Azure OpenAI Series (Virtual)

Saturday, 04 Nov, 2023

Kick Start Your Azure OpenAI Journey Step by Step – Part 2

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Global Speaker

- Passionate to **learn**.
- Passionate to **share knowledge**.
- Passionate to work on **Microsoft Technologies**

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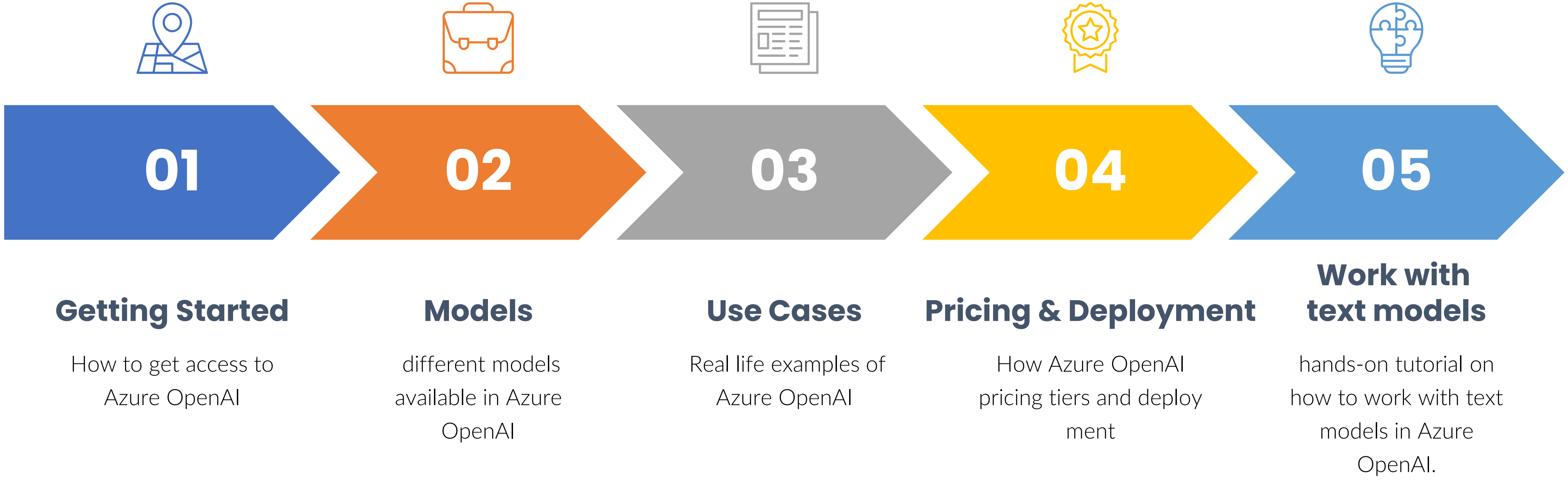
AGENDA SLIDE

Part 1



01

Getting Started

How to get access to Azure OpenAI

02

Models

different models available in Azure OpenAI

03

Use Cases

Real life examples of Azure OpenAI

04

Pricing & Deployment

How Azure OpenAI pricing tiers and deploy ment

05

Work with text models

hands-on tutorial on how to work with text models in Azure OpenAI.

Azure Open AI

Sessions Roadmap

Part 01

Exploring Azure OpenAI: a rewarding journey into integrating Azure services with OpenAI tech**. Learn about ChatGPT, DALL-E2, and more to establish a strong AI foundation and unleash creativity**.

Part 2

Gain basic Azure OpenAI, access, models, use cases, pricing, deployment, and **text model utilization**.

