

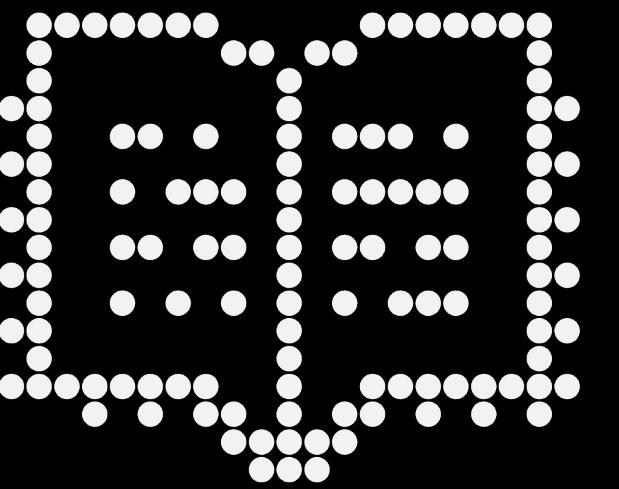
Artificial
Intelligence for
Business

Low Code/No Code

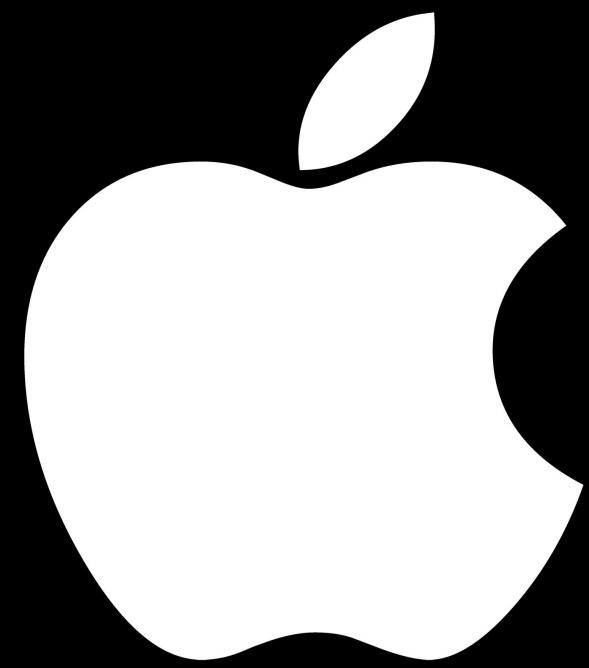
+

Github Copilot

<https://github.com/iportilla/copilot>

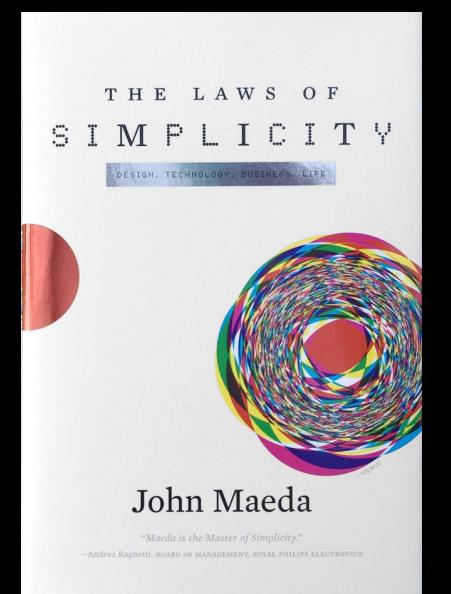


Knowledge makes
everything simpler



Apple limits internal use of AI-powered tools like ChatGPT and GitHub Copilot

Bank of America, Citi, Deutsche Bank, Goldman Sachs, Wells Fargo, JPMorgan, Walmart and Verizon have also restricted access to ChatGPT.



<http://lawsofsimplicity.com/>

- Intros
- ChatGPT 101
- Business Examples
- GitHub Copilot

Intros



Educator, author and keynote speaker, Recognized for my innovative work in data science, robotics and artificial intelligence

<https://www.linkedin.com/in/ivanportilla/>

- Intros
- ChatGPT 101
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Artificial Intelligence

Machine Learning

Deep Learning

Generative AI



Artificial Intelligence
Intelligence demonstrated by machines



Machine Learning
Learn from data



Deep Learning
Model after the human brain (Neural Networks)

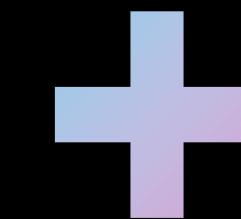


Generative AI
Create new written, visual, and auditory content

MSFT partnership with OpenAI



Ensure that artificial general intelligence (AGI) benefits humanity.



