Microsoft

Getting start with Azure OpenAI

Sergio Zenatti Filho
Sr Cloud Solution Architect

Microsoft

Sergio has over 20 years of experience designing and delivering Data and Analytics Solutions. He has extensive experience in the Microsoft Data and Analytics Platform in the cloud and also on-premises. Sergio is passionate about learning new technology and helping customers to define the best solution for their business.
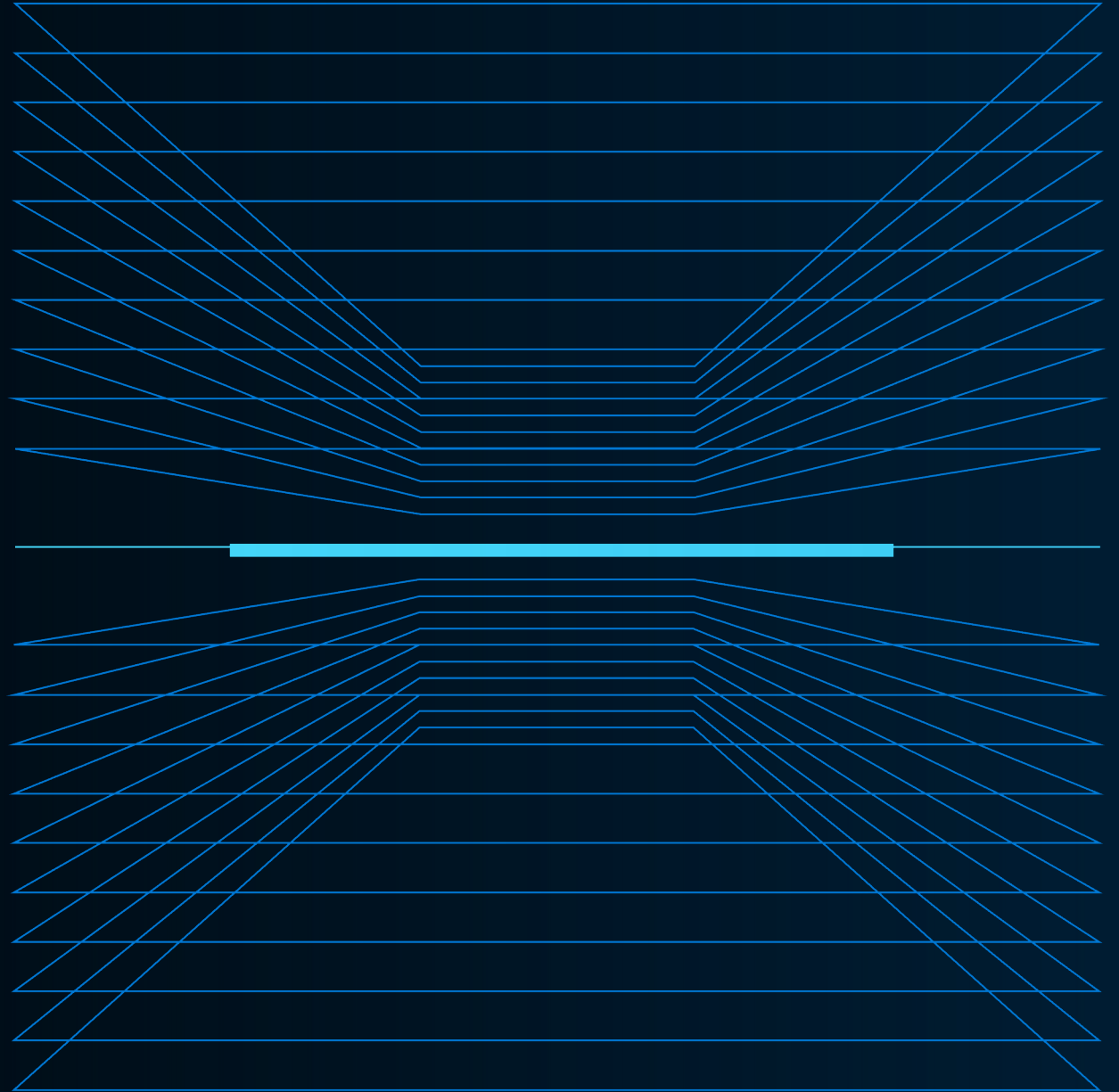
Sergio Zenatti Filho