Part 3

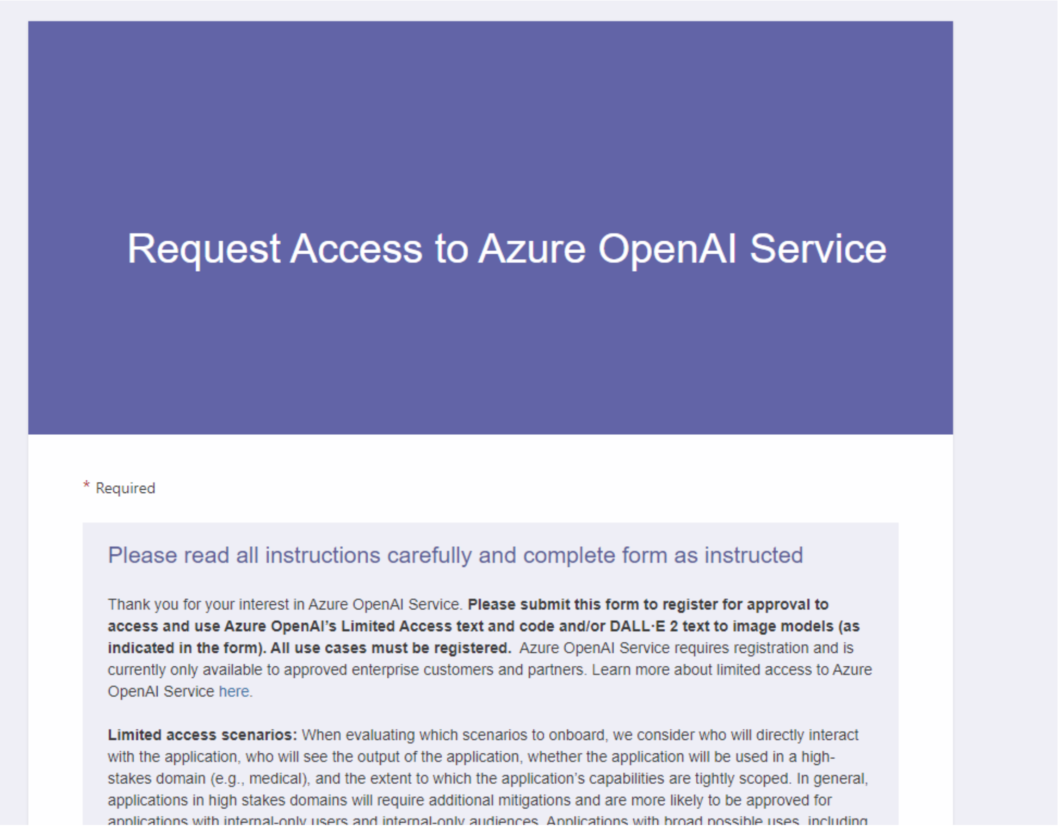
Part 3 enhances Part 2's learning: **refine models, ensure security, employ content safety**, demo applications. **Relevant for those eager to leverage Azure OpenAI for personal AI solutions**..

Organized By:
Pune Tech Community

How to access Azure OpenAI Service?

- 1. Access is granted upon request.
- 2. Submission of a form is required.
- 3. Microsoft verifies company information before providing access to your Azure Subscription.

- Request Access to Azure OpenAI Service URL



Request Access to Azure OpenAI Service

* Required

Please read all instructions carefully and complete form as instructed

Thank you for your interest in Azure OpenAI Service. **Please submit this form to register for approval to access and use Azure OpenAI's Limited Access text and code and/or DALL·E 2 text to image models (as indicated in the form). All use cases must be registered.** Azure OpenAI Service requires registration and is currently only available to approved enterprise customers and partners. Learn more about limited access to Azure OpenAI Service here.

Limited access scenarios: When evaluating which scenarios to onboard, we consider who will directly interact with the application, who will see the output of the application, whether the application will be used in a high-stakes domain (e.g., medical), and the extent to which the application's capabilities are tightly scoped. In general, applications in high stakes domains will require additional mitigations and are more likely to be approved for applications with internal-only users and internal-only audiences. Applications with broad possible uses, including

DEMO 1: How to request the Azure OpenAI

Azure OpenAI Service

- Provides **REST API access** to OpenAI language models
- The only cloud offering OpenAI models
- Improved **reliability**
- **Security controls**
- **Great SLA – 99.9%**

Azure OpenAI Models

- The following model families are available in Azure OpenAI service:

GPT-3 (incl. ChatGPT)

GPT-4

Codex

Embedding

Azure OpenAI Models

- Each model family has its own set of capabilities
- When calling the Azure OpenAI REST API we need to specify the exact model we want to use in the model family
- Using the following format:

```
{capability}-{family}-{version}
```

GPT-3

- A family of models that can understand and generate natural language
- Each model in GPT-3 has its own tradeoff between capability and performance
- Models are named in alphabetical order. Goes from the fastest to the most capable

GPT-3

- GPT-3 models:

`text-ada-001` The **fastest model.** Good for parsing text and basic classification tasks

`text-babbage-001` Can be used for semantic search and simple classification

`text-curie-001` Can be used for translation, complex classification, text sentiment, summarization

`text-davinci-003` The most capable model. Use for identifying complex intent and summarization

`gpt-35-turbo` ChatGPT. Conversational model capable of complex interactions in a conversation-in / message-out format. Has its own API

GPT-4

- Improve over GPT-3
- Capable of solving difficult problems
- Better accuracy than GPT-3
- Optimized for chats
- Currently in preview, not publicly available

GPT-4

- In order to get access:
  - Have OpenAI service access
  - Apply to join the waiting list
- Link is in the resources of this lecture
- We won’t use it in this course

GPT-4

- GPT-4 models:

`gpt-4`	Supports up to 8,192 input tokens
`gpt-4-32k`	Supports up to 32,768 input tokens

Codex

- Based on GPT-3
- Specializes in understanding and generating code
- Trained on billions of lines of public code from GitHub

Codex

- Works best in Python

- Supports also:

  C#

  JavaScript

  Go

  Perl

  PHP

  Ruby

  Swift

  TypeScript

  SQL

  Shell

Codex

- Codex models:

`code-Cushman-001`	**Fast**, good for simple tasks
`code-davinci-002`	The **most capable model**, can perform any code-related task. Great understanding of code segments

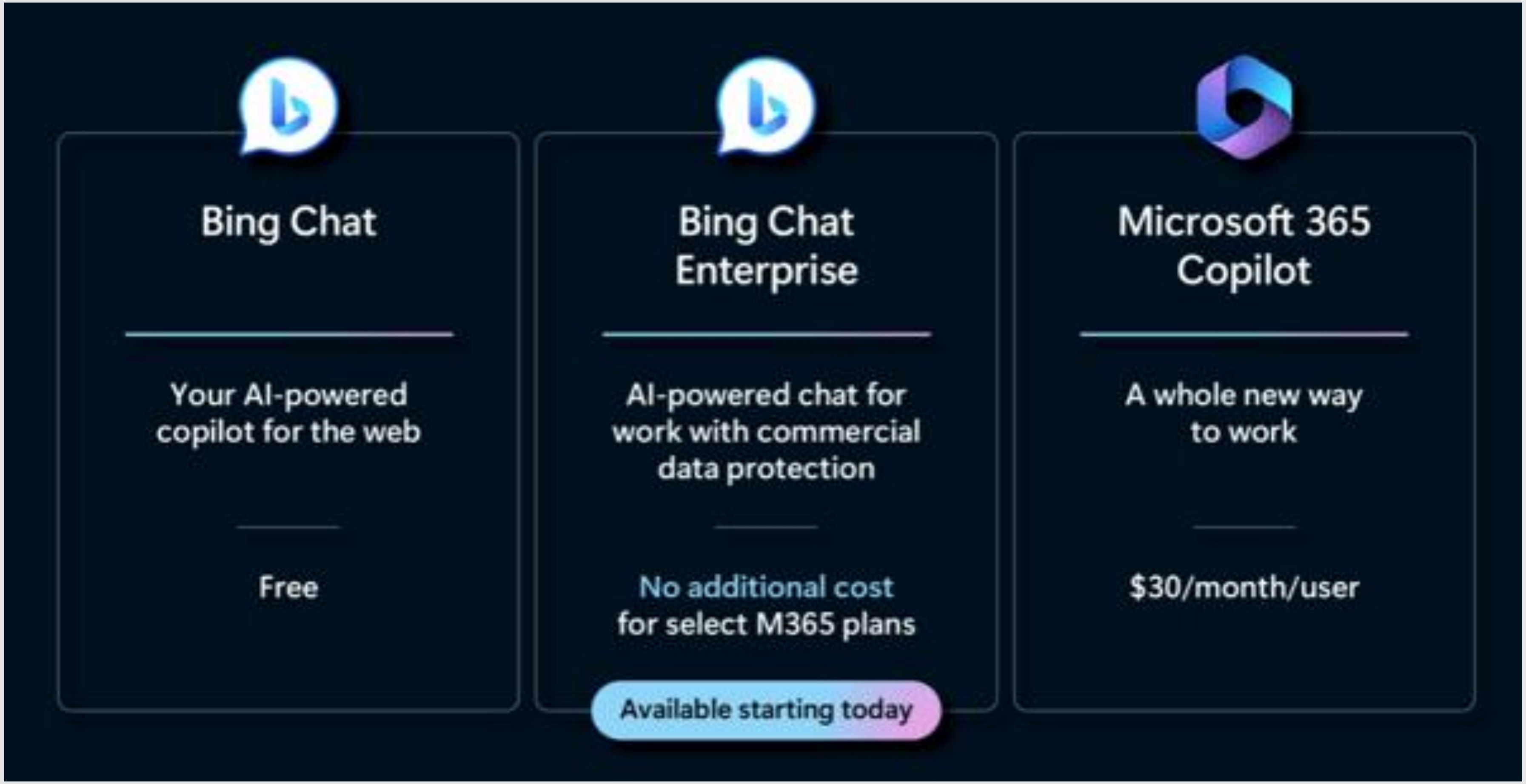
Embeddings

- A special format of data representation
- Used by machine learning models and algorithms
- We won’t work with embeddings in these session
- Microsoft Tutorial

DEMO 2: Azure OpenAI Playground

Bing Chat vs Bing Enterprise vs M365 Copilot

Extract rich insights from documents and summarizing them



Bing Chat	Bing Chat Enterprise	Microsoft 365 Copilot
Your AI-powered copilot for the web	AI-powered chat for work with commercial data protection	A whole new way to work
Free	No additional cost for select M365 plans	$30/month/user
	Available starting today	

