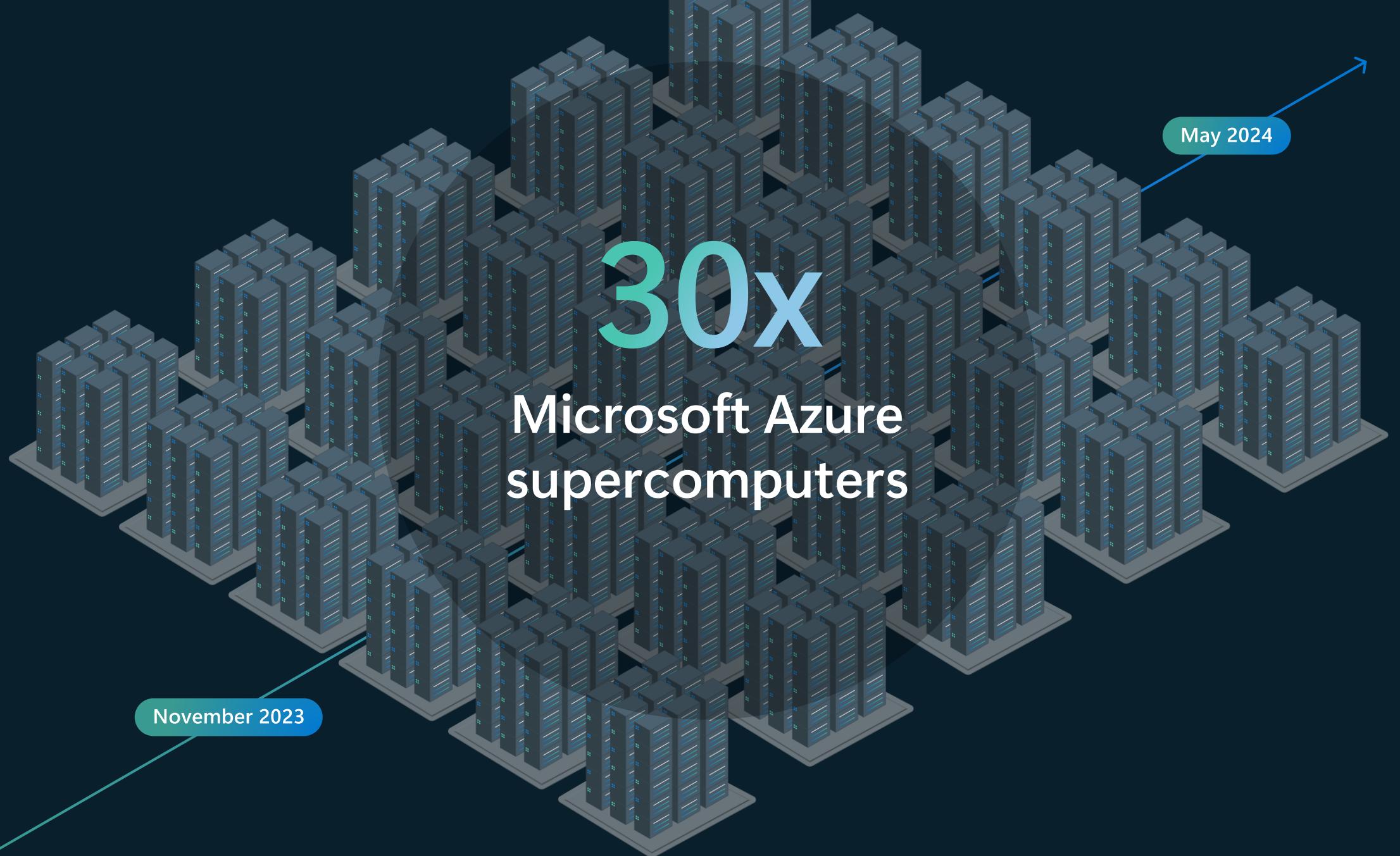


#1 supercomputer for cloud

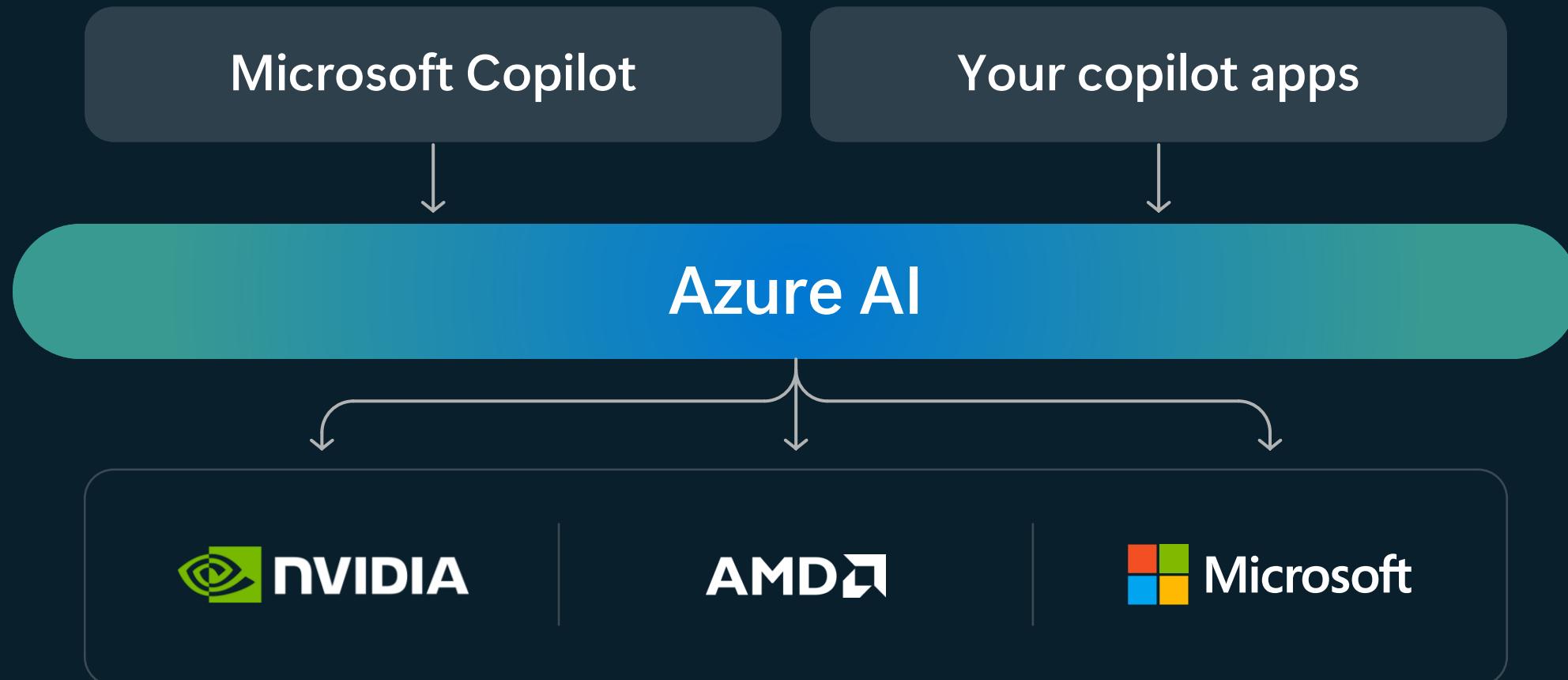
# Microsoft Azure

561.20 PFlop/s

TOP500, May 2024



# Best AI performance. Lowest cost.



GPT-4

GPT-4 Turbo

GPT-4o

Cost

Speed

March 2023

November 2023

May 2024

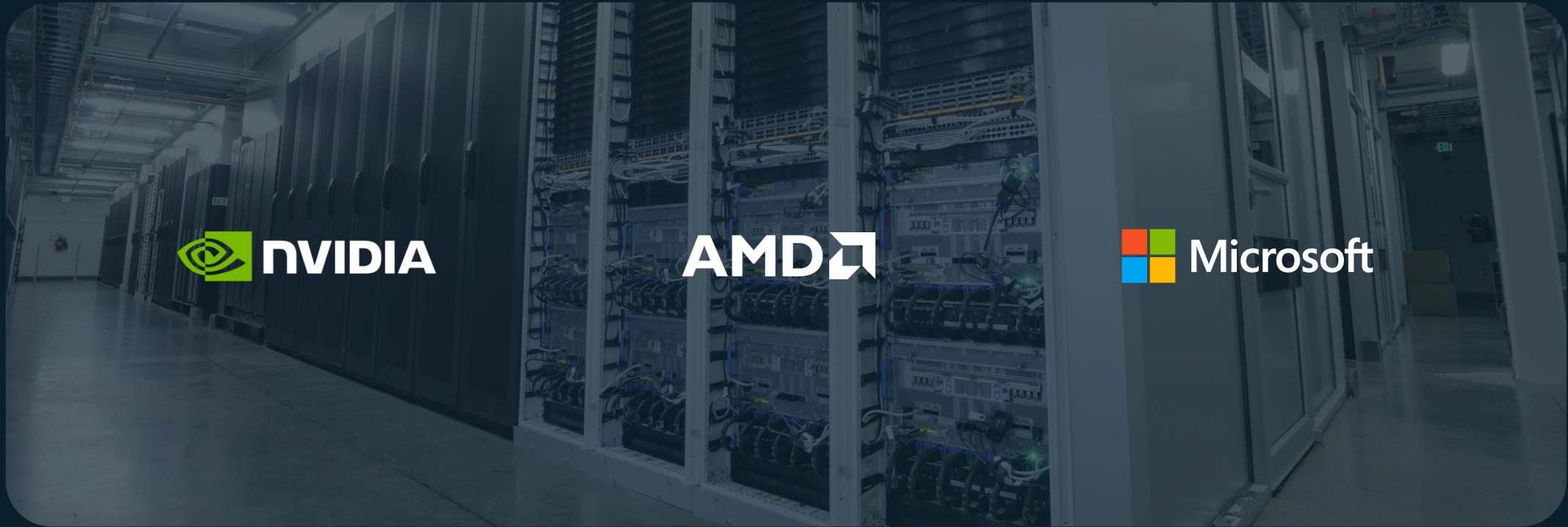
2x

$\frac{1}{6}$

6x

$\frac{1}{12}$

The most complete set of AI accelerators



General availability

# ND MI300X V5

Leading  
price/performance  
on GPT-4

Optimized for  
Microsoft Azure  
workloads

[aka.ms/AMDPartnership](http://aka.ms/AMDPartnership)

Updates

# Azure Maia

Integrated system  
of silicon, racks,  
and software

Designed for  
Azure OpenAI  
workloads

[aka.ms/AzureMaia](https://aka.ms/AzureMaia)