Empower every person and organization on the planet to achieve more

GPT-3

Generate and Understand Text

Codex

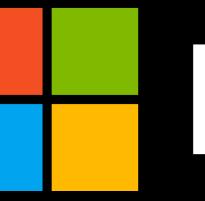
Generate and Understand Code

DALL·E

Generate images from text prompts



OpenAI



Microsoft

Generative AI

GPT-3

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'
```

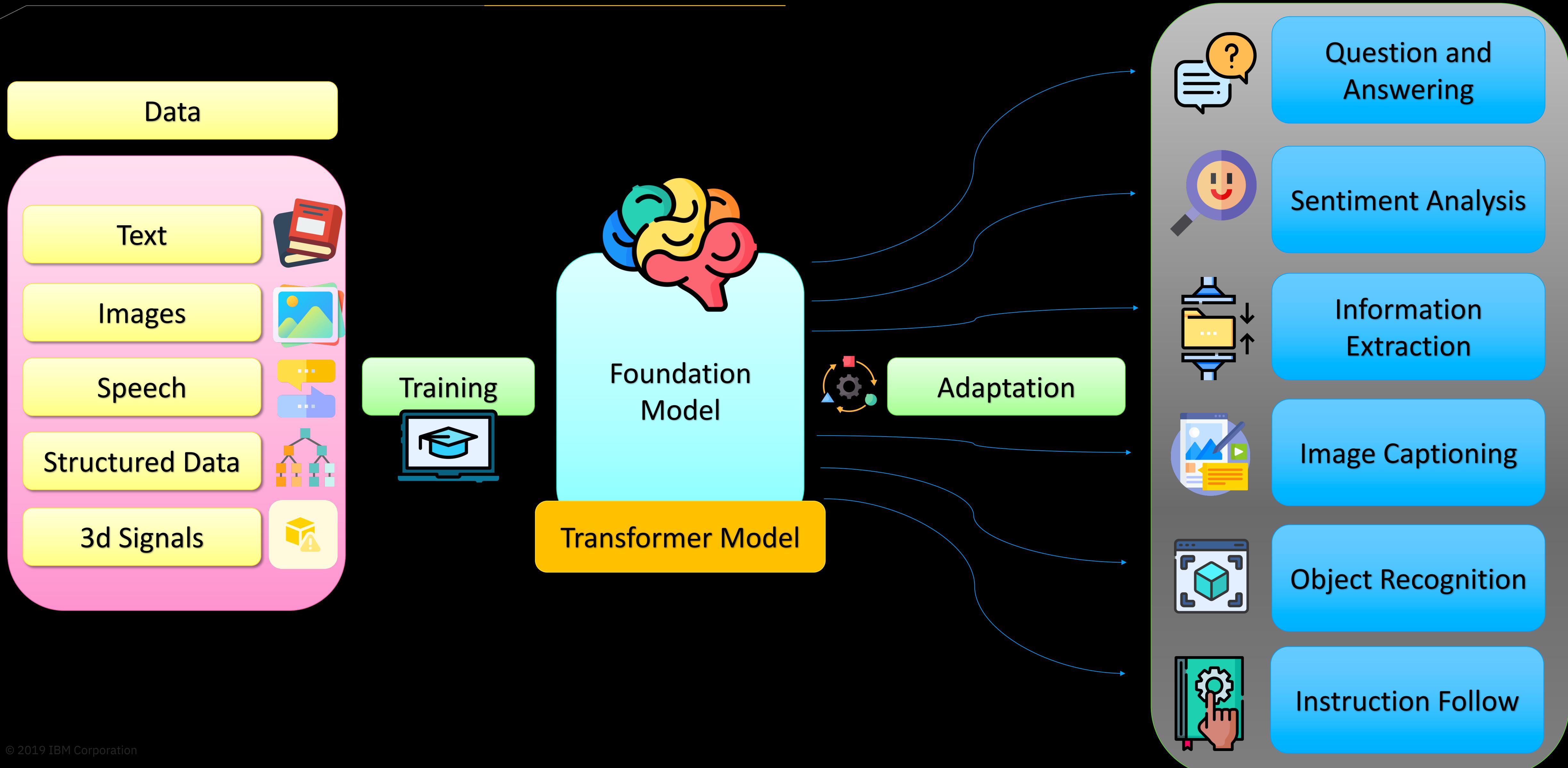
DALL·E

Prompt: A white Siamese cat

Response:



Foundation Models





530B

Megatron-Turing
NLG | 2021

175B

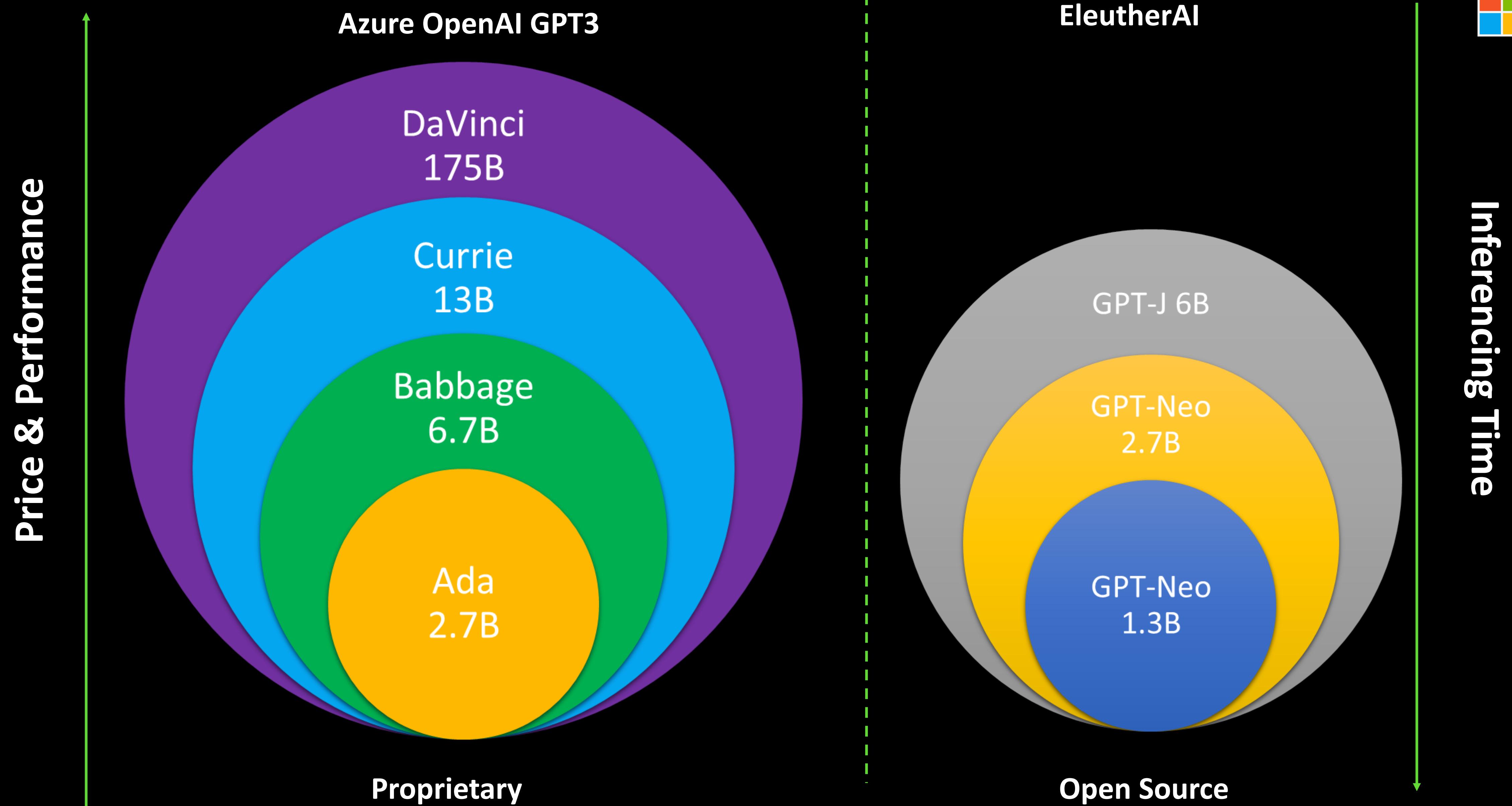
GPT-3 | 2020

17B

Turing-NLG | 2020

340M

BERT-Large | 2018



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Text Classification

Named Entity Recognition (Zero-Shot)

Extract the name and mailing address from this email:

Dear Kaylee,

It was great to talk to you at the seminar. I thought Peter's talk
was quite good.

Thank you for the book. Here's my address 995 Regent Dr,
Boulder, CO 80309

Best,

Marilú

Name: Marilú

Mailing Address: 995 Regent Dr, Boulder, CO 80309

Reason Over Unstructured Text

Question and Answering

On Monday, Microsoft launched an OpenAI service as part of its Azure cloud platform, offering businesses and start-ups the ability to incorporate models like ChatGPT into their own systems. The company has already been building AI tools into many of its consumer products, such as a DALL-E 2 feature in its Bing search engine that can create images based on a text prompt, and the information reported recently that it's working to bring more of them to Microsoft Office as well.

What will Microsoft incorporate in its own systems?

Microsoft plans to incorporate AI tools into its own systems, such as a DALL-E 2 feature in its Bing search engine that can create images based on a text prompt, and the information reported recently that it's working to bring more of them to Microsoft Office as well