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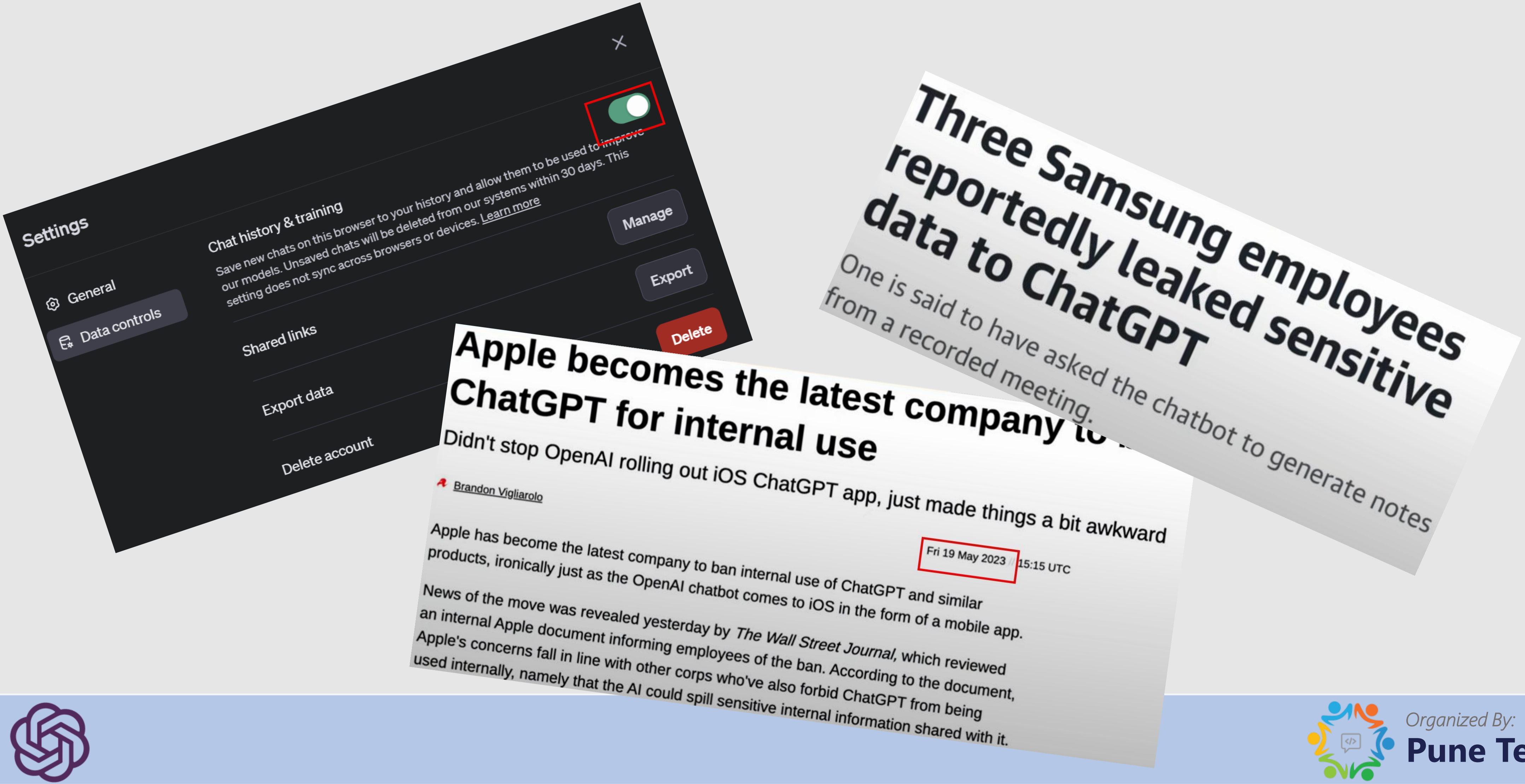
OpenAI ChatGPT

Serious Concern in your data



Settings

Chat history & training

Save new chats on this browser to your history and allow them to be used to improve our models. Unsaved chats will be deleted from our systems within 30 days. This setting does not sync across browsers or devices. Learn more

Three Samsung employees reportedly leaked sensitive data to ChatGPT

One is said to have asked the chatbot to generate notes from a recorded meeting.