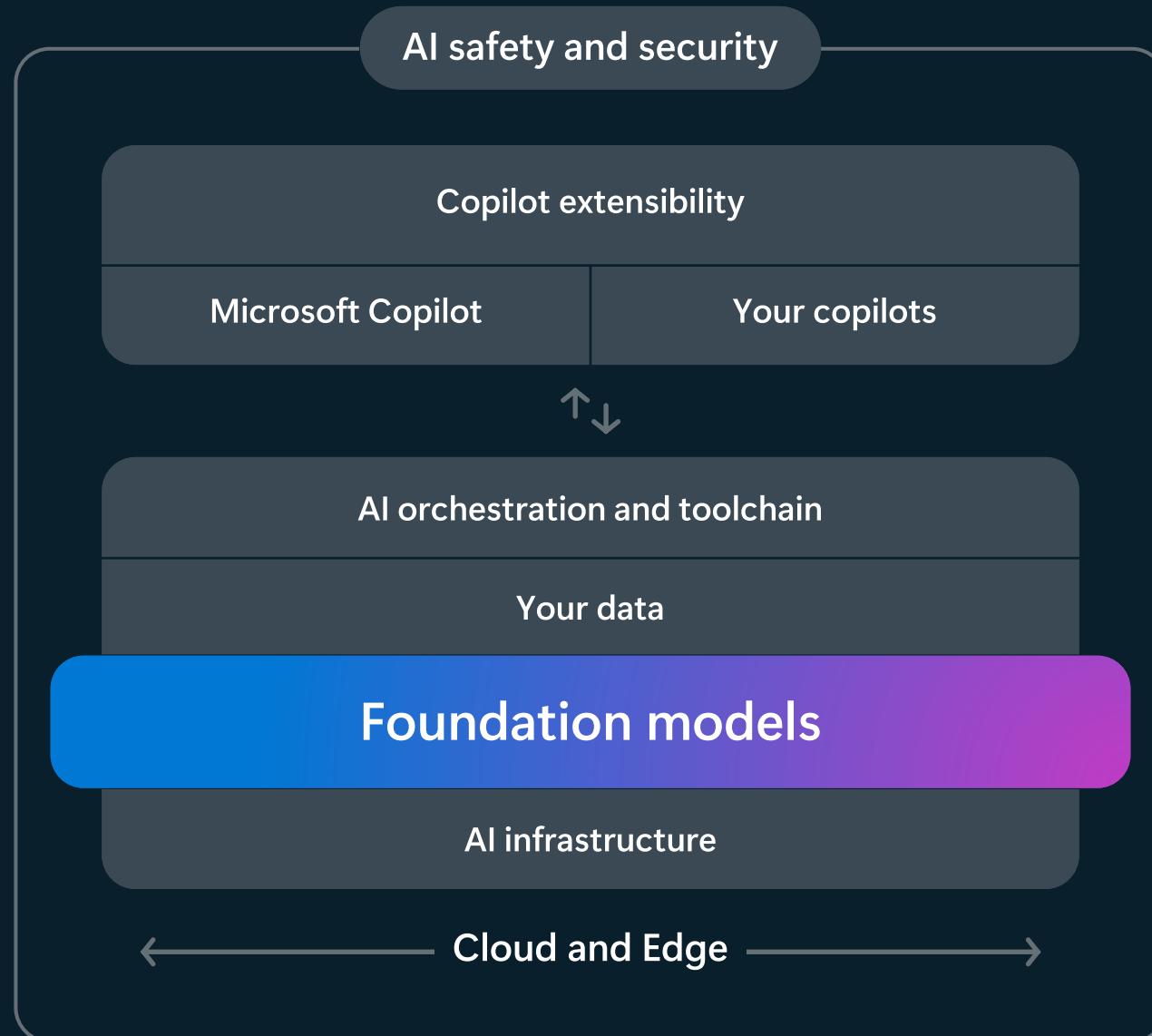
Public preview

# Azure Cobalt

Up to  
40% higher  
performance

Most power-efficient  
compute offering  
in Microsoft Azure

[aka.ms/AzureCobalt](http://aka.ms/AzureCobalt)



# Azure AI

50,000+ organizations



# Microsoft



# OpenAI

[aka.ms/OpenAI](http://aka.ms/OpenAI)

# GPT-4o

GPT-4o achieves state-of-the-art performance on visual perception benchmarks





# Azure OpenAI Service

GPT-4 Turbo  
with Vision

GPT-4

GPT-3.5  
Turbo

DALL·E 3

Whisper

Preview  
-to-speech  
models

Generally available

# GPT-4o

Multimodal  
input and output

Real-time  
response

Safe  
by design

[aka.ms/AOAIUpdates](https://aka.ms/AOAIUpdates)

Generally available

# GPT-4o available in Azure OpenAI Service

The most advanced multimodal API

Text, audio,  
and vision

2x faster,  
5x throughput

50%  
lower cost

[aka.ms/GPT-4o](https://aka.ms/GPT-4o)

# Best selection of models



# Azure AI model breadth

Offering a wide collection of frontier and open models

## Azure OpenAI Service

GPT-4o  
GPT-4-Turbo with Vision, GPT-4, GPT-3.5  
Embeddings  
DALL-E  
Whisper, Text to speech

## Phi models

Phi-3-mini  
Phi-3-small  
Phi-3-medium  
Phi-3-vision

## Meta

Llama-2-70b/70b-chat  
Llama-2-13b/13b-chat  
Llama-2-7b/7b-chat  
Llama-3  
CodeLlama

## Mistral AI

Mistral Large  
Mistral 7B  
Mixtral 8x7B –  
Mixture of Experts

## Cohere

Cohere R+  
Cohere R  
Embed v3-Multilingual  
Embed v3-English

## Hugging Face

Falcon/TII  
Stable Diffusion/Stability AI  
Dolly/Databricks  
CLIP/OpenAI

## Databricks

Databricks/dbrx-base  
Databricks/dbrx-instruct

## NVIDIA

Nemotron-3-8B-4k  
Nemotron-3-8B-Chat-SFT/RLHF/  
SteerLM  
Nemotron-3-8B-QA

## Snowflake

Snowflake/arctic-base  
Snowflake/arctic-instruct

# New Models-as-a-Service

New

Core42  
JAIS

New

Nixtla  
TimeGEN-1

Coming soon

Bria AI

Coming soon

Gretel

Coming soon

NTT DATA

Coming soon

Stability AI

Coming soon

AI21

Coming soon

Cohere  
Rerank

# Microsoft



# Open source

Expanded partnership



# Hugging Face

×



# Microsoft

[aka.ms/ExtendedHF](https://aka.ms/ExtendedHF)

# Microsoft

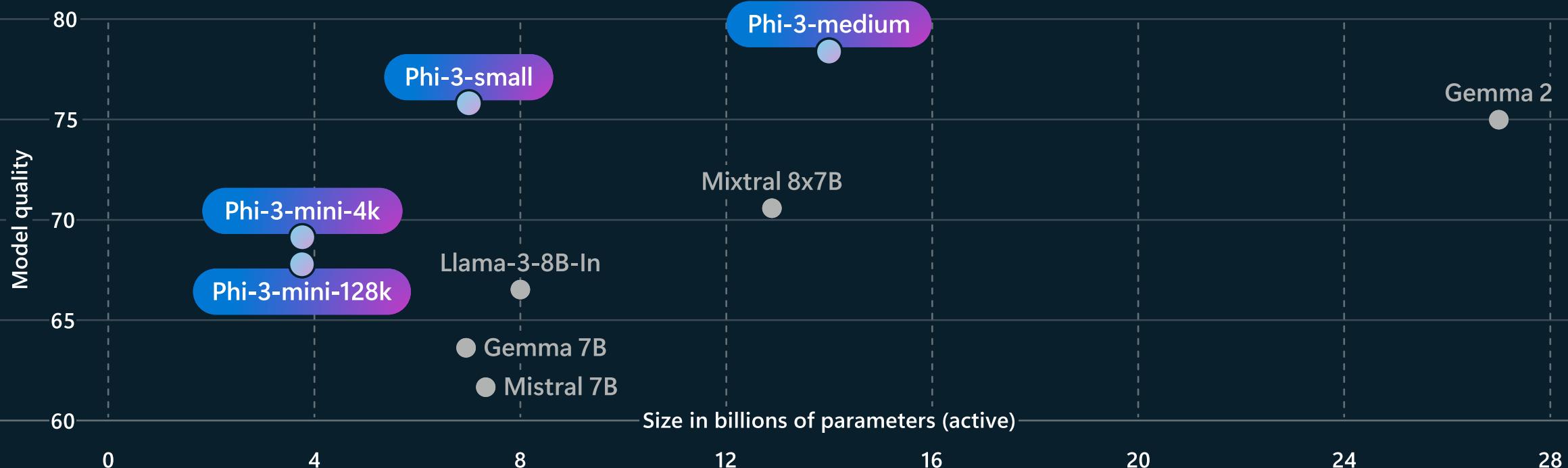


# SLMs

# Phi-3

## Quality vs. size in SLM

Model quality measured on MMLU benchmark



# Phi-3

## Phi-3-mini

3.8B parameters

Available on MaaS

New

## Phi-3-vision

4.2B parameters

New

## Phi-3-small

7B parameters

New

## Phi-3-medium

14B parameters

Available on MaaS

Phi-3: Redefining what's possible with SLMs ✨

[aka.ms/Phi3](https://aka.ms/Phi3)

