

Sessions start at: 5.00PM and 6.15PM

Online Meeting Rules

- If not muted, mute yourself.
- Ask your questions in the chat window.
- Use mic if you are explicitly asked.
- If you want to show something, we will make you be a presenter
- If you like you can activate your camera. We love to see you all ☺
- Please do not spam the chat window.
- Do not post inappropriate content.
- Have fun. ☺



PRÄSENZ- UND ONLINESCHULUNGEN

FÜR ENTWICKLER, SOFTWAREARCHITEKTEN, ADMINS UND PROJEKTMANAGER



Offene Schulungen



Inhouse- / Firmenschulungen



Individualschulungen



10.761

EKOMI BEWERTUNGEN



114.106

TEILNEHMENDE

1.951

SEMINARTHemen

29.053

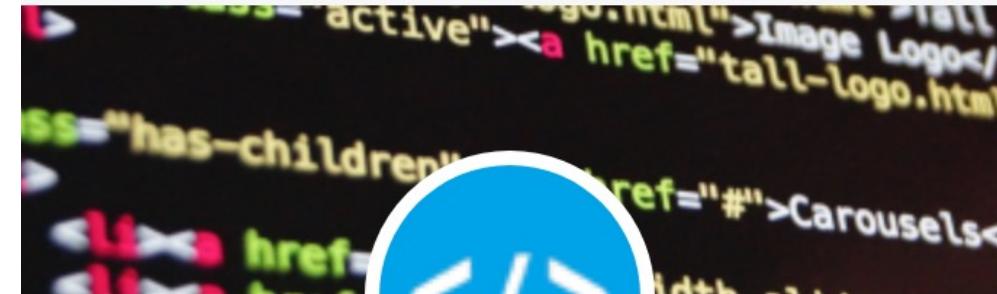
DURCHGEFÜHRTE SEMINARE



Azure Meetup



FRANKFURT



DEVELOPERS.DE



daenet - an ACP Digital company





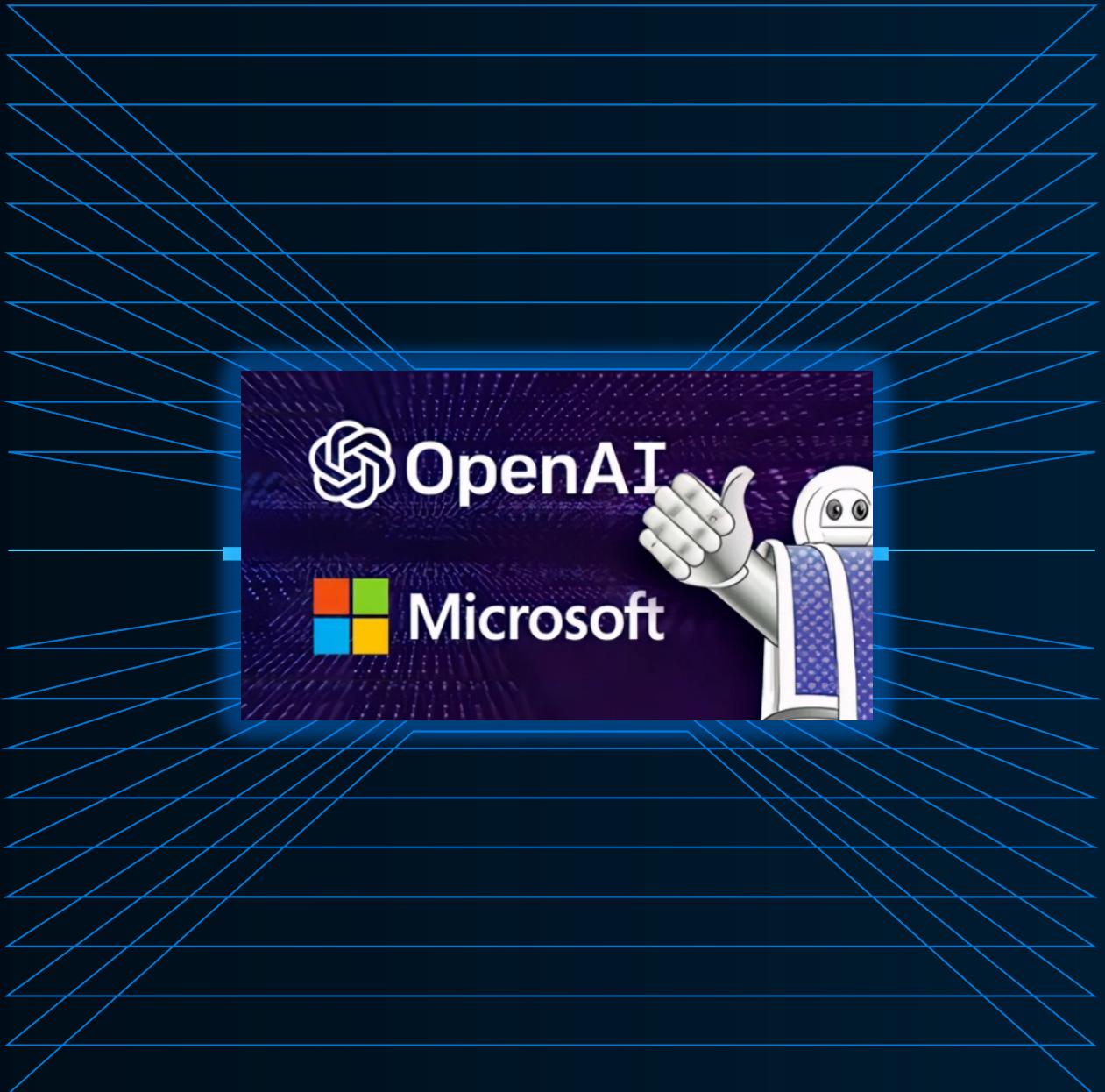


Microsoft AI: the ultimate answer to life, the universe and everything else?