Summarization

Extractive vs Abstractive

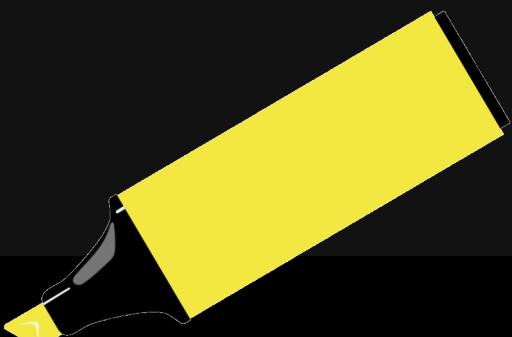
Extractive

Select parts of the original text to form a summary

- Easier
- Restrictive (no paraphrasing)

Peter and Elizabeth took a taxi to attend the night party in the city. While in the party, Elizabeth collapsed and was rushed to the hospital.

Peter and Elizabeth attend party city. Elizabeth rushed hospital



Abstractive (Semantic)

Generates new text using natural language generation techniques

- More difficult
- More flexible (more human)

Peter and Elizabeth took a taxi to attend the night party in the city. While in the party, Elizabeth collapsed and was rushed to the hospital.

Elizabeth was hospitalized after attending a party with Peter.



Prompt Insert

Only DaVinci-002+

Before

These are agenda topics for a customer presentation.

1. Introduction to GPT3

[insert]

10. Conclusion

After

These are agenda topics for a customer presentation.

1. Introduction to GPT3
2. Overview of GPT3 Features
3. Benefits of GPT3
4. GPT3 Use Cases
5. GPT3 Pricing
6. GPT3 Security
7. GPT3 Support
8. GPT3 Integration
9. Q&A Session
10. Conclusion

Completions playground

Only DaVinci-002+

Before

The screenshot shows the Azure AI Studio interface with the 'Completions playground' section selected. On the left, there's a sidebar with 'Playground' selected. The main area has two dropdown menus: 'Deployments' set to 'text-davinci-003' and 'Examples' set to 'Natural language to Python'. Below these is a text input field containing a completion prompt. A note says 'The example Natural language to Python, works best with model code-davinci-002.' At the bottom are buttons for 'Generate', 'Undo', 'Regenerate', and 'Tokens: 47'.