Apple becomes the latest company to

ChatGPT for internal use

Didn't stop OpenAI rolling out iOS ChatGPT app, just made things a bit awkward

Brandon Vigliarolo

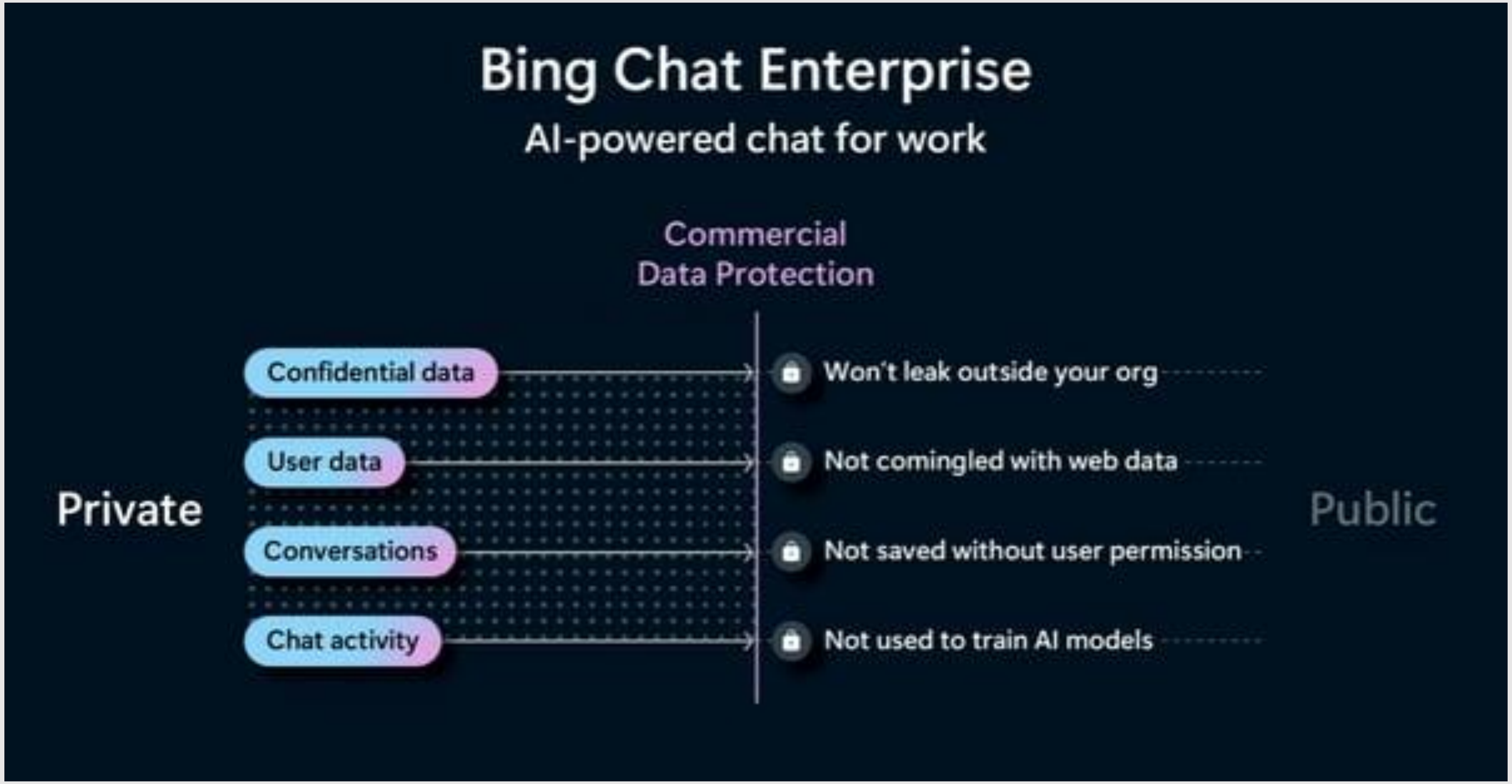
Fri 19 May 2023 // 15:15 UTC

Apple has become the latest company to ban internal use of ChatGPT and similar products, ironically just as the OpenAI chatbot comes to iOS in the form of a mobile app.

News of the move was revealed yesterday by *The Wall Street Journal*, which reviewed an internal Apple document informing employees of the ban. According to the document, Apple's concerns fall in line with other corps who've also forbid ChatGPT from being used internally, namely that the AI could spill sensitive internal information shared with it.

Bing Chat vs Bing Enterprise vs M365 Copilot

Extract rich insights from documents and summarizing them



Bing Chat Enterprise

AI-powered chat for work

Commercial Data Protection

Private

- Confidential data → 🔒 Won't leak outside your org
- User data → 🔒 Not comingled with web data
- Conversations → 🔒 Not saved without user permission
- Chat activity → 🔒 Not used to train AI models