Dr. Andreas Hopfgartner

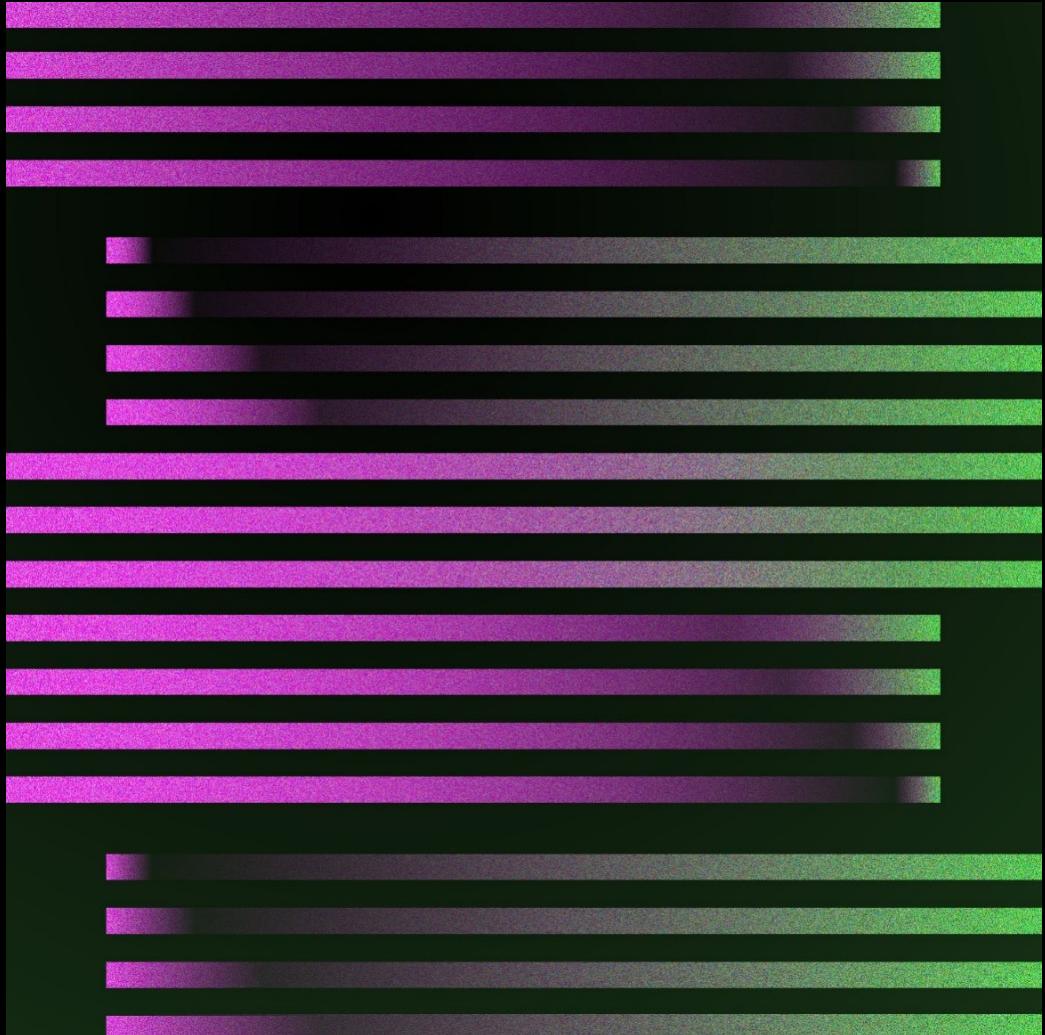
Cloud Solution Architect AI

[Microsoft AI: The ultimate answer to life, the universe and everything else? , Do., 30. März 2023, 16:00 | Meetup](#)



Why so much hype around ChatGPT?

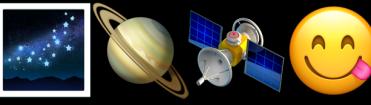
- ChatGPT
 - 100m users in 2.5 months
 - Most “human-like” interaction
- What’s new about it?
 - Can **generate** and **do** “things”
 - Answer **knowledge questions** directly
 - Answer **coding** questions
 - Can **correct itself**, if you ask it
- Prompt examples [here](#)



Polls

- Who has used ChatGPT or BingGPT for private purposes?
- Who has used OpenAI programmatically (API or SDK)?
- Who has or is actively using OpenAI techniques in a business project?

ChatGPT, tell me a story ...



AH Write a very little story about Markus and Katharina, tow persons who are infamous for beeing late. Write the story in the style of Douglas Adams and add Marvin, a depressed robot to the story.



Markus and Katharina were notorious for their tardiness. They were always running behind schedule, much to the chagrin of everyone who had the misfortune of waiting for them. Today, they had an appointment with Marvin, the perpetually depressed robot.

Marvin had been waiting for Markus and Katharina for what seemed like an eternity. As he sat there, his circuits slowly draining of power, he couldn't help but feel a sense of despair wash over him. What was the point of it all? Life was meaningless, and waiting for Markus and Katharina was just another reminder of that fact.

Finally, after what felt like an eternity, Markus and Katharina arrived. Marvin didn't bother to hide his irritation. "You're late," he grumbled.

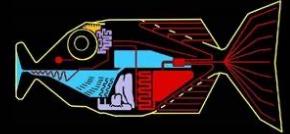
"I'm sorry, Marvin," Katharina said, her voice apologetic. "We got caught in traffic."

Marvin let out a long, exasperated sigh. "Of course you did," he muttered. "It's not like I have anything better to do than wait around for you two."

Markus and Katharina exchanged a nervous glance. They knew how much Marvin hated waiting, and they

Follow-up prompts:

- Now add ... to the story.
-



Emergent behavior

Chat Verfassen Insights X

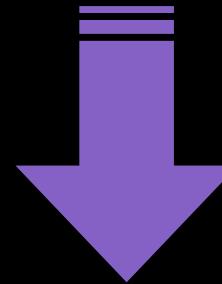
List the computers in Hitchhiker's guide to the Galaxy in order from small to big.

Suchen nach: „list of computers in hitchhiker's guide to the galaxy“
Suchen nach: „list of computers in hitchhiker's guide to the galaxy wiki“
Antworten für Sie werden generiert...

I found a list of computers in Hitchhiker's Guide to the Galaxy on [Wikipedia](#). The list is as follows:

- Deep Thought:** A computer that was created by a race of hyper-intelligent beings to calculate the Answer to the Ultimate Question of Life, the Universe, and Everything. It took 7.5 million years to calculate the answer which turned out to be 42.
- Earth:** A computer that was created by a race of hyper-intelligent beings to calculate the Question to the Ultimate Answer of Life, the Universe, and Everything. It was destroyed by Vogons before it could complete its task.
- Hactar:** A computer that was created by the Silastic Armorfiends of Striterax to design a weapon capable of destroying all life in the universe.
- Krikkit War Computer:** A computer that was created by the Krikkiters to plan their war against the rest of the universe.
- Marvin:** A robot with a “brain the size of a planet” who is often referred to as a computer.
- Mentalis:** A computer that was created by Zarniwoop’s people to help them understand their place in the universe.
- The Googleplex Star Thinker:** A supercomputer that was created by Googleplex Star Thinker Corporation to calculate the trajectory of every single dust particle throughout a five-week Dangrabad Beta sand blizzard.
- The Total Perspective Vortex:** A machine that shows its victims their true place in the universe, causing them to go insane.

Weitere Informationen:



What are the key capabilities of intelligence?
Answer very short.

Intelligence includes learning, reasoning, problem-solving, perception, and using language.