Senior Cloud Solution Architect
at Microsoft

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in /sergiozenatti

Microsoft

Agenda

- Azure OpenAI Overview

- Why Azure OpenAI

- Concepts

- Demos

- Use Cases

- Next Steps

- Q&A

Azure AI

Applications

Microsoft 365   Microsoft Dynamics 365   **Partner Solutions**

Business Users

Application Platform
AI Builder

Power BI   Power Apps   Power Automate   Power Virtual Agents

Scenario-Based Services
Applied AI Services

Bot Service   Cognitive Search   Form Recognizer   Video Indexer   Metrics Advisor   Immersive Reader

Customizable AI Models
Cognitive Services

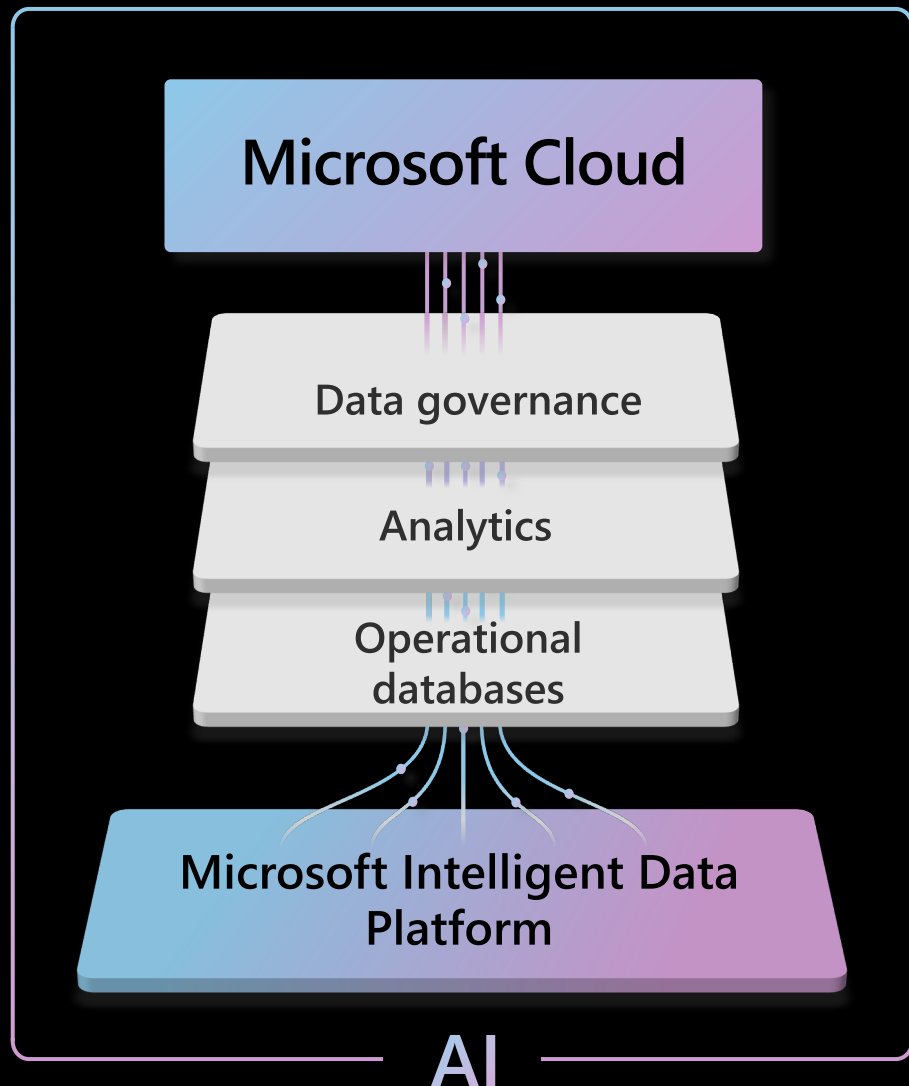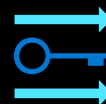Vision   Speech   Language   Decision   OpenAI Service

Developers & Data Scientists

ML Platform

Azure Machine Learning

Microsoft Cloud

Data governance

Analytics

Operational databases

Microsoft Intelligent Data Platform

AI

Deployed within your Azure subscription, secured by you, accessed only by you, and tied to your datasets and applications

Enterprise-grade security with role-based access control (RBAC) and authentication

Secure networking through private endpoints and VNETs

Generative AI
Content creation by API

Prompt

Write a tagline for an ice cream shop.