```
# Write a python function to reverse a string. The function should be an optimal solution in terms of time and space complexity.
# Example input to the function: abcd123
# Example output to the function: 321dcba
```

After

The screenshot shows the same interface after an update. The 'Deployments' dropdown now shows 'text-davinci-003' and the 'Examples' dropdown shows 'Natural language to Python'. A note indicates 'The example Natural language to Python, works best with model code-davinci-002.' Below the examples, the completion prompt is displayed with syntax highlighting for the Python code. The code itself is shown in a code editor-like view at the bottom.

```
# Write a python function to reverse a string. The function should be an optimal solution in terms of time and space complexity.
# Example input to the function: abcd123
# Example output to the function: 321dcba

def reverse_string(string):
    return string[::-1]

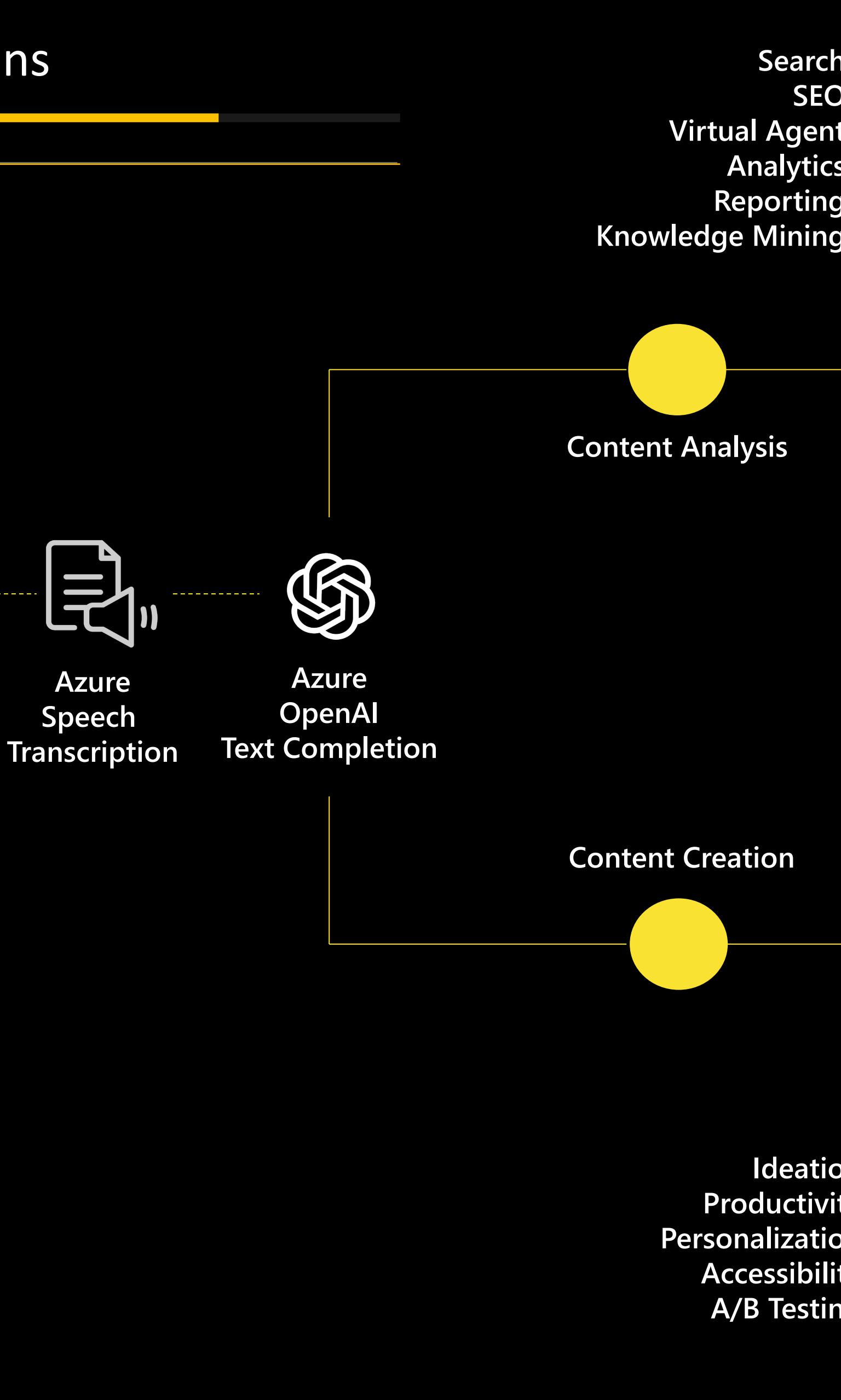
2 import os
3 import openai
4 openai.api_type = "azure"
5 openai.api_base = "https://k12-ai-openai.openai.azure.com/"
6 openai.api_version = "2022-12-01"
7 openai.api_key = os.getenv("OPENAI_API_KEY")
8
9 response = openai.Completion.create(
10     engine="text-davinci-003",
11     prompt="# Write a python function to reverse a string. The function should be an optimal solution in terms of time and space complexity.\n# Example input to the function: abcd123\n# Example output to the function: 321dcba\n\ndef reverse_string(string):\n    return string[::-1]",
```

Media Example

News Analyses & Article Creations



News Broadcast (Global Warming)



Topic Classification

Global warming, Deforestation, Carbon footprint

Entity Extraction

Organizations: IPCC, UNFCCC, Green Peace
Geography: Canada, USA

Key Word Extraction

Human activities, fossil fuels, earth atmosphere

Question and Answer