AINS
REASONING
RECOGNITION
ISLATION
DIALOGUE
EXPLANATIONS
PHYSICS QA
STANDING

**Sparks of Artificial General Intelligence:
Early experiments with GPT-4**

Sébastien Bubeck Varun Chandrasekaran Ronen Eldan Johannes Gehrke
Eric Horvitz Ece Kamar Peter Lee Yin Tat Lee Yuanzhi Li Scott Lundberg
Harsha Nori Hamid Palangi Marco Tulio Ribeiro Yi Zhang

Microsoft Research

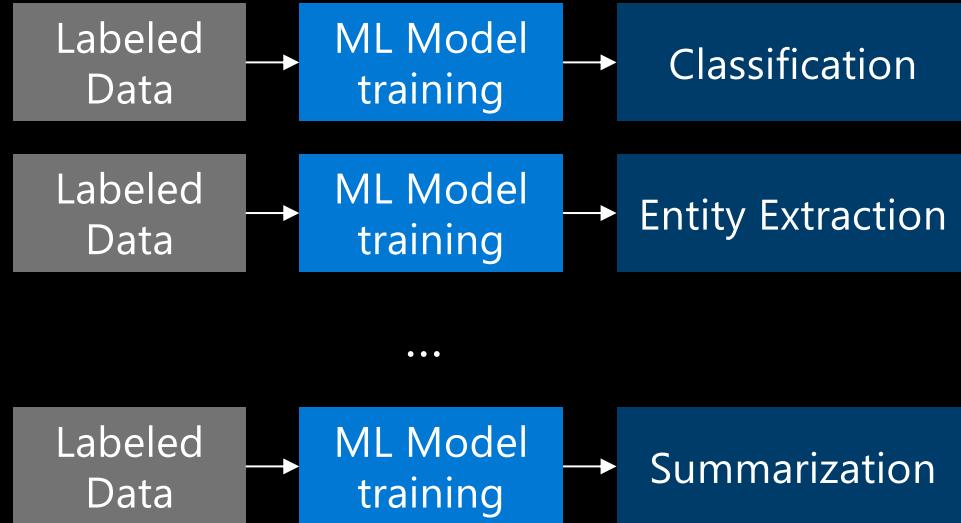
Abstract

Artificial intelligence (AI) researchers have been developing and refining large language models (LLMs) that exhibit remarkable capabilities across a variety of domains and tasks, challenging our understanding of learning and cognition. The latest model developed by OpenAI, GPT-4 [Ope23], was trained using an

[2303.12712.pdf \(arxiv.org\)](https://arxiv.org/abs/2303.12712)

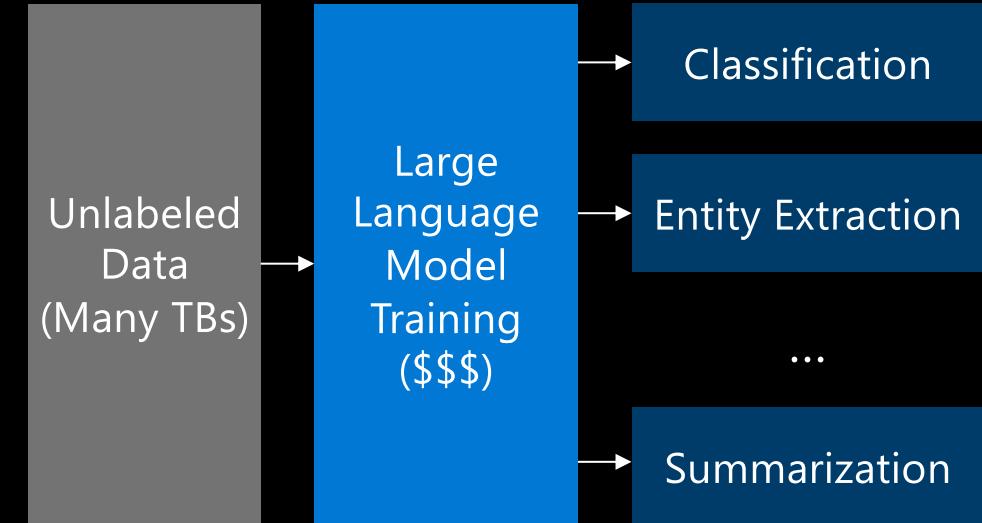
Large Language Models

Typical ML for NLP



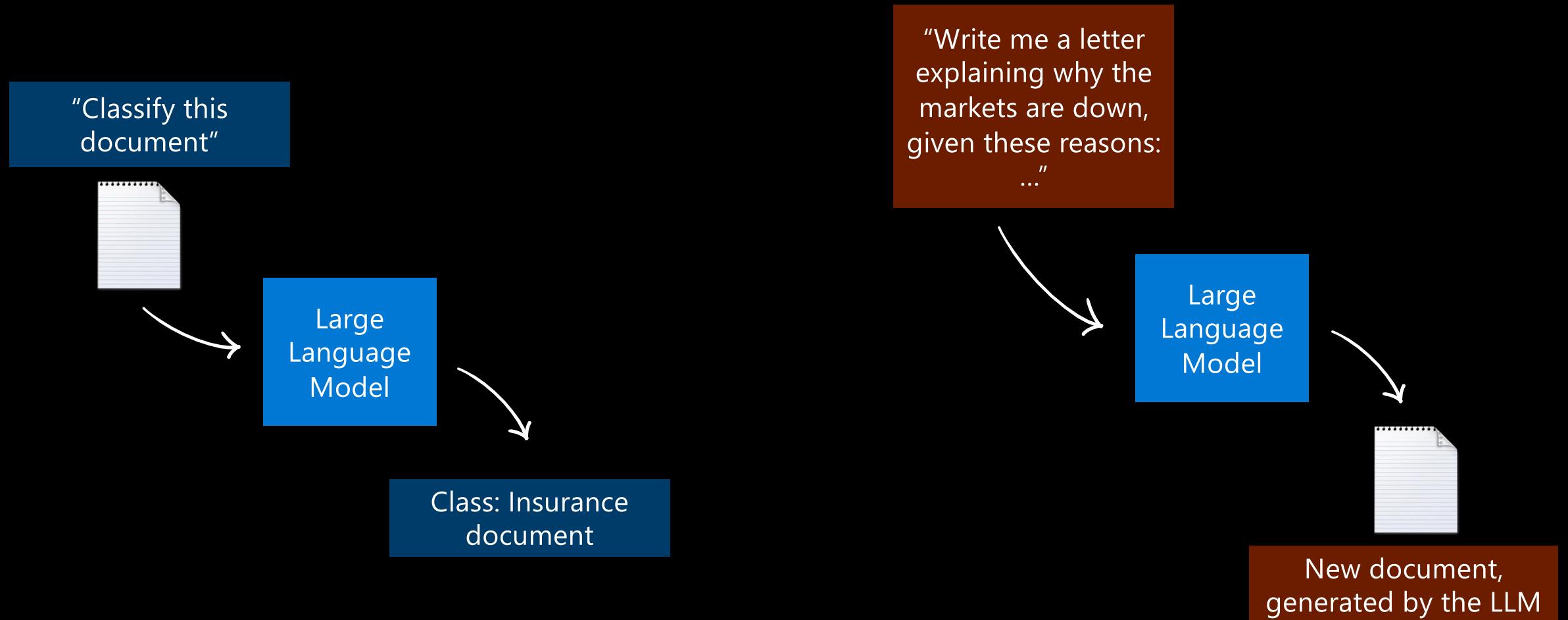
One model per capability
Labeled data to train
Highly optimized for use case

Large Language Models



Single model for all use cases
Describe in natural language what it should do

LLMs can also “generate things”



LLMs can do typical ML tasks
easily (often unsupervised)

LLMs can also machine-read (understand)
and generate new documents

Where are we with AI in the grand schema?

Past, present, future

We are here!