Public

Leverage Bing Chat Enterprise

Bing Enterprise built ChatGPT

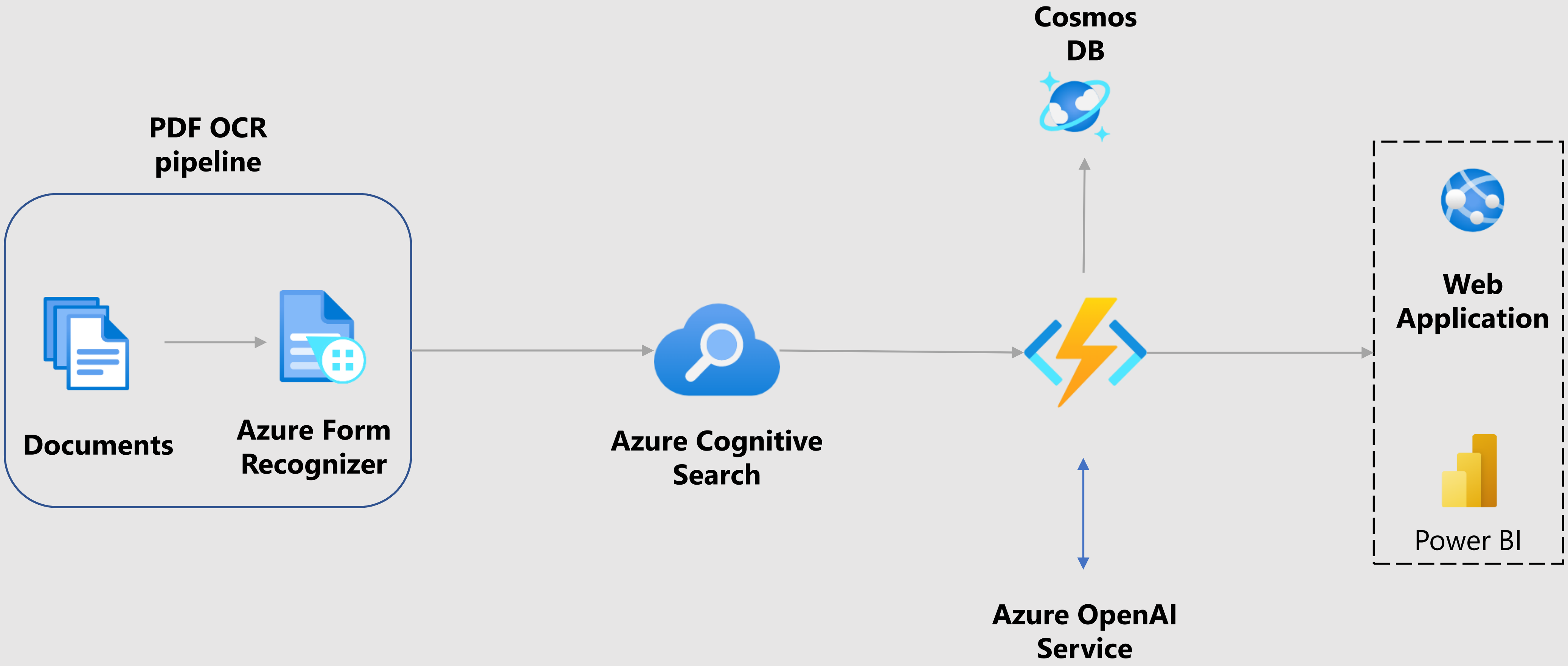
Drafting email messaging with Bing Enterprise Chat

Creating Team message with Bing Enterprise Chat

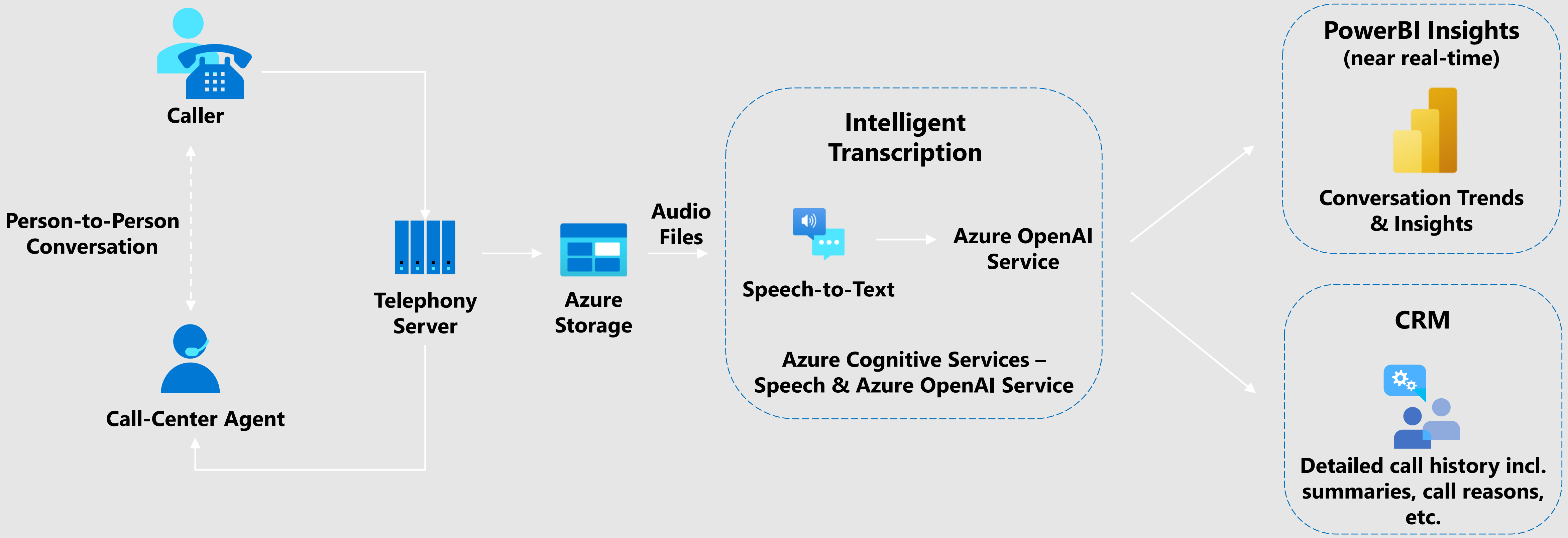
Summarizing PDF with Bing Enterprise Chat