New

# Phi-3-vision

4.2B parameters

3-mini  
parameters  
on MaaS

Multimodal model  
with language and  
vision capabilities

Reason over  
real-world images

Optimized for  
chart and diagram  
understanding

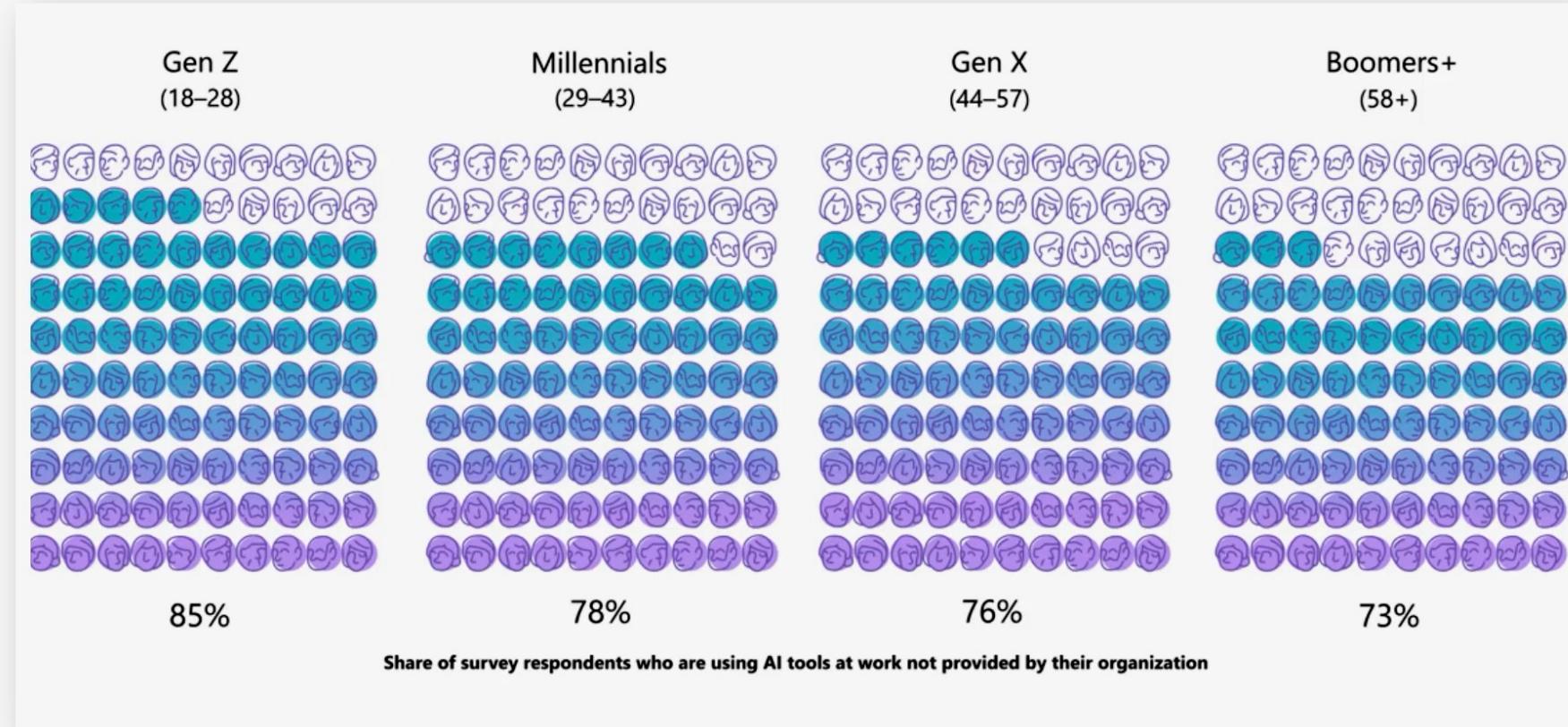
New

Phi-3-

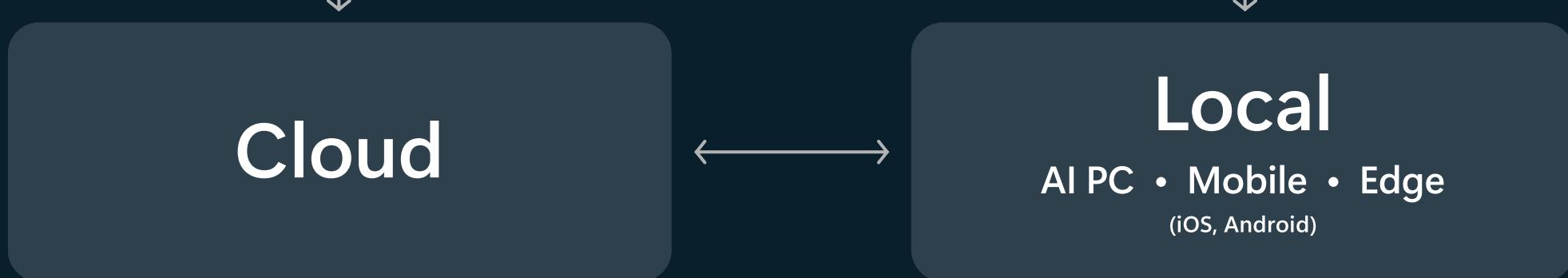
7B par

[aka.ms/Phi3](http://aka.ms/Phi3)

3-mini  
rameters  
e on MaaS



# Phi-3



Generally available



# Azure AI Studio

API and  
model choice

Complete AI  
toolchain

Responsible AI  
tools & practices

Enterprise-grade  
production at scale



Home

Get started

Model catalog

Model benchmarks

AI Services

# Azure AI Studio

## Innovate with AI

Develop and deploy custom copilots at scale, in a safe, secure, and responsible way

**Explore cutting-edge models**  
Explore and experiment with hundreds of large AI models to find the right one for your scenario.  
[Browse the model catalog](#)

**Start using Azure OpenAI**  
Get access to Azure OpenAI to start using its wide range of prebuilt and curated models.  
[Get started with Azure OpenAI](#)

**Work in code with the SDK**  
Get going with our SDKs, install the CLI, and clone samples to start building in code.  
[View available SDKs and documentation](#)

### Jump to top tasks and tools

#### Get up and running in AI Studio in just five minutes

In Azure AI Studio, resources facilitate access to services and act as containers for billing, security, and monitoring. Get your resources set up and you'll be AI-ready.