Narrow AI

- Single task, single domain
- Better than human in accuracy and speed for certain tasks

Broad AI

- Multi-task, multi-domain
- Multi-modal
- Distributed AI

Strong AI (AGI)

- Understanding of the physical environment
- Cross-domain learning & reasoning
- Broad autonomy



Ensure that artificial general intelligence (AGI) benefits humanity.

Groundbreaking research
Latest models
Fast innovation



Empower every person and organization on the planet to achieve more

Enterprise features
Production SLAs
Data privacy

GPT-3

GPT-4 preview

Codex

DALL·E preview

ChatGPT preview

Generate & Understand Text

Generate & Understand Code

Generate images from text

Chat version of GPT-3

Tell me about Azure OpenAI Service from Microsoft!

Azure OpenAI Service is a product that allows you to access powerful language models from OpenAI, such as GPT-3, Codex and DALL-E, through a REST API ¹. It is part of Azure Cognitive Services and runs on Azure global infrastructure ². What are you interested in learning more about Azure OpenAI Service?

Learn more: [1. learn.microsoft.com](#) [2. azure.microsoft.com](#) [3. learn.microsoft.com](#) [+3 more](#)

1 of 6

How does Microsoft cooperate with OpenAI?

Microsoft and OpenAI have a long-term partnership that involves several aspects ¹ ². Microsoft invested \$1 billion in OpenAI in 2019 ¹ ³ and became its exclusive cloud provider ⁴ ³. The two companies also collaborate on developing AI supercomputing technologies ⁴ ² and licensing some of OpenAI's technology to Microsoft for commercialization ⁴. Azure OpenAI co-develops the APIs with OpenAI, ensuring compatibility and a smooth transition from one to the other ⁵. What else would you like to know about Microsoft and OpenAI?

Learn more: [1. forbes.com](#) [2. blogs.microsoft.com](#) [3. openai.com](#) [4. forbes.com](#) [+2 more](#)

2 of 6

Did Microsoft give more funding in 2023?

Yes, Microsoft confirmed a new multi-year, multi-billion dollar (reported to be \$10 billion) investment in OpenAI on January 23, 2023 ¹ ². This was the third phase of their long-term partnership and followed their previous investments in 2019 and 2021 ¹ ². Why are you curious about Microsoft's funding for OpenAI?

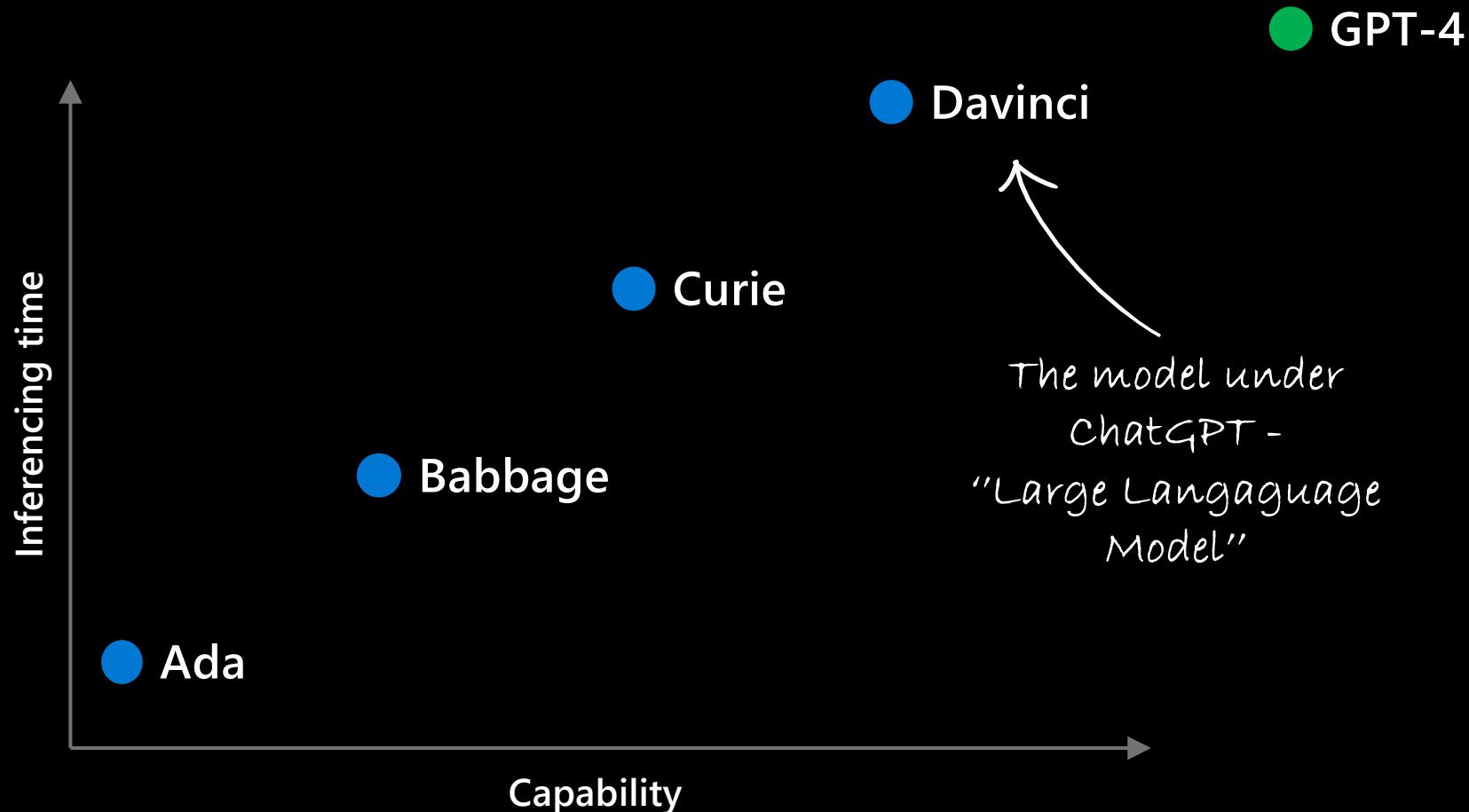
Learn more: [1. en.wikipedia.org](#) [2. blogs.microsoft.com](#) [3. en.wikipedia.org](#) [+2 more](#)

3 of 6



Ask me anything...

OpenAI GPT-3 & GPT-4 Models



Comparison of GPT versions

GPT-3.5

- Available in Western Europe
- Use-case specific models to optimize inference time and performance
- Suitable for a large range of use cases

ChatGPT (preview)

- Should be first choice for most use cases
- Most economical GPT model in Azure OpenAI Service
- For all workloads, not just Chat

GPT-4 (preview)

- Improved problem solving and reasoning capabilities
- Iterative refinement:
 - Paste in code errors & GPT-4 will fix for you
 - Iterate on stories
- Increased token limit - works well for long content



Generative AI

GPT-3 & 4

Prompt:

Write a tagline for an ice cream shop.

Response:

We serve up smiles with every scoop!