Response

We serve up smiles with every scoop!

Prompt

I'm having trouble getting my Xbox to turn on.

Response

There are a few things you can try to troubleshoot this issue … …

Prompt

Thanks! That worked. What games do you recommend for my 14-year-old?

Response

Here are a few games that you might consider: …

Prompt

Table customers, columns = [CustomerId, FirstName, LastName, Company, Address, City, State, Country, PostalCode]

Create a SQL query for all customers in Texas named Jane query =

Response

```
SELECT *
FROM customers
WHERE State = 'TX' AND
FirstName = 'Jane'
```

Prompt

A ball of fire with vibrant colors to show the speed of innovation at our media and entertainment company

Response

Azure OpenAI | Concepts

Prompt and Completion

A short piece of text used to initiate an AI language model to generate a longer piece of text.

In computer science, the time complexity is the computational complexity that describes the amount of computer time it takes to run an algorithm. Time complexity is commonly estimated by counting the number of elementary operations performed by the algorithm, supposing that each elementary operation takes a fixed amount of time to perform. Thus, the amount of time taken and the number of elementary operations performed by the algorithm are taken to be related by a constant factor [...]

Summarize the previous text in a 2 sentences:

→

Time complexity is a measure of the amount of time it takes for an algorithm to run, and is usually estimated by counting the number of elementary operations performed. It is usually expressed as a function of the size of the input, and the asymptotic behavior of the complexity is often focused on.

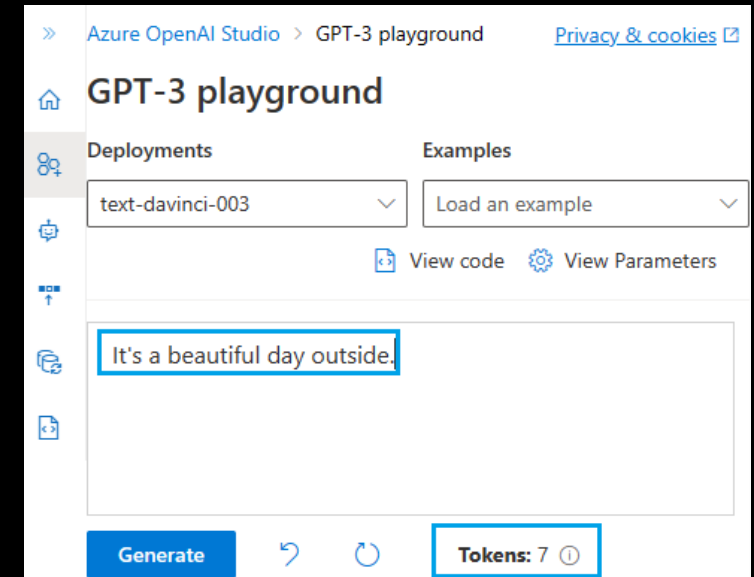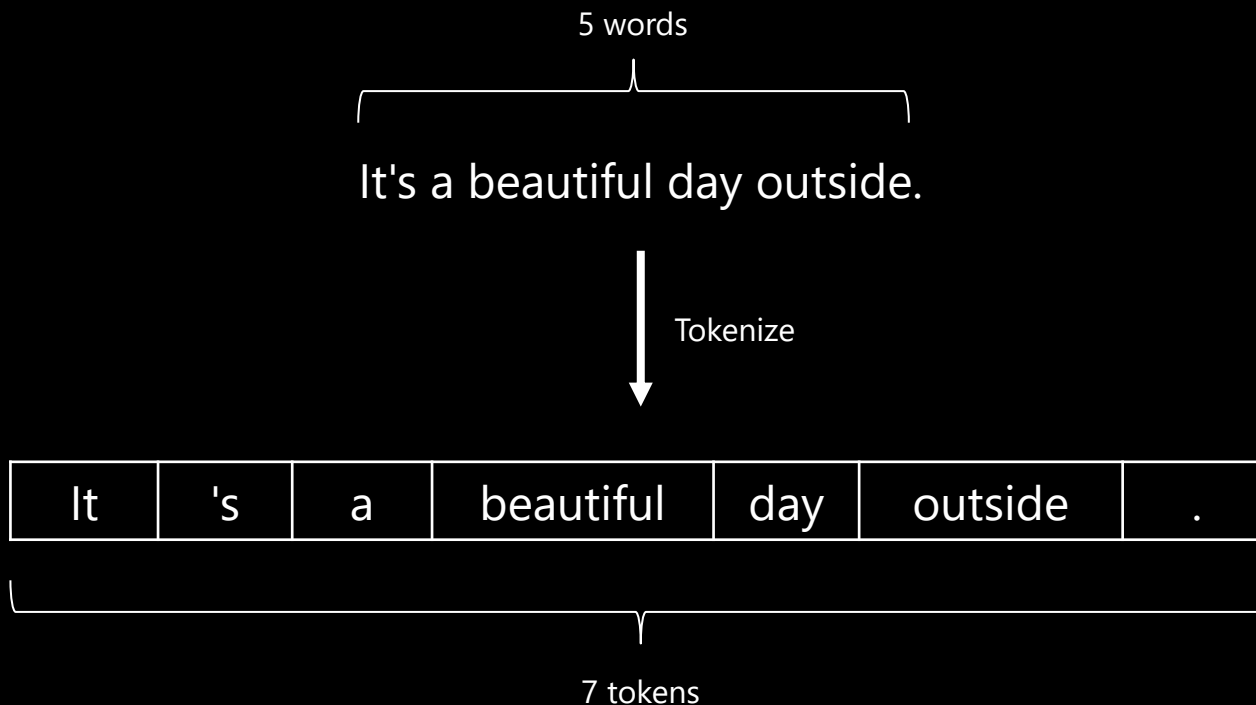| Best Practices |
| :---: |
| Be Specific |
| Be Descriptive |
| Double Down |
| Order Matters |
| Alternative Path |