What is the Intergovernmental Panel on Climate Change (IPCC)?

The IPCC is an international organization that studies climate change and the effectiveness ...

Video summarization

The article discusses about global warming and its effects on the Earth's atmosphere, wildlife, and human communities. It states that the primary cause of global warming is

News article generation (or blogs, social media)

Global warming is the gradual increase in the overall temperature of the Earth's atmosphere, primarily caused ...

Script Generation

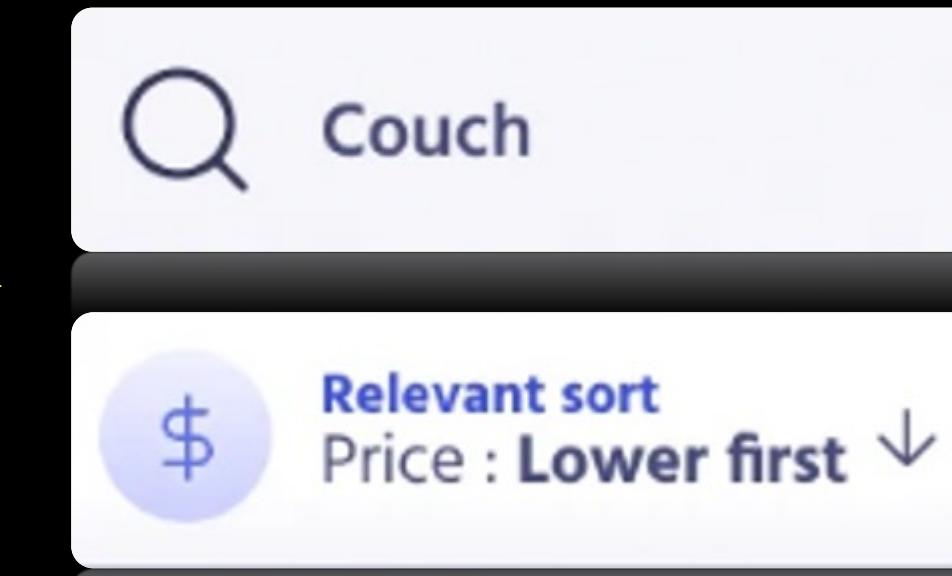
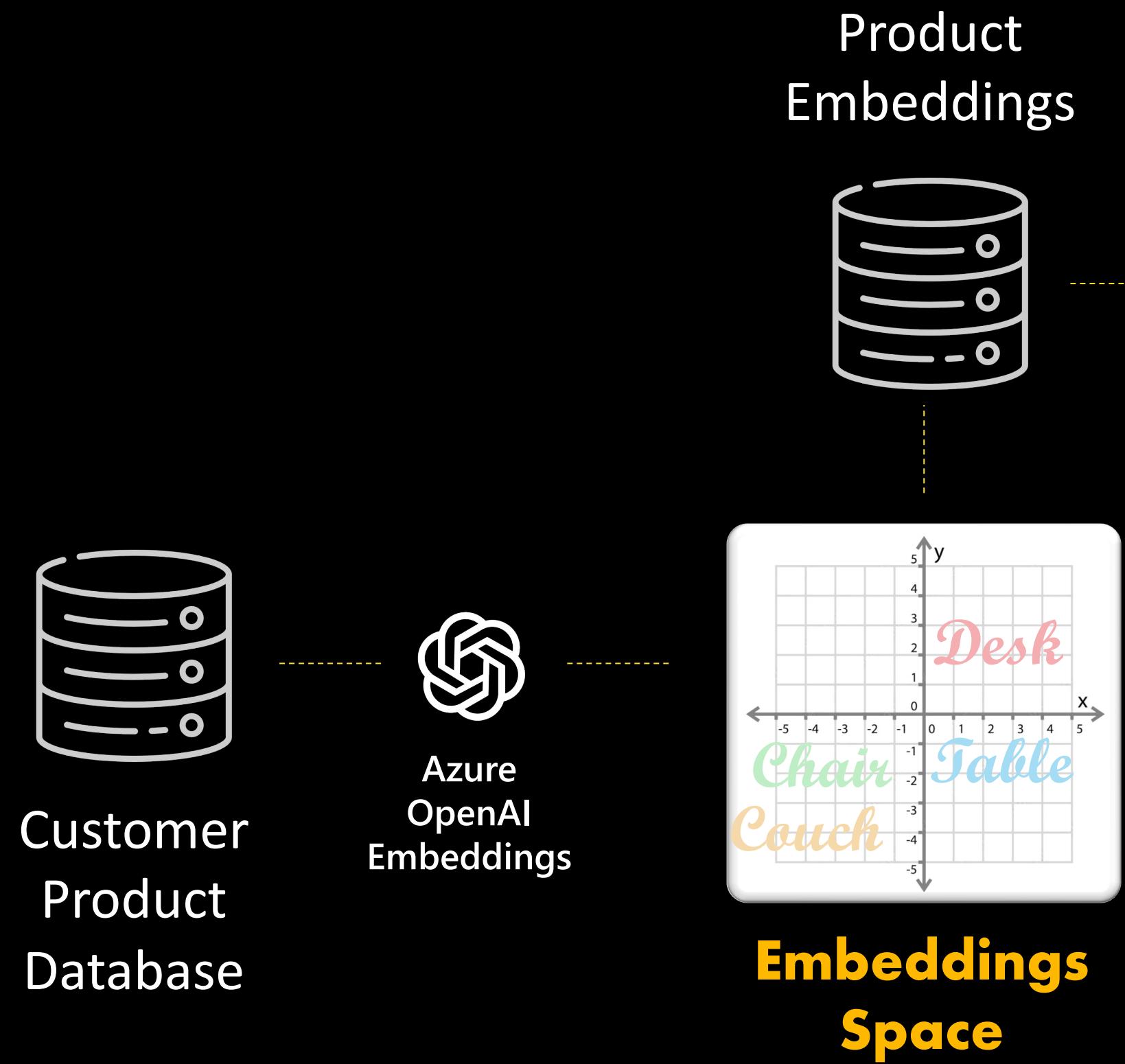
Act 1: The show opens with a shot of a beautiful coastal town
Act 2: As the town struggles to cope with the crisis ...

Personalized Content generation (or Advertising)

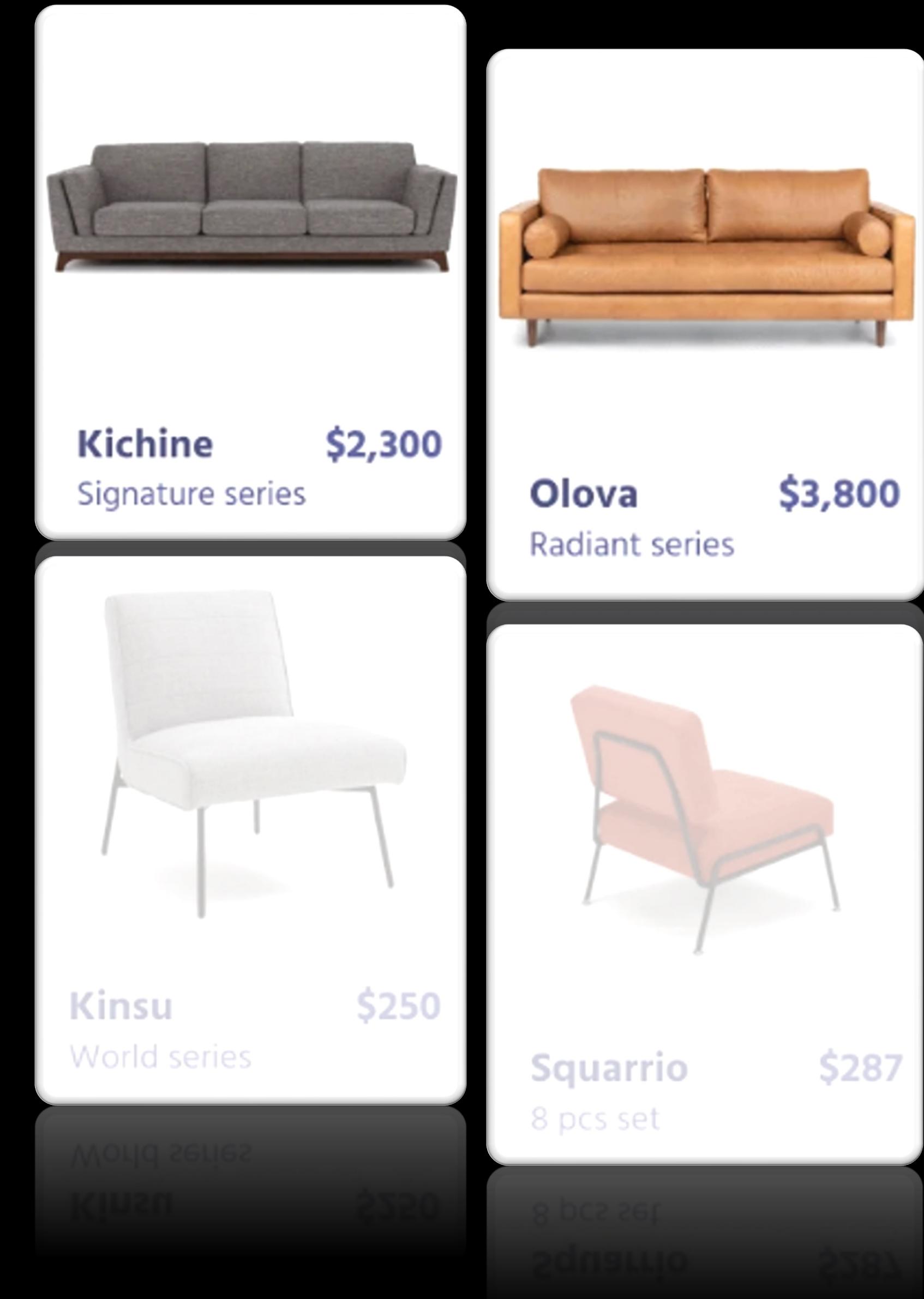
Simon, as someone passionate about global warming, you are aware of the urgent threat it poses to our planet ...