[See how to get set up](#)

#### Assistants API available on Azure OpenAI service

Develop power agent-like experiences with built-in state and thread management, knowledge retrieval, and tools including code interpreter and function calling.

[Sign in to build your AI Assistant](#)

#### Experiment with prompts in the playground

See how different foundation models respond to user input by trying out different prompts, adjusting parameters, and even grounding on your own data.

[Sign in to try some prompts in the playground](#)

#### Deploy large language models (LLMs)

Deploy an LLM or prompt flow and make its API available for use to an application, website, or other production environment.

[Sign in to view deployments](#)

### Explore cutting-edge models

**Phi-3-mini-4k-instruct**

Microsoft's Phi-3-mini SLMs offer groundbreaking performance at a small size.

**Meta-Llama-3-70B-Instruct**

Generation over generation, Meta Llama 3 Instruct models

**Cohere-command-r-plus**

Cohere's suite of Enterprise AI models are available now including Command R, Command R+, and Embed

**Mistral-large**

Develop power agent-like experiences with built-in state and thread management, knowledge retrieval, and tools

Announcing

# Azure AI Content Safety

Coming soon

Custom  
categories

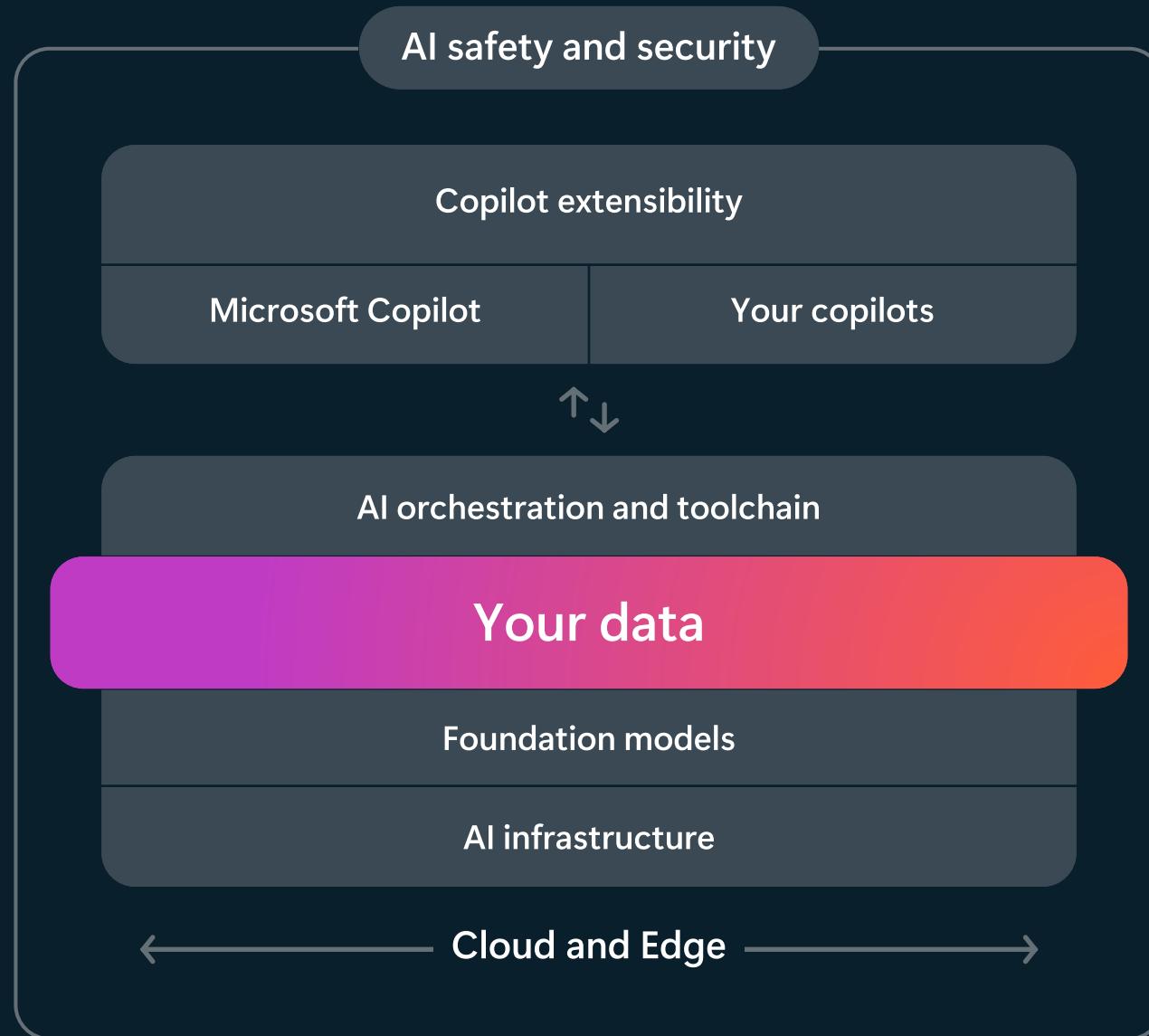
Preview

Prompt  
shields

Preview

Groundedness  
detection

[aka.ms/ContentSafetyUpdates](http://aka.ms/ContentSafetyUpdates)



Data is the **fuel** that powers AI

# Microsoft Intelligent Data Platform

Databases • Analytics • AI • Governance



Azure  
SQL DB



Azure  
Cosmos DB



Azure for  
PostgreSQL



MySQL



Microsoft  
Fabric



Azure  
Databricks



Azure AI



Microsoft  
Purview



# Copilot capabilities in Azure Databases

AI-enhanced management and performance

Public preview

Self-help for  
managing and operating  
Azure SQL database

Public preview

Convert natural language  
to Azure SQL Database  
T-SQL queries

Public preview

Chat with Azure Database for  
MySQL technical documentation  
in natural language



# Microsoft Fabric

Data platform for the era of AI

Complete  
analytics platform

Lake-centric  
and open

Empower every  
business user

AI-powered



# Microsoft Fabric

Data platform for the era of AI



Public preview



# Real-Time Intelligence in Microsoft Fabric

Accelerated  
decisions

AI-powered

Intuitive

Unified  
data estate

[aka.ms/RealTimeIntelligence](https://aka.ms/RealTimeIntelligence)



# Real-Time Intelligence in Microsoft Fabric



OneLake



Power BI



Synapse  
Data Warehouse



Synapse  
Real Time Analytics

...