Prompt

Completion

Azure OpenAI | Concepts

Tokens

Smaller chunks of text created by splitting input text.

5 words

It's a beautiful day outside.

Tokenize

It	's	a	beautiful	day	outside	.

7 tokens

Azure OpenAI Studio > GPT-3 playground   Privacy & cookies

GPT-3 playground

Deployments   Examples

text-davinci-003 ⌄   Load an example ⌄

‹› View code   ⚙ View Parameters

It's a beautiful day outside.

Generate   ↺ ↻   Tokens: 7 ⓘ

Azure OpenAI | Concepts

Embeddings

Representation of tokens as numerical vectors for machine learning algorithms to process.

It's a beautiful day outside.   5 words

↓ Tokenize

| b'It' | b"'s" | b' a' | b' beautiful' | b' day' | b' outside' | b'.' | 7 tokens

↓ Embeddings

[0.02132229320704937, -0.01934889890253544, ..., , 0.009578186087310314, -0.0001060399081325585]

1536 element vector   text-embedding-ada-002   1

Azure OpenAI | Concepts

Cosine Similarity

Metric used to measure similarity between two documents / text contents.

It's a beautiful day outside. ⟶ [.......]

Embeddings

Cosine Similarity(v1, v2) = 0.92

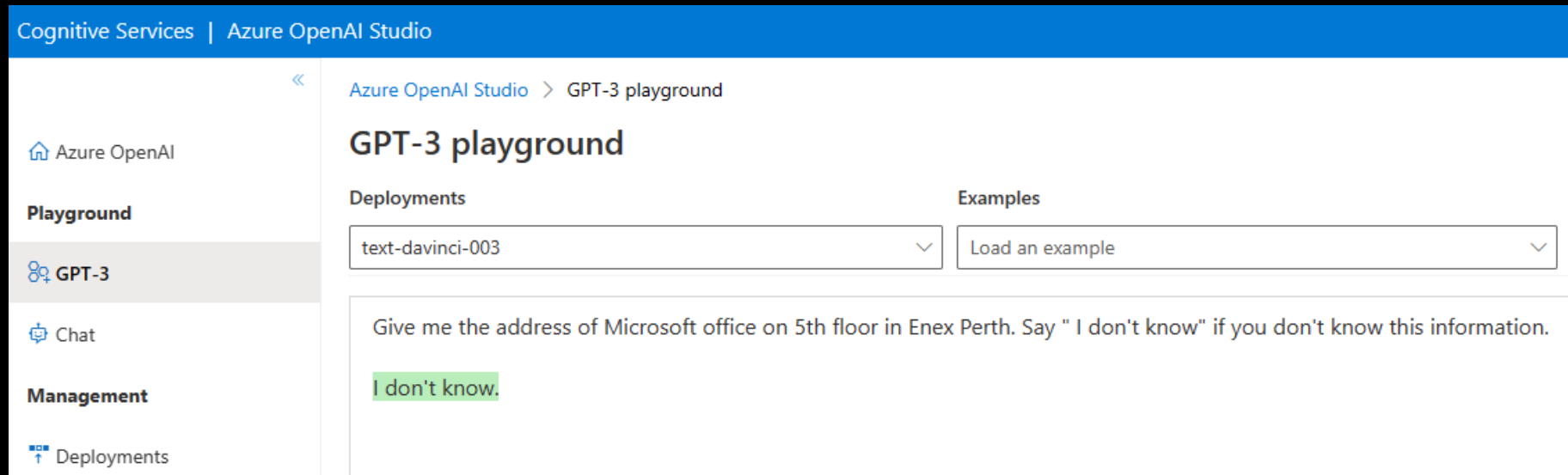The sun is shining brightly, and it is a perfect day for taking a stroll in the park. ⟶ [.......]

Azure OpenAI | Concepts

Hallucinations

A confident response that does not seem to be justified by the model's training data

- Wikipedia

Azure OpenAI | Concepts

OpenAI Models *As of March 2023*

Different pre-trained models, grouped by family and capability.

More accurate, difficult problems	Understand and generate natural language	Generate code	Create embeddings
GPT-4 (Preview)	**GPT-3**	**Codex**	**Embeddings**
gpt-4 gpt-4-32k	text-davinci-003 text-curie-001 text-babbage-001 text-ada-001 gpt-35-turbo (Preview)	code-davinci-002 code-cushman-001	text-similarity-ada-001 text-similarity-babbage-001 text-similarity-curie-001 text-similarity-davinci-001 ...
			text-search-ada-doc-001 text-search-ada-query-001 text-search-babbage-doc-001 ...
			code-search-ada-code-001 code-search-ada-text-001 ...

Azure OpenAI | Concepts

Model Parameters

User configurable settings that influence the model output.

Temperature, Top probabilities

Regulate the level of determinism in the model's response generation process.

Max response

No. of tokens to return as model response.

Frequency penalty

Control the probability of generating identical text in the model's response.

Presence penalty

Control token repetition to promote new topic introduction in responses.

Best of

Produce several responses and select the one with the highest overall probability of its tokens for display.

Azure OpenAI | Concepts

Zero-shot, Few Shot Learning

methods of using a model without any fine-tuning or additional training.