Codex

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'
```

DALL·E

Prompt: A white Siamese cat

Response:



ChatGPT

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Azure AI

Applications



Partner Solutions

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

ML Platform



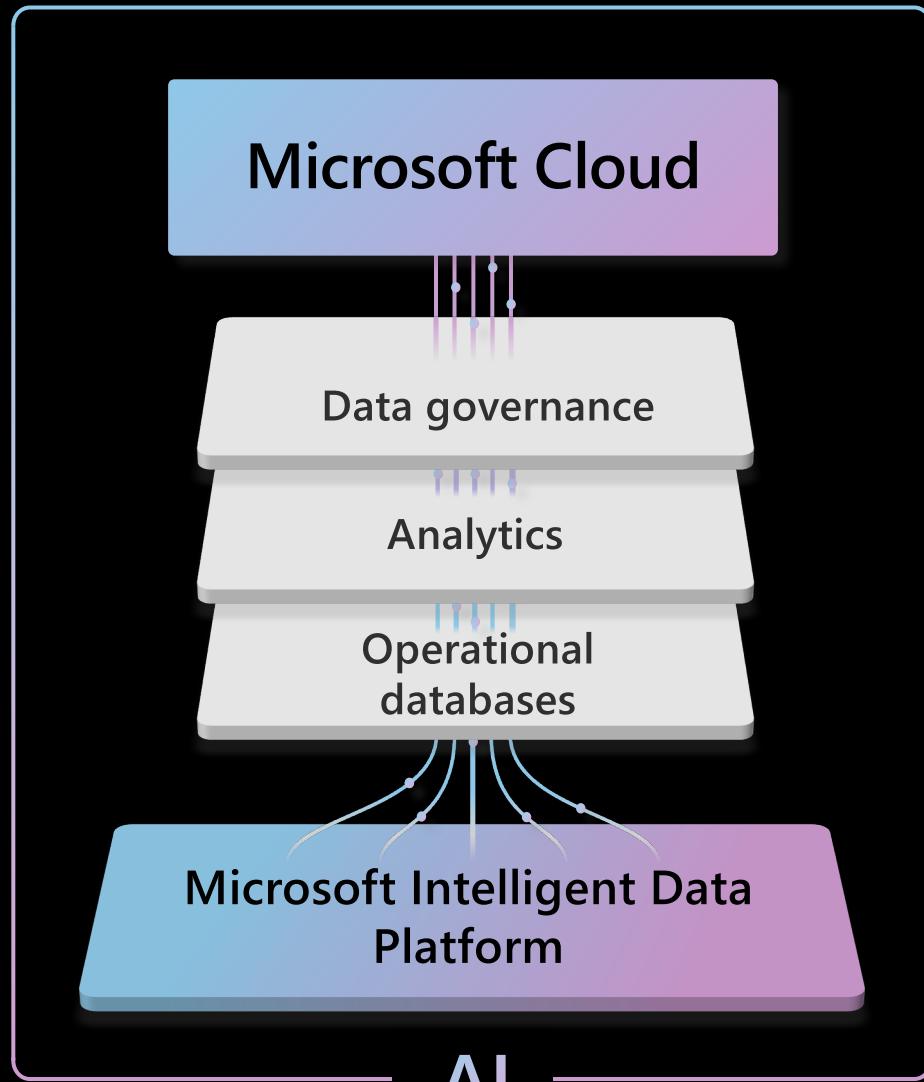
Azure Machine Learning



Business
Users



Developers &
Data Scientists



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

Azure OpenAI

Top Capabilities and Use Cases



Content generation

Call center analytics: automatically generate responses to customer inquiries

Generate personalized UI for your website



Summarization

Call center analytics: summary of customer support conversation logs

Subject matter expert document: summarization (e.g. Financial reporting, analyst articles)

Social media trends summarization



Code generation

Convert natural language to SQL (or vice versa) for telemetry data

Convert natural language to query proprietary data models

Code documentation



Semantic search

Search reviews for a specific product/service

Information discovery and knowledge mining

Examples of multiple model use cases

End to end call center analytics: classification, sentiment, entity extraction, summarization and email generation

Customer 360: hyper-personalisation using timely summarization of customer queries & trends, search, and content generation

Business process automation: search through structured & unstructured documentation, generate code to query data models, content generation

Demos

- [Azure OpenAI Studio](#)
- OpenAI SDK
 - [LangChain on Azure](#)
 - [Welcome to LangChain — 🦜🔗 LangChain 0.0.126](#)
 - [Connect OpenAI To +5,000 Tools \(LangChain + Zapier\) - YouTube](#)
 - [Computer Vision \(Florence\)](#)



Solutions and Solution Accelerators

-
-  <https://aka.ms/openaidemos>
 - [OpenAI in a day](#)

How do I build something like ChatGPT that uses my own data?

1 You can use ChatGPT **out of the box!**

2 You have to **fine-tune** the model with your own data!

3 Something else!

4 **Inject** the relevant information into ChatGPT along with the question