Document Process Automation

Extract rich insights from documents and summarizing them

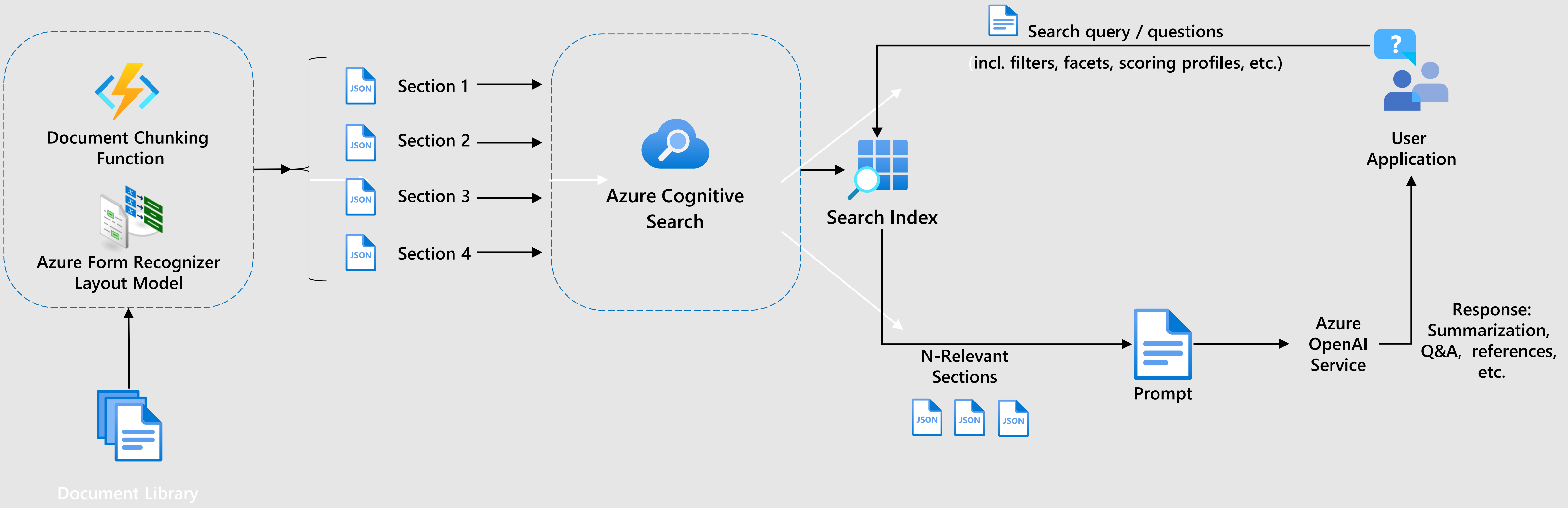


Contact Center Analytics using Speech API & Azure OpenAI Service



Caller
Person-to-Person Conversation
Call-Center Agent
Telephony Server
Azure Storage
Audio Files
Intelligent Transcription
Speech-to-Text
Azure OpenAI Service
Azure Cognitive Services – Speech & Azure OpenAI Service
PowerBI Insights (near real-time)
Conversation Trends & Insights
CRM
Detailed call history incl. summaries, call reasons, etc.