Retail Example

Similarity Search



Similarity Search



- Intros
- ChatGPT 101
- Business Examples
- GitHub Copilot

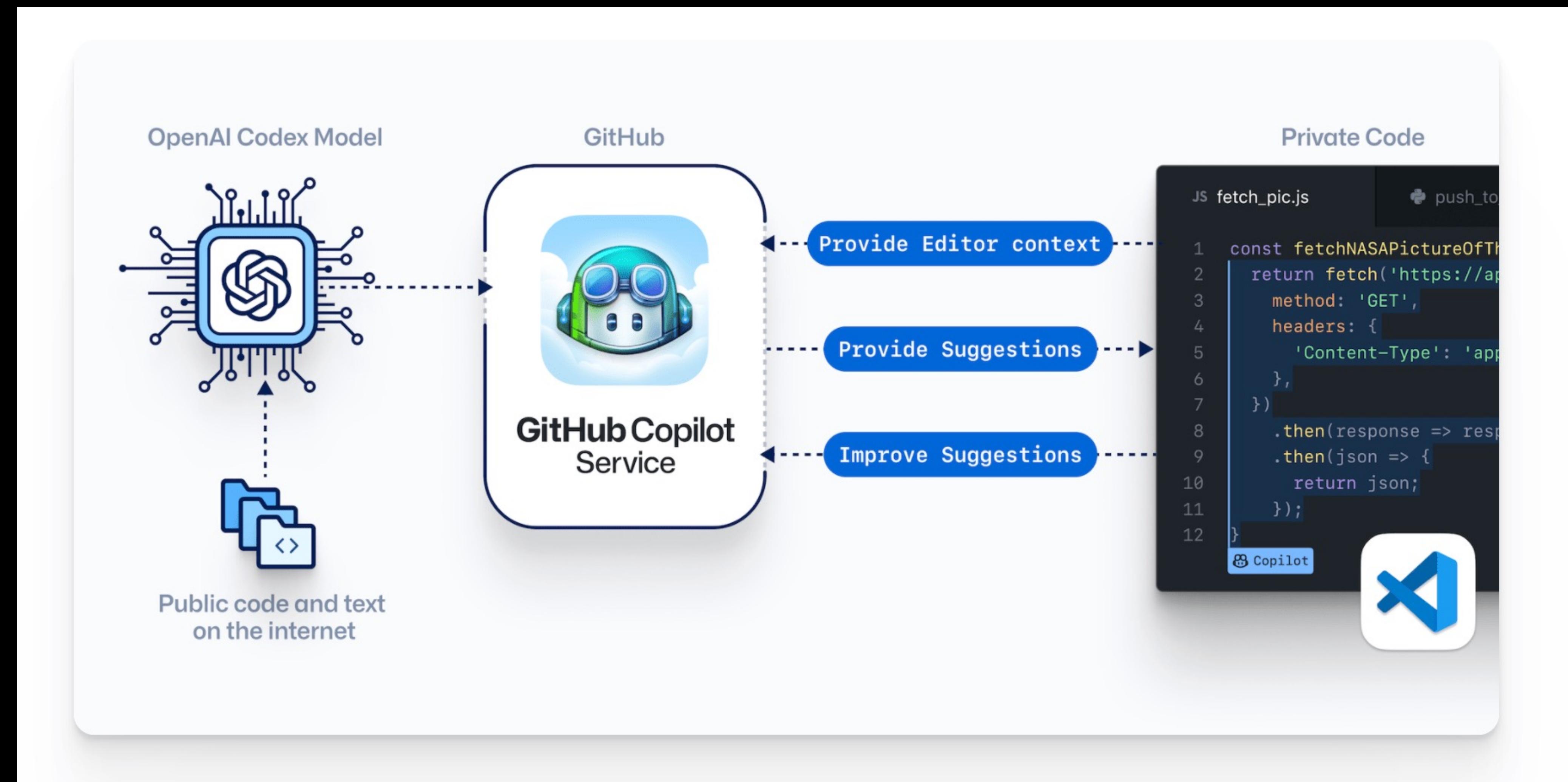




yikes.

Artificial
Intelligence
for Business

GitHub Copilot



<https://nira.com/github-copilot/>

GitHub Copilot

An AI-powered coding assistant

Uses ML models for code suggestions & completions

Integrates with most code editors

Copilot Key Features

- Intelligent Code Suggestions
- Code Completions
- Natural Language Support
- Programming Language Support

<https://docs.github.com/en/copilot/quickstart>

How does it work?

- Built on OpenAI's Codex, a powerful LLM trained on diverse code repositories.
- Analyzes the code context, comments, & other inputs to generate relevant code suggestions.
- Learns from user feedback and continuously improves over time.

<https://docs.github.com/en/copilot/quickstart>

Use Cases & Benefits

- Collaboration
- Learning Tool