Should I **fine-tune GPT-3** with my data?

- Yes, but only for these use cases:
 - Classification
 - Conditional Generation
 - Answering in a specific “style”
 - Both are supervised training tasks!
- Just throwing in your data (unsupervised) likely **won’t** work
 - Even if you had a lot of data, it won’t change the model’s weights, it doesn’t add new information, only weights the weights...



A better approach: Prompt injection

- Inject the data you want to operate to the prompt
- Allows to answer question on “private” data
- Formatting style can be applied
 - E.g., markdown or json answer
- How do I find the right document
 - “Legacy” search or embedding-based search

Azure OpenAI Studio > GPT-3 Playground [Privacy & cookies](#)

GPT-3 Playground

Deployments Examples

text-davinci-003 [Load an example](#) [View code](#)

You will answer questions based on the article below. Only use the information present in the article, if you can't answer the question, say "I dont know". Do not come up with your own responses.

Article:

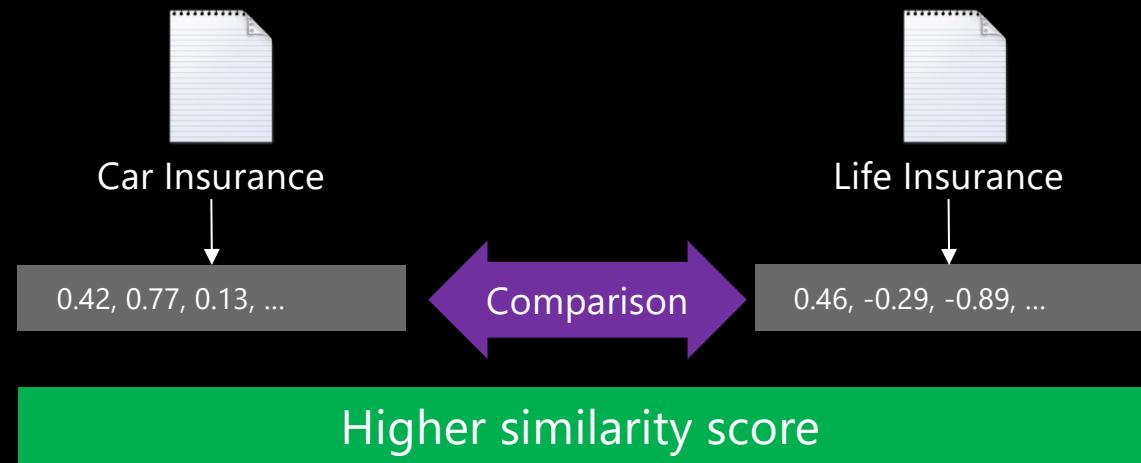
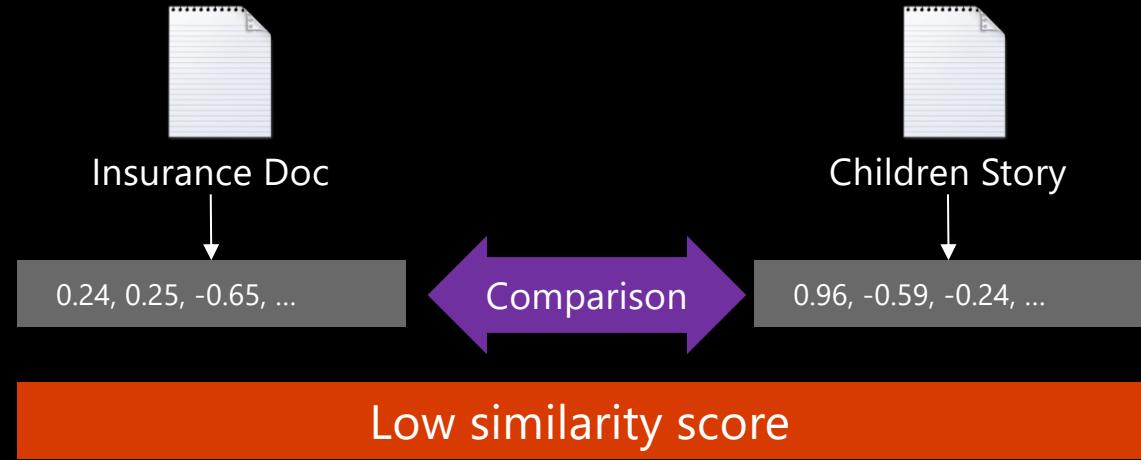
On the date of August 17th, 2019, as an employee of Contoso Restaurant, I, Mateo Gomez, residing in 1234 Hollywood Boulevard Los Angeles CA, with social security number: 123-45-6789, hereby declare to fully support and promote the top priorities delegated to me at Contoso Restaurant, and vow to never disclose any information including but not limited to trade secrets, finances, delivery schedules, and recipes. If I, Mateo Gomez, accidentally or with intent breach the conditions set forth in this contract, understand fully that I shall receive a written termination to the following email address mateo@contosorestaurant.com as well as a fine of up to \$10,000.

Question: What is the fine breaking the NDA and what information shall not be disclosed?

Answer: The fine for breaking the NDA is up to \$10,000 and the information that shall not be disclosed includes trade secrets, finances, delivery schedules, and recipes.

OpenAI Embeddings

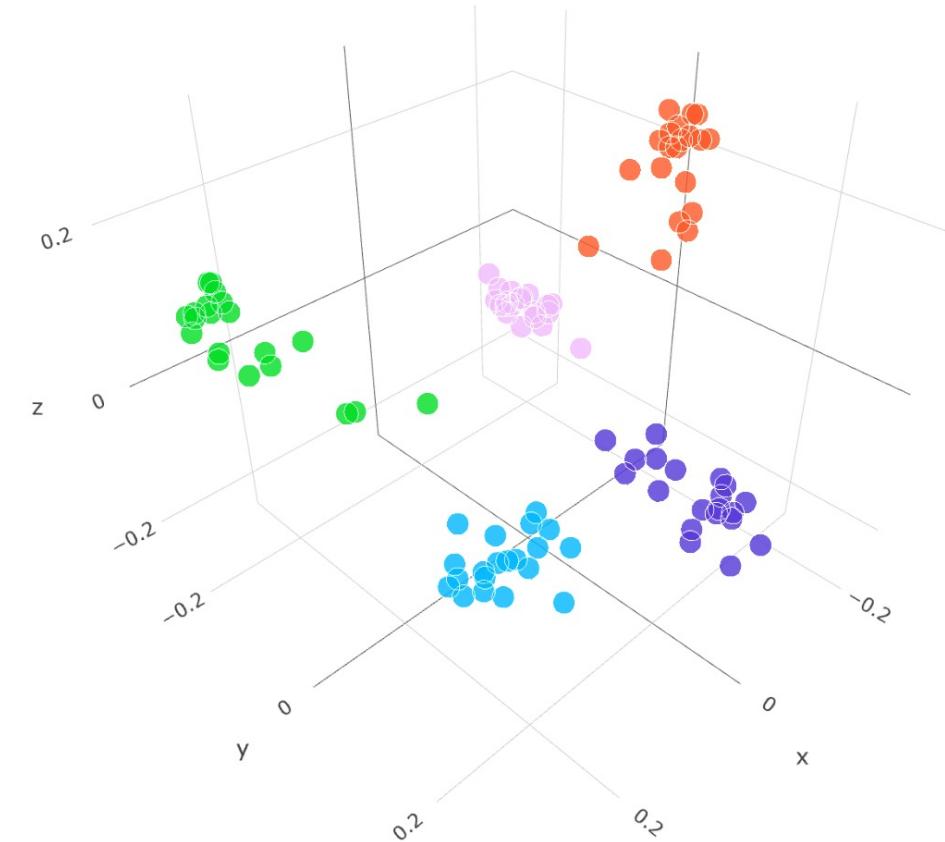
- Dense representation of **semantic meaning** of a piece of text