## Data Activator

No-code user experiences



Models



Rules



Triggers

Real-time stream processing



Teams



Outlook



Power  
Automate



Custom

...



# Real-Time Intelligence in Microsoft Fabric

## Logistics

Delivery tracking and routing

Warehouse management

Supply & demand operations



## Finance & Insurance

Finance Automation

Fraud Detection



Operational Efficiency

## Manufacturing

Improving Quality

Predictive Maintenance

Inventory Prediction



## Retail

Inventory tracking

Promotions and buying experiences

Supply chain management



## Automotive

Connected fleet applications

Autonomous Driving

Manufacturing + R&D



## Energy & Utilities

Station monitoring, energy leakage detection

Equipment Maintenance & Monitoring



Failure Monitoring

Public preview



# Microsoft Fabric Workload Development Kit

AVEVA



COGNITE



data  
iku



esri



Informatica



LSEG



neo4j



Profisee  
Now you can make it happen™

quantexa

Sas

striim

teradata.

[aka.ms/FabDevKit](https://aka.ms/FabDevKit)

## Workload hub

[My workloads](#) [More workloads](#)

### Find the right workload for your project needs

Drive business outcomes and get more done with partner workloads.

### More workloads

Find and add new workloads for your organization.

 **Financial Markets Data Provider**  
LSEG

Enable the growth and scalability of your customers and their communities.

Data Science & ML Data Store

 **Epic Data Insights Wizard**  
Epic

Unlock the hidden potential of your data with intuitive AI-powered design.

Data Science & ML Data Integration

 **Data System Platform**  
Aveva

Securely visualize enterprise-wide operations using an asset model to apply context to real-time processes.

Data Integration

 **ArcGIS & Geospatial Analytics**  
Esri

Contextual tools and services for mapping and spatial analysis to explore and share data.

Data Science & ML Data Integration

 **Data Replicator**  
Confluent

Connect and process all of your data in.

Data Science & ML Compatible with Lakehouse

 **SAS Decisioning**  
SAS

Manage, model and deploy – all in one solution.

Data Science & ML Compatible with Lakehouse

 **Data Management Cloud**  
Informatica

Revolutionizes data handling with streamlined organization, storage, and retrieval capabilities.

Data Science & ML Compatible with Lakehouse

 **Master Data Management**  
Profisee

Improve the consistency and quality of key data assets, such as product and customer data.

Data Science & ML Compatible with Lakehouse

 **Machine Learning & AI**  
Dataiku

All-in-one data science and machine learning platform.

Data Science & ML Compatible with Lakehouse

 **Workload Qlik**  
Qlik

Leading enterprise database replication.

Data Science & ML Compatible with Lakehouse

 **Real-time Data Integration**  
Striim

Accelerate data integration and streamline connectivity to any source.

Data Science & ML Compatible with Lakehouse

 **Cognitive services (Sample)**  
Microsoft

Advanced services for analyzing complex data and natural language processing.

Data Science & ML Compatible with Lakehouse



# Azure AI Search

## Revolutionary retrieval

State-of-the-art  
search  
technology

Feature-rich  
vector  
database

Seamless data  
and platform  
integrations

Up to 12x  
more scale and  
performance

Home &gt;

## contoso-search



Search service

 Search[+ Add index](#) [Import data](#) [Import and vectorize data](#) [Search explorer](#) [Refresh](#) [Delete](#) [Move](#)

Would you like to get rewarded for sharing your experience with Azure AI Search? [Write a review & get rewarded](#)

### Essentials

Resource group ( <a href="#">move</a> )	:	<a href="#">contoso-outdoors-rg</a>	Url	: <a href="https://contoso">https://contoso</a>
Location ( <a href="#">move</a> )	:	<a href="#">East US</a>	Pricing tier	: Standard
Subscription ( <a href="#">move</a> )	:	<a href="#">ca-sejuare-demo-test</a>	Replicas	: 2 (99.9% read S
Subscription ID	:	91d27443-f037-45d9-bb0c-428256992df6	Partitions	: 1
Status	:	Running	Search units	: 2
Tags ( <a href="#">edit</a> )	:	ProjectType : aoai-your-data-service		

[Get started](#) [Properties](#) [Usage](#) [Monitoring](#)

### Build a full-text search experience with AI and semantic ranker

Get started building a full-text search experience and learn how to integrate with your custom applications and other Azure services.



#### Connect your data

Start here to import your data. Learn how to quickly connect to your data to build your first search index. [Learn more](#)