- Efficiency and Productivity
- Code Quality

<https://docs.github.com/en/copilot/quickstart>

Concerns & Challenges

- Intellectual Property: Copilot suggests code based on the patterns **it has learned**
- Bias and Security: GitHub and OpenAI are working to **address potential biases and security concerns** through rigorous testing and user feedback.

<https://docs.github.com/en/copilot/quickstart>

Getting Started

- ✓ Installation
- ✓ Demonstration
- ✓ Useful Shortcuts

<https://docs.github.com/en/copilot/quickstart>

Tips & Best Practices

- Set Expectations: Critically evaluate and understand the code suggestions.
- User Feedback: Provide feedback to GitHub and OpenAI
- Continuous Learning: Explore and experiment with Copilot to fully leverage its potential

<https://docs.github.com/en/copilot/quickstart>

Exercise

Thank you

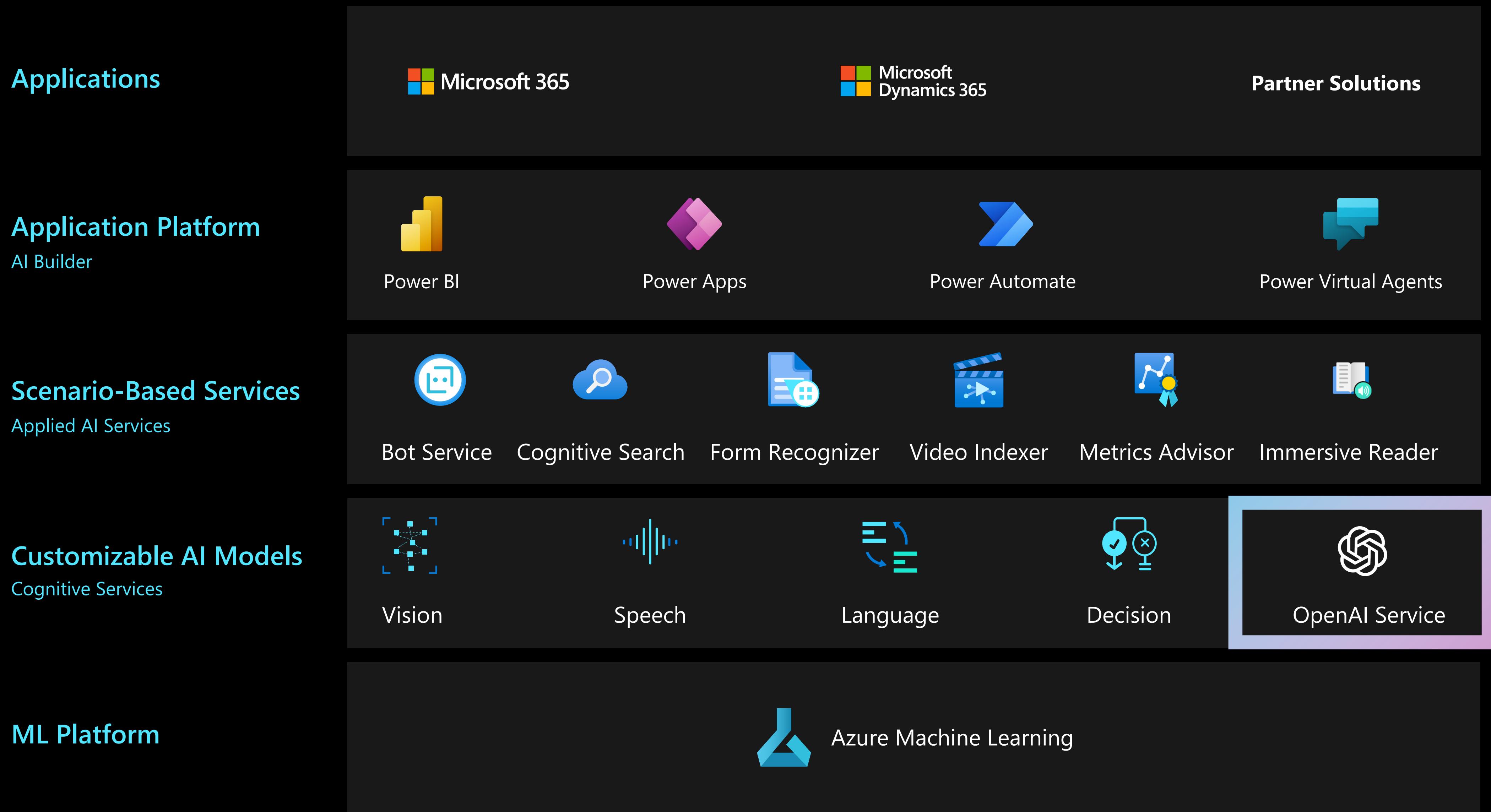


portilla@gmail.com

<https://github.com/jiportilla/giveback/>