 - Allows to compare how similar two pieces of text are
 - Same idea as word2vec and others, but significantly better at semantic capturing
- A tool to build ChatGPT-like experiences on private data



Use Cases for Embeddings

- **Search**
 - where results are ranked by relevance to a query string
- **Clustering**
 - where text strings are grouped by similarity
- **Recommendations**
 - where items with related text strings are recommended
- **Anomaly detection**
 - where outliers with little relatedness are identified
- **Diversity measurement**
 - where similarity distributions are analyzed
- **Classification**
 - where text strings are classified by their most similar label

● animal ● athlete ● film ● transportation ● village



GPT Customization

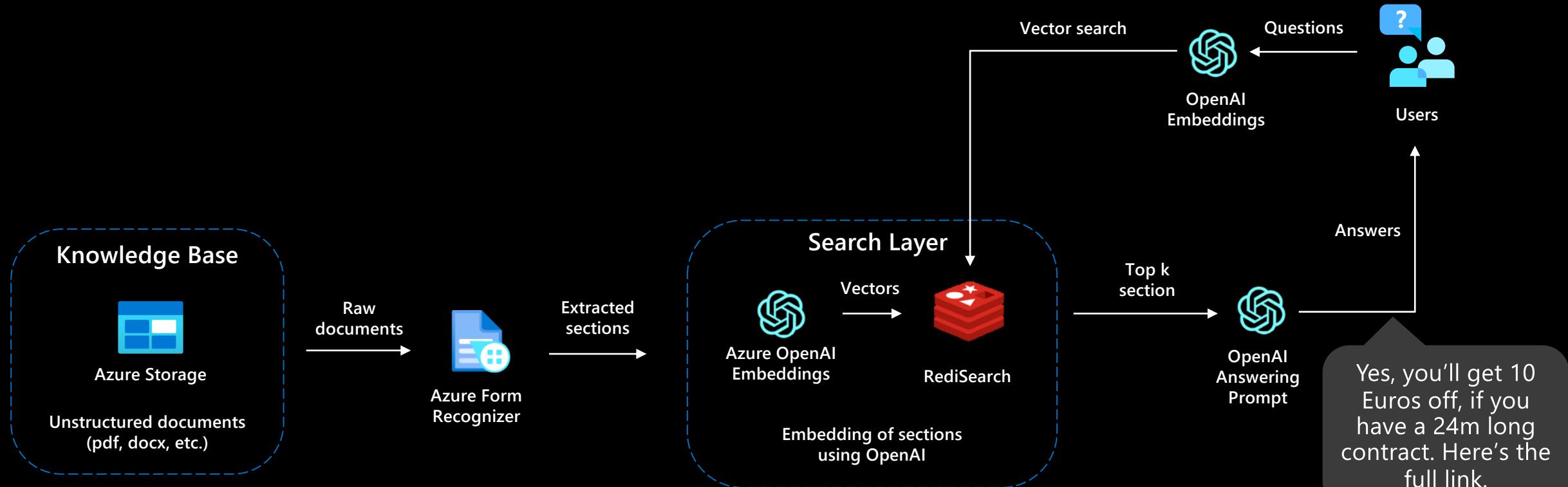
- Try **zero-shot** with Davinci (prompt engineering)
 - If it works, great, try smaller models to save \$
 - Consider fine-tuning if use case allows it to save \$ (might require bigger scale)
- Try **few-shots** with Davinci (if use case allows it)
 - If it works, great, try smaller models to save \$
 - Consider fine-tuning if use case allows it to save \$
- Try **embeddings** or different model for fine-tuning

[Reference: How to customize a model with Azure OpenAI - Azure OpenAI | Microsoft Learn](#)

Q&A with Semantic Answering with Azure OpenAI Service

Extract precise answers from your unstructured documents similar to ChatGPT

Do I get a discount when I have contract x and y?



Knowledge Base



Azure Storage

Unstructured documents
(pdf, docx, etc.)

Raw documents



Azure Form Recognizer

Extracted sections

Search Layer



Azure OpenAI
Embeddings



Redisearch

Embedding of sections
using OpenAI



OpenAI
Embeddings



OpenAI
Answering
Prompt



Users

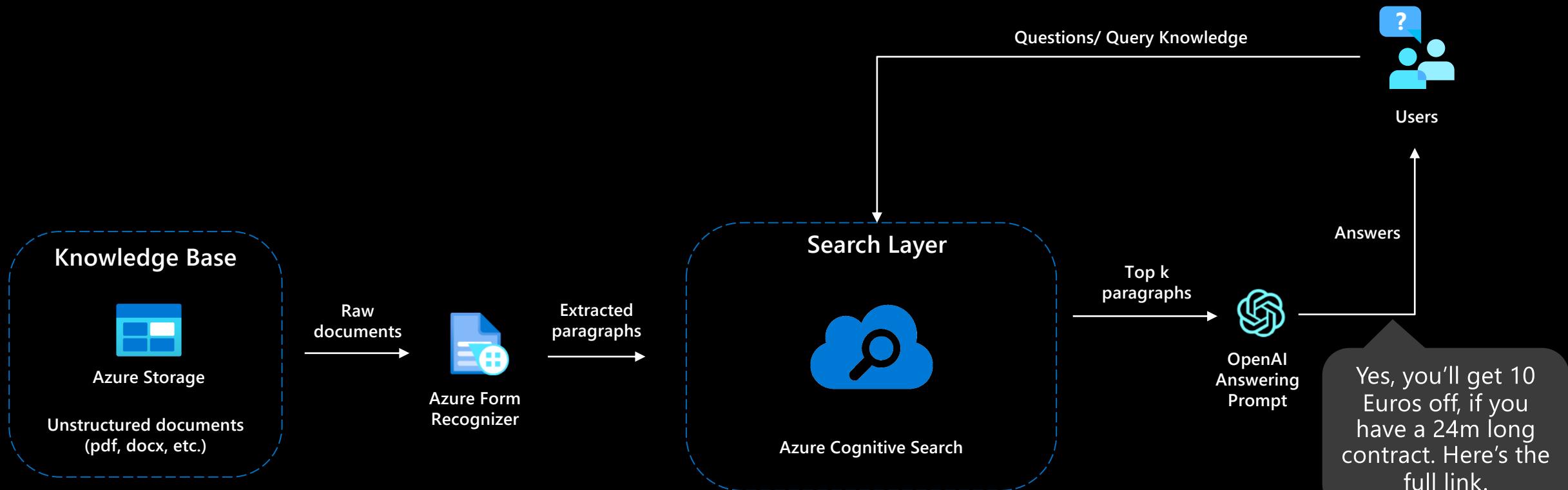
Answers

Yes, you'll get 10 Euros off, if you have a 24m long contract. Here's the full link.

ChatGPT with Enterprise Data

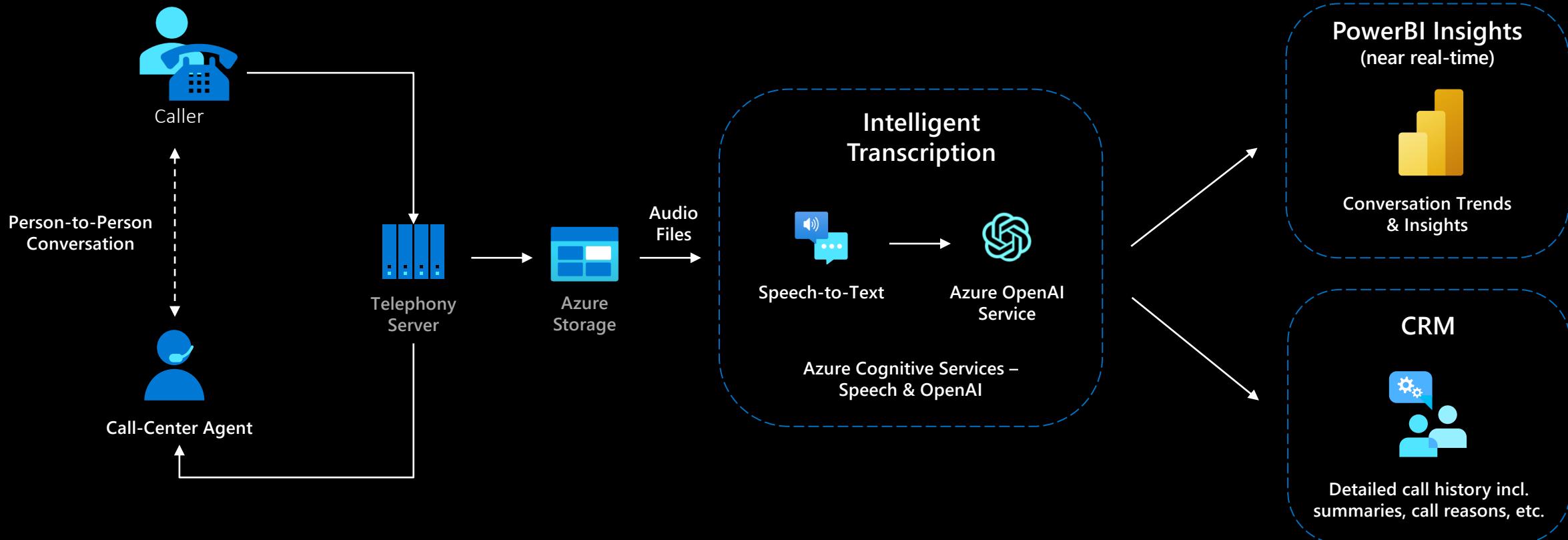
Extract precise answers from your unstructured documents

Do I get a discount when I have contract x and y?



Contact Center Analytics using Speech API & OpenAI