Zero-shot

Result

Few-shot
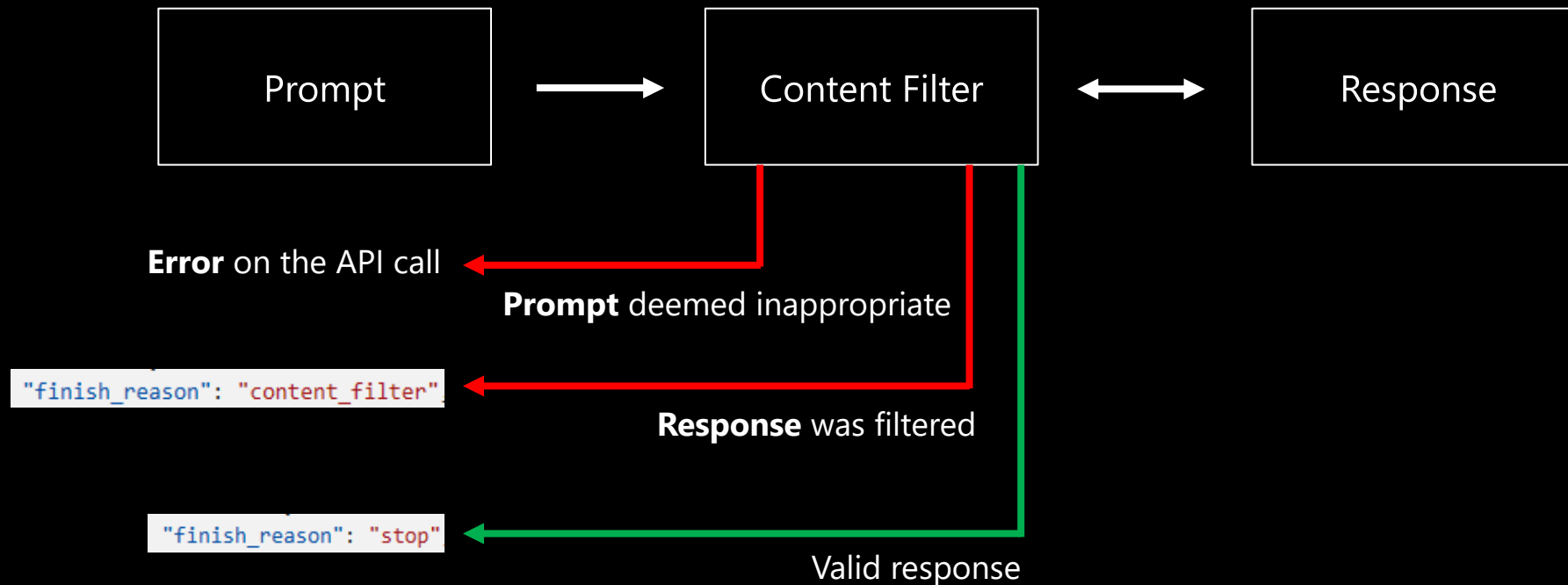
Azure OpenAI | Concepts

Content filtering

Task of detecting misuse by analyzing prompt and response through classification models.

```
Prompt  →  Content Filter  ↔  Response
```