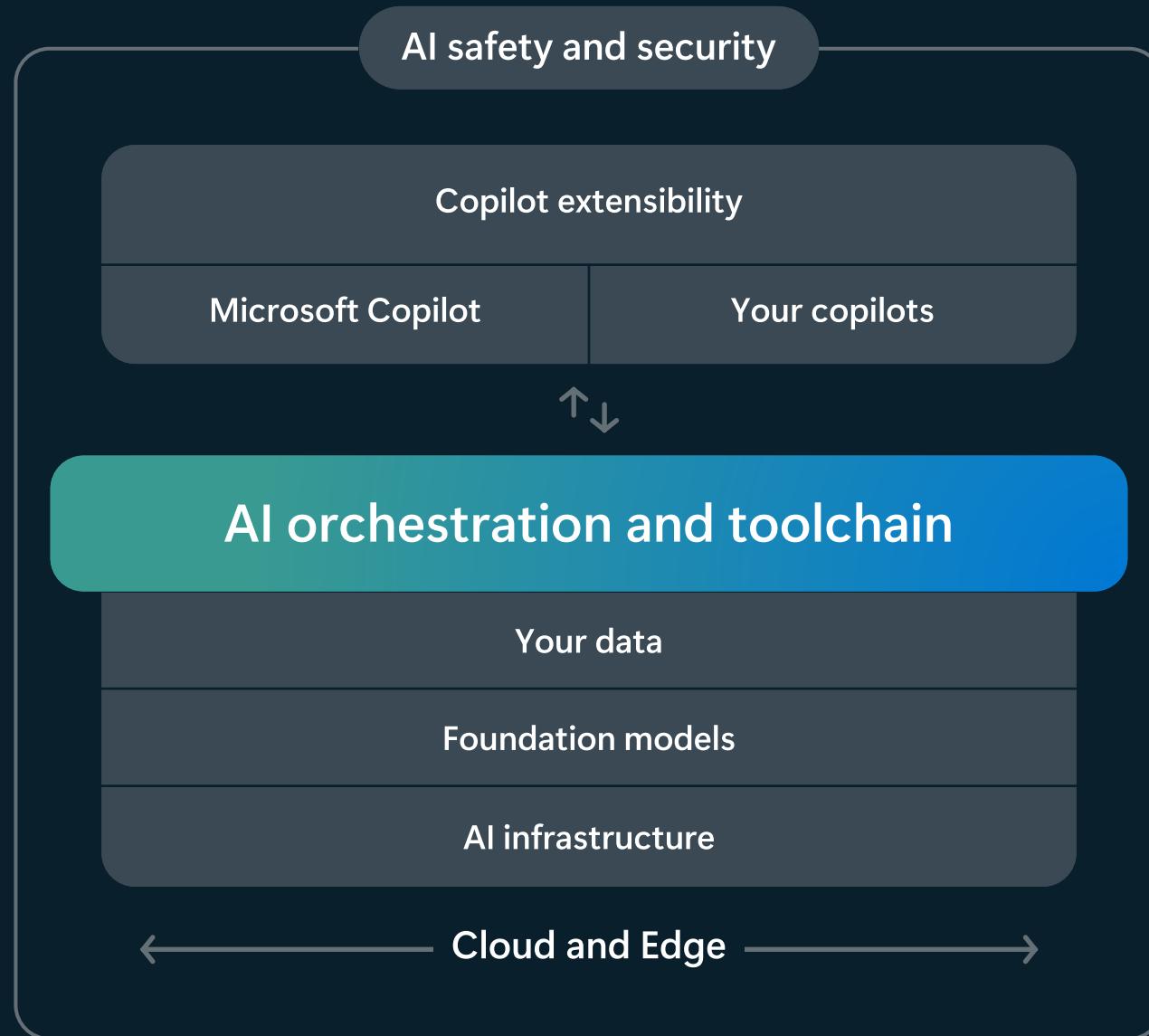
#### Explore your data

Connect to apps, optimize search results. Leverage features like faceting, filtering, scoring profiles and more. [Learn more](#)



#### Monitor and scale

Tools that allow you to monitor and scale for optimal performance. Manage replicas and partitions as needed. [Learn more](#)





# GitHub Copilot

Now GitHub Copilot provides extensions for customization, integrating services such as Azure, Docker, Sentry, and more.



# GitHub Copilot

“This is the single most mind-blowing application  
of machine learning I’ve ever seen.”

Mike Krieger, Co-founder, Instagram

Now GitHub Copilot provides extensions for customization, integrating services such as Azure, Docker, Sentry, and more.

```
JS MicrosoftGraph.js U •
routes > JS MicrosoftGraph.js > ...
5  );
6
7 // Handle login and logout buttons
8 function login() {
9 | authContext.login();
10 }
11 function logout() {
12 | authContext.logout();
13 }
14
15 // Get the access token
16 function getAccessToken() {
17 | return authContext.getCachedToken('c24f035c-1ff6-4dfa-b76d-c75a29ad2c3c');
18 }
19
20 // Set up the Microsoft Graph client
21 var graphClient = MicrosoftGraph.Client.init({
22 | authProvider: (done) => {
23 | done(null, getAccessToken());
24 }
25 });
26
27 // Use the Microsoft Graph client to get the user's Outlook Calendar
28
29
30
```

CHAT



Hi @adelevance, how can I help you?

+ ⏴ ...

TS validationHelper.ts X

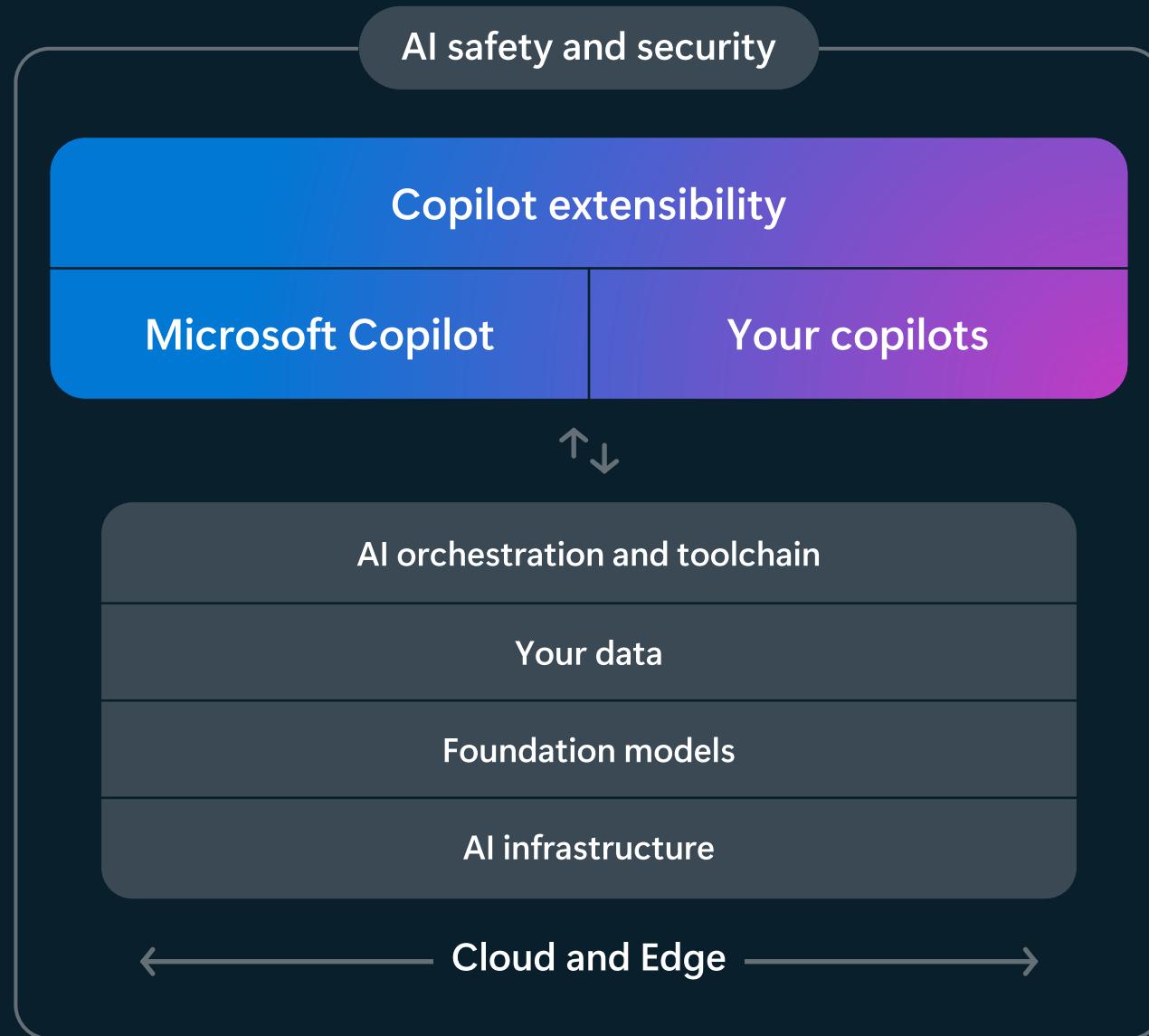
```
1  /**
2   * ValidationHelper
3   */
4  export class ValidationHelper {
5
6    public static validate = (address: string): boolean => {
7      const e_regex = /^[^\\s@]+@[^\\s@]+\.[^\\s@]+$/;
8      return e_regex.test(address);
9    }
10
11 }
```