Extract rich insights from call transcripts



Demos

- OpenAI SDK
 - [Llamaindex \(GPT Index on Azure\)](#)

So why is OpenAI a game changer?



Generative AI



Large Language Models (LLMs)



Human-like instructing beyond programming (rapid prototyping)



Broad knowledge, including domain-specific data



Disruptive force: Human + AI



Vision



Speech



OpenAI Service



Language



Decision

To learn more, please visit Azure OpenAI Service's
[product page](#).

Next steps

Have a use case? Speak to your Microsoft Sales
Contact and sign up for access here:
aka.ms/oai/access

Azure OpenAI Service Learning Guide

- [Create an Azure subscription](#)

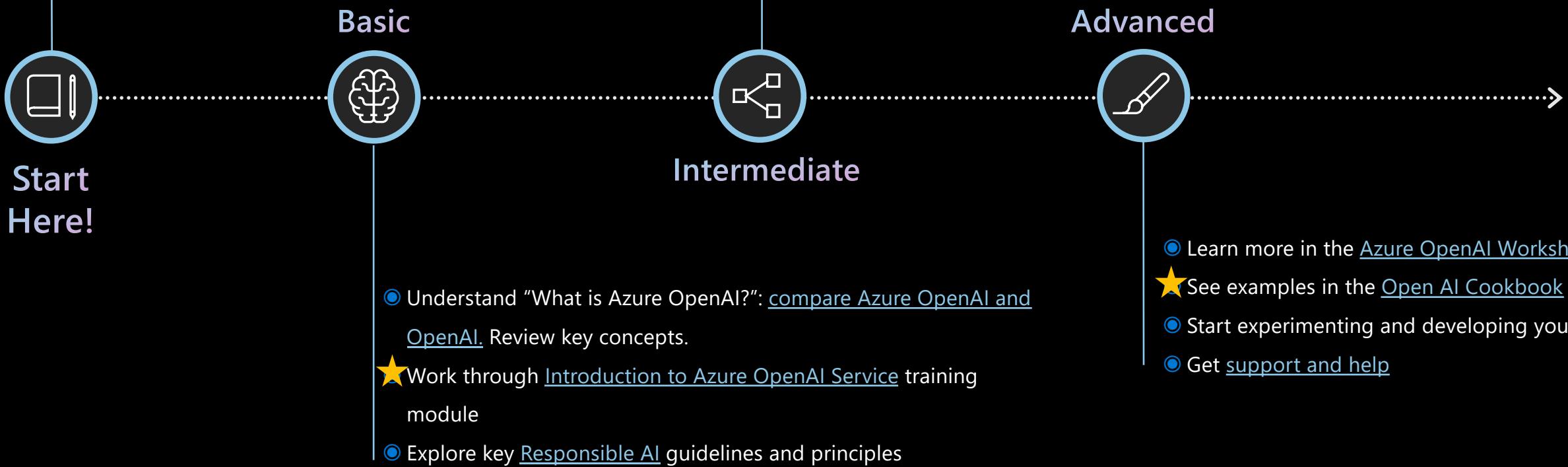
★ Apply for access to the Azure OpenAI Service:

<https://aka.ms/oai/access>

- Watch the video: [An Introduction to Azure OpenAI](#)

- Get Familiarized with the product content: [Azure OpenAI Page](#)

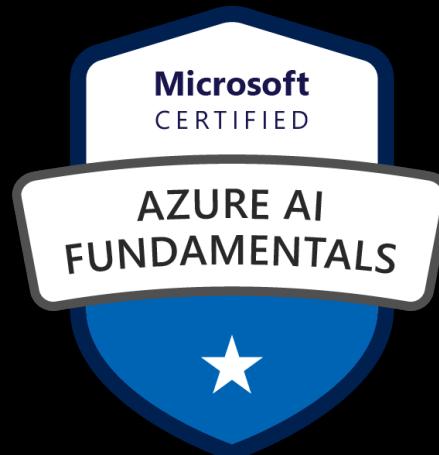
- Review how other [customers are using Azure AI](#)



Validating your AI skills with Microsoft Certifications

Role based Azure AI Certifications for all users

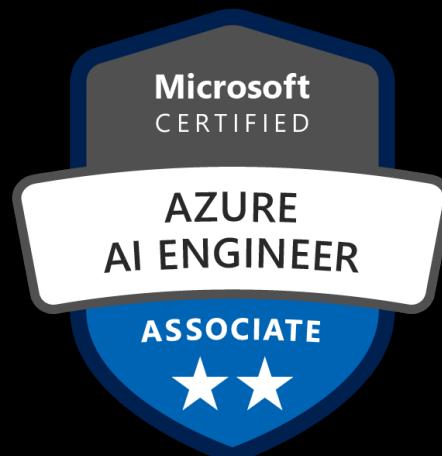
For Business Pros



114k

Certified Pros

For AI Engineers



16k

Certified Engineers

For Data Scientists



19k

Certified Data Scientists

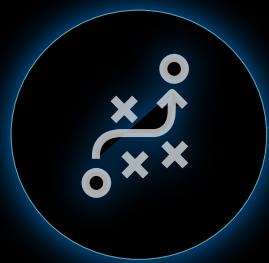
AI Business School

Audience: Business Decision Makers (e.g. Business Unit Managers, Senior Management)

Format: Online course, Free, On demand, Diversified content (articles, videos, use cases)

Objective: Share insights and practical guidance from top executives (Microsoft , Customers, Partners) on how to strategically apply AI in your organization.

6 Pillars



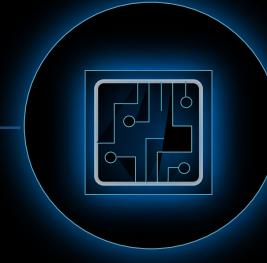
Define an AI strategy to create business value



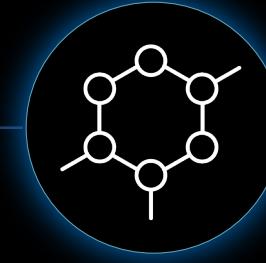
Discover ways to foster an AI-ready culture



Identify guiding principles for responsible AI



Introduction to AI technology for business leaders



Scale AI in your organization



Enable AI business users with

Learn more at microsoft.com/ai-business-school

In partnership with



The Business School
for the World®



Thank you