AI-Powered Q&A over Enterprise Data Sources



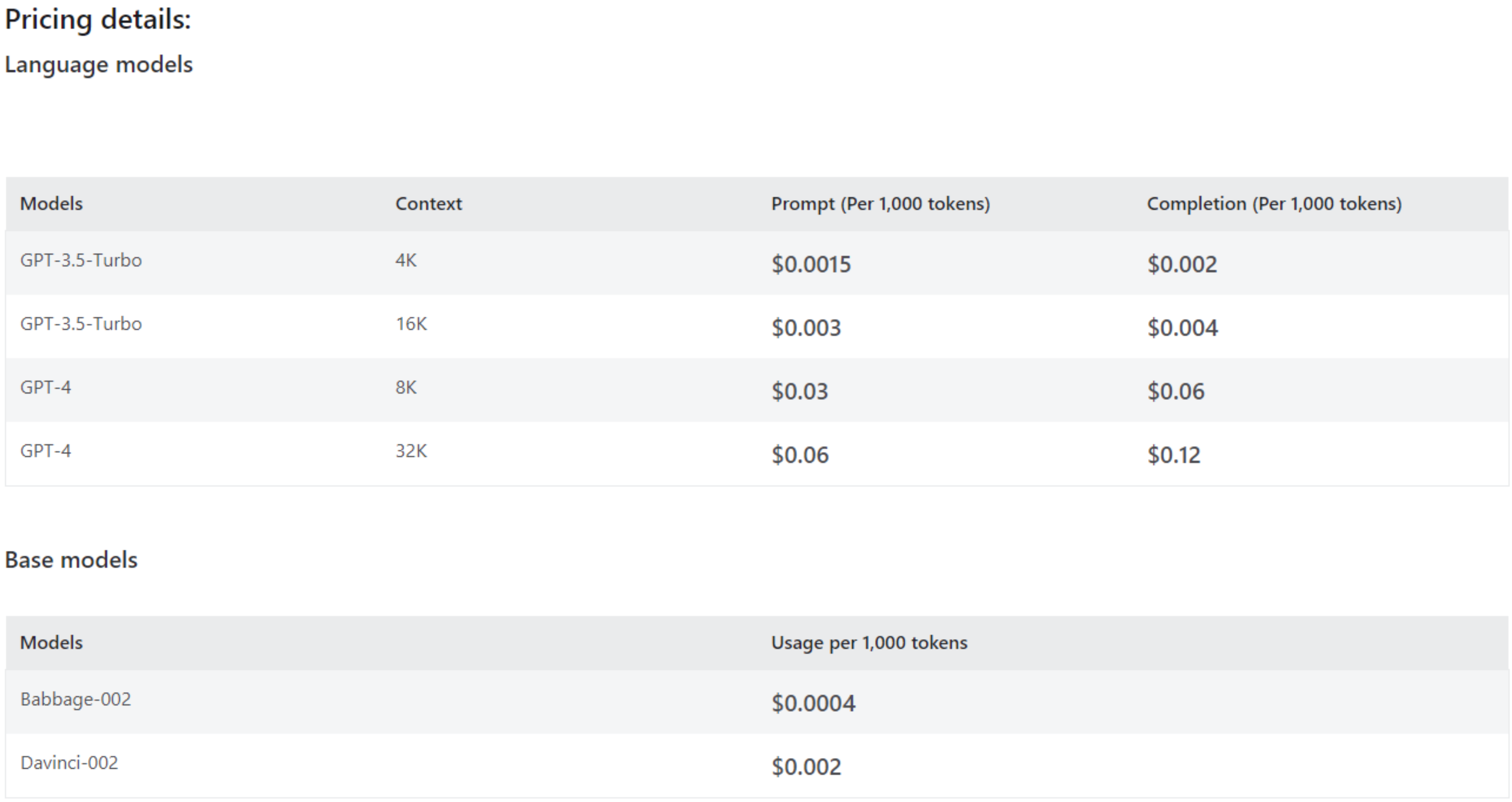
DEMO 3: Bing Chat Enterprise

Limits and Quotas

Limit Name	Limit Value
OpenAI resources per region per Azure subscription	30
Default DALL-E quota limits	2 concurrent requests
Maximum prompt tokens per request	Varies per model. For more information, see Azure OpenAI Service models
Max fine-tuned model deployments	2
Total number of training jobs per resource	100
Max simultaneous running training jobs per resource	1
Max training jobs queued	20
Max Files per resource	30
Total size of all files per resource	1 GB
Max training job time (job will fail if exceeded)	720 hours
Max training job size (tokens in training file) x (# of epochs)	2 Billion
Max size of all files per upload (Azure OpenAI on your data)	16 MB

Reference URL: Quotas and limits reference

Pricing



Pricing details:

Language models

Models	Context	Prompt (Per 1,000 tokens)	Completion (Per 1,000 tokens)
GPT-3.5-Turbo	4K	$0.0015	$0.002
GPT-3.5-Turbo	16K	$0.003	$0.004
GPT-4	8K	$0.03	$0.06
GPT-4	32K	$0.06	$0.12

Base models

Models	Usage per 1,000 tokens
Babbage-002	$0.0004
Davinci-002	$0.002

Reference: Pricing Azure Details

Using Text Models

- In order to use text models we need to deploy them
- After deployment we can test them and use the API
- Deployment is done in Azure OpenAI Studio

Azure OpenAI Studio

- A visual tool for working with OpenAI models
- Allows:

Model deployment

Testing with Playground

Fine tuning

Setting up Content Filters

Content Filters

- AI can be abused to respond in harmful ways
- Azure OpenAI includes a built-in service to guard against that
- Uses the Azure AI Content Safety engine
  - We'll discuss it later
- You can define the content filter levels you want for your models
- Use them later in the API

Quotas

- When creating a new deployment you're assigned a Quota
- Sets the maximum Tokens-Per-Minute (TPM) you can consume
- Per model, per region
- The goal is to avoid loading the OpenAI API
- You can adjust the quota to distribute it between models

Work With Your Data

- Enable GPT models to access organizational data
- For example: GPT will be able to access organizational SQL Server to pull data and include it in the response