- ❖ /fix the problems in my code
- ❖ /tests add unit tests for my code
- ❖ /explain how the selected code works

W

∅ ➤ ▾



Generally available

# Microsoft Copilot Studio

Extend Microsoft Copilot and create custom copilots



Microsoft Copilot



Your websites



Your apps

Updates

# Microsoft Copilot Studio

## Agents

Orchestrate and  
automate processes

## Knowledge

Manage public and  
enterprise data sources

## Overrides

Control the logic  
for key topics



Home



Create



Browse



OneLake

data hub



Monitoring

hub



Workspaces



Contoso

Outdoors...

## New

Current workspace: Contoso Outdoors Sales

Items will be saved to this workspace.

Show less ^



ML model



Experiment



Notebook

Environment  
(Preview)

AI Skill (Preview)



Import notebook



Use a sample

## Recommended

&lt; &gt;

## My workspace

You frequently open this



Open

## Notebook 6

You frequently open this



Open

## Contoso Sales Excellence

You frequently open this



Open

## Copilot Demo

You frequently open this



Open

## Quick access

Recent

Favorites

Filter by keyword

Filter ▾

	Name	Type	Opened	Owner	Endorsement	Sensitivity	Location
	Contoso Outdoors Sales	Workspace	now	—	—	—	Workspaces
	Contoso Sales Excellence	Workspace	now	—	—	—	Workspaces



Data

Science

# Microsoft Copilot

Personal



Team



# Microsoft Copilot

Personal



Team



Agents



**Security-first mindset**

# Secure Future Initiative

Security above all else



## Secure by design

Protect tenants  
and isolate  
production systems



## Secure by default

Protect  
identities  
and secrets

Protect  
networks



## Secure operations

Protect  
engineering  
systems

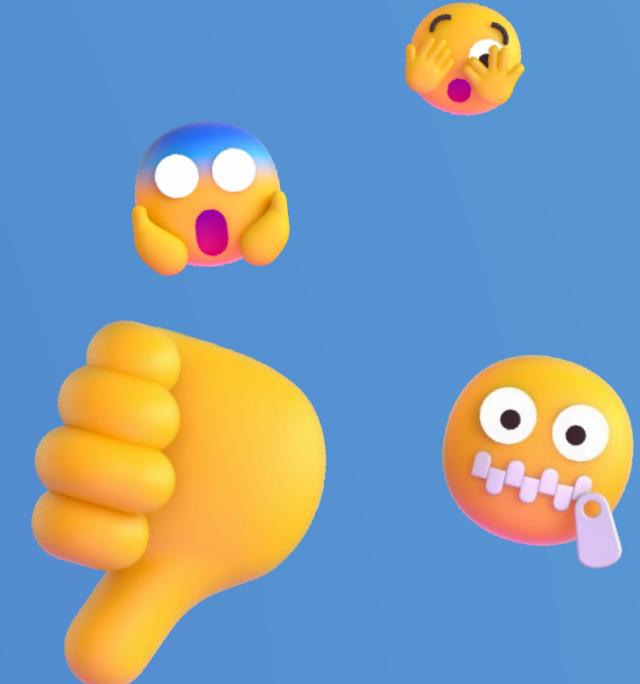
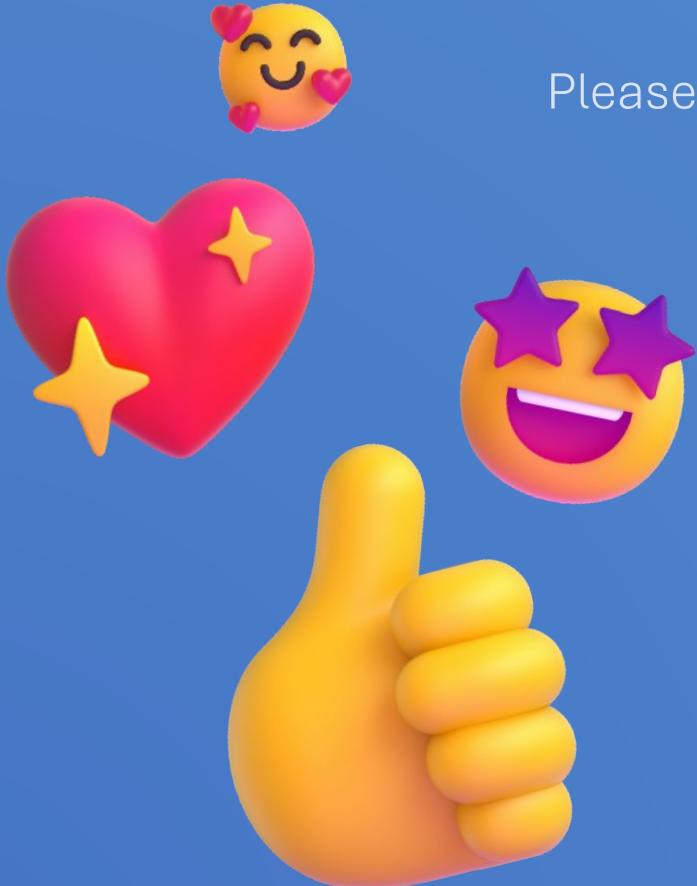
Monitor  
and detect  
threats

Accelerate  
response and  
remediation

We have an exciting future ahead

# We care about your feedback

Please take a moment to tell us your opinion using the run.events app.



# Q&A





Grazie!

30 . 5 . 2024  
Milan



**Andrea Benedetti**  
Sr Cloud Architect - Microsoft



/in/abenedetti



@anBenedetti



https://github.com/anbened