Error on the API call ← **Prompt** deemed inappropriate

`"finish_reason": "content_filter"` ← **Response** was filtered

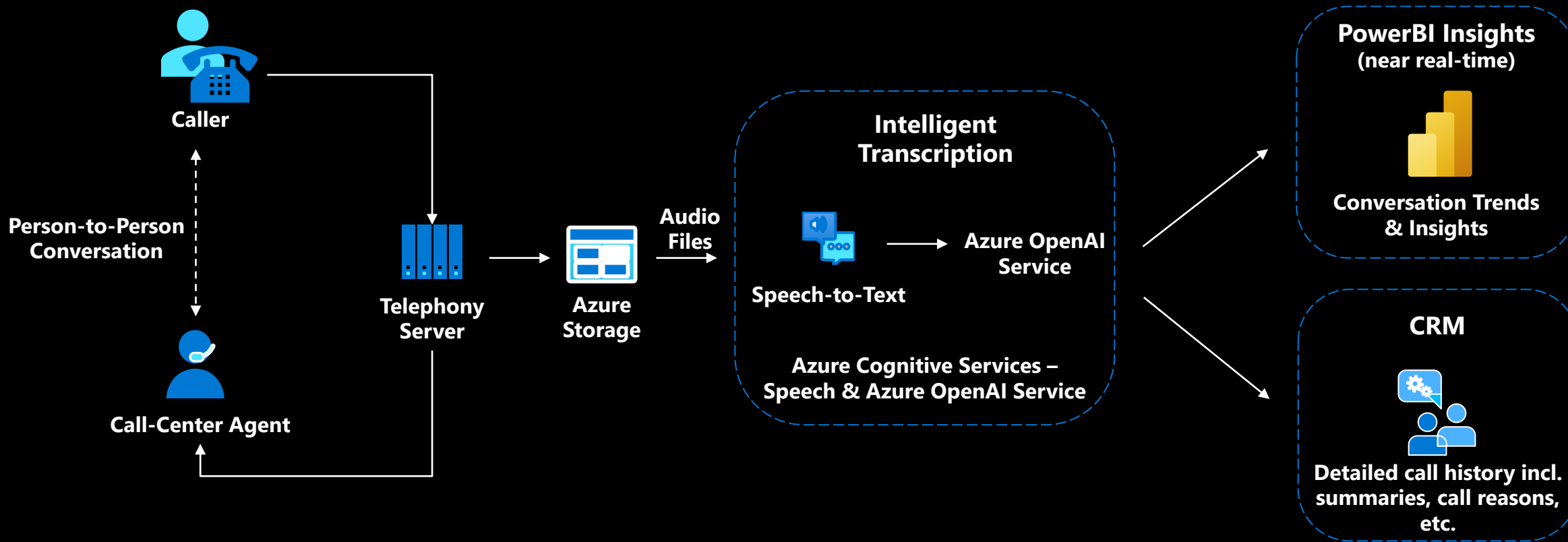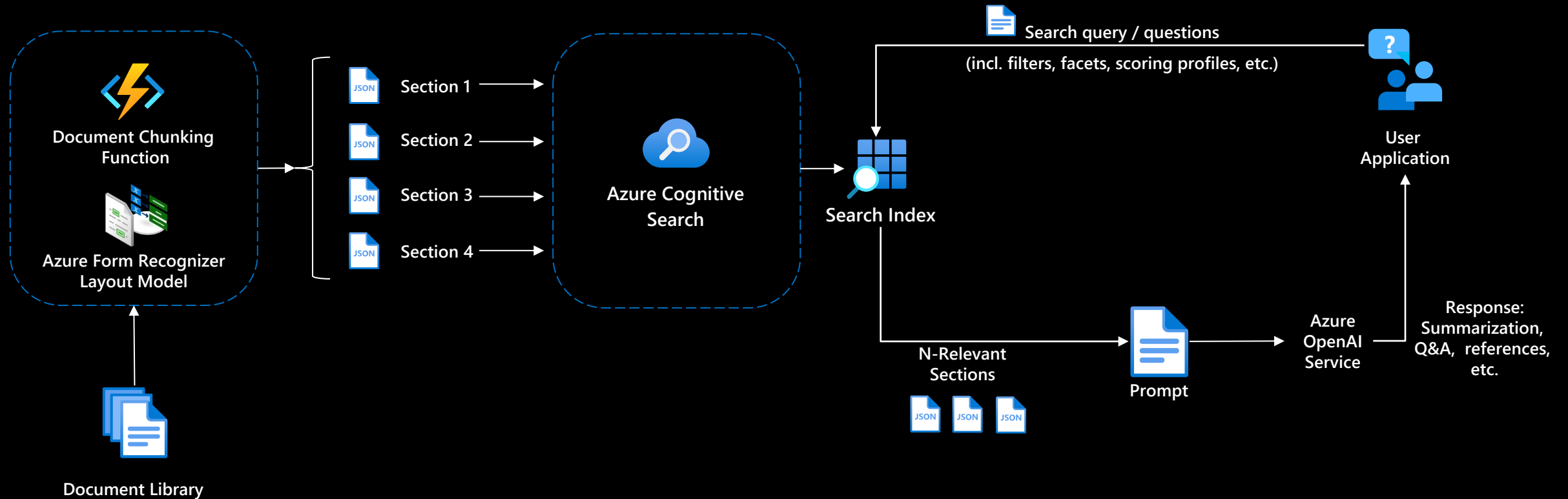`"finish_reason": "stop"` ← Valid response

Demo – Azure OpenAI

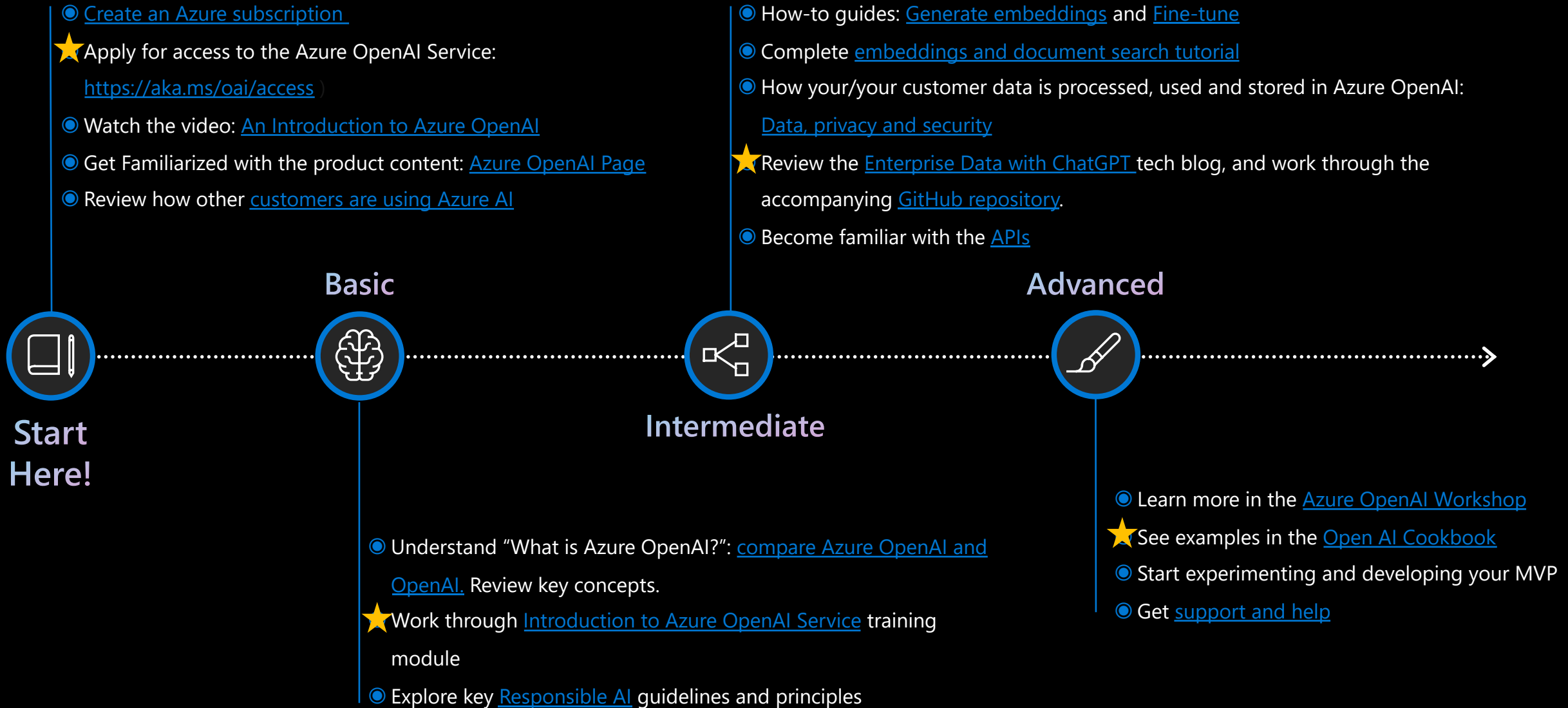# Contact Center Analytics using Speech API & Azure OpenAI Service

Extract rich insights from call transcripts

AI-Powered Q&A over Enterprise Data Sources

Azure OpenAI Service Learning Guide

◎ Create an Azure subscription

⭐ Apply for access to the Azure OpenAI Service:

    https://aka.ms/oai/access)

◎ Watch the video: An Introduction to Azure OpenAI

◎ Get Familiarized with the product content: Azure OpenAI Page

◎ Review how other customers are using Azure AI

◎ How-to guides: Generate embeddings and Fine-tune

◎ Complete embeddings and document search tutorial

◎ How your/your customer data is processed, used and stored in Azure OpenAI:

    Data, privacy and security

⭐ Review the Enterprise Data with ChatGPT tech blog, and work through the

    accompanying GitHub repository.

◎ Become familiar with the APIs

Basic

Advanced

Start Here!

Intermediate

◎ Understand "What is Azure OpenAI?": compare Azure OpenAI and

    OpenAI. Review key concepts.

⭐ Work through Introduction to Azure OpenAI Service training

    module

◎ Explore key Responsible AI guidelines and principles

◎ Learn more in the Azure OpenAI Workshop

⭐ See examples in the Open AI Cookbook

◎ Start experimenting and developing your MVP

◎ Get support and help

In Seattle: May 23–25, 2023 | Online: May 23–24, 2023 PDT

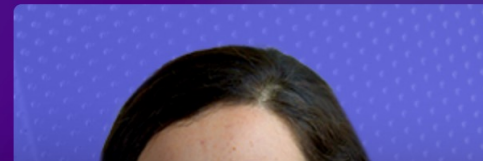# Join us in Seattle for Microsoft Build!

President & Co-Founder Greg Brockman from OpenAI will be LIVE at Microsoft Build! Be there to explore how Microsoft and OpenAI's full-stack AI platform empowers developers and get ready to make AI work for you.

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Q&A

Thank you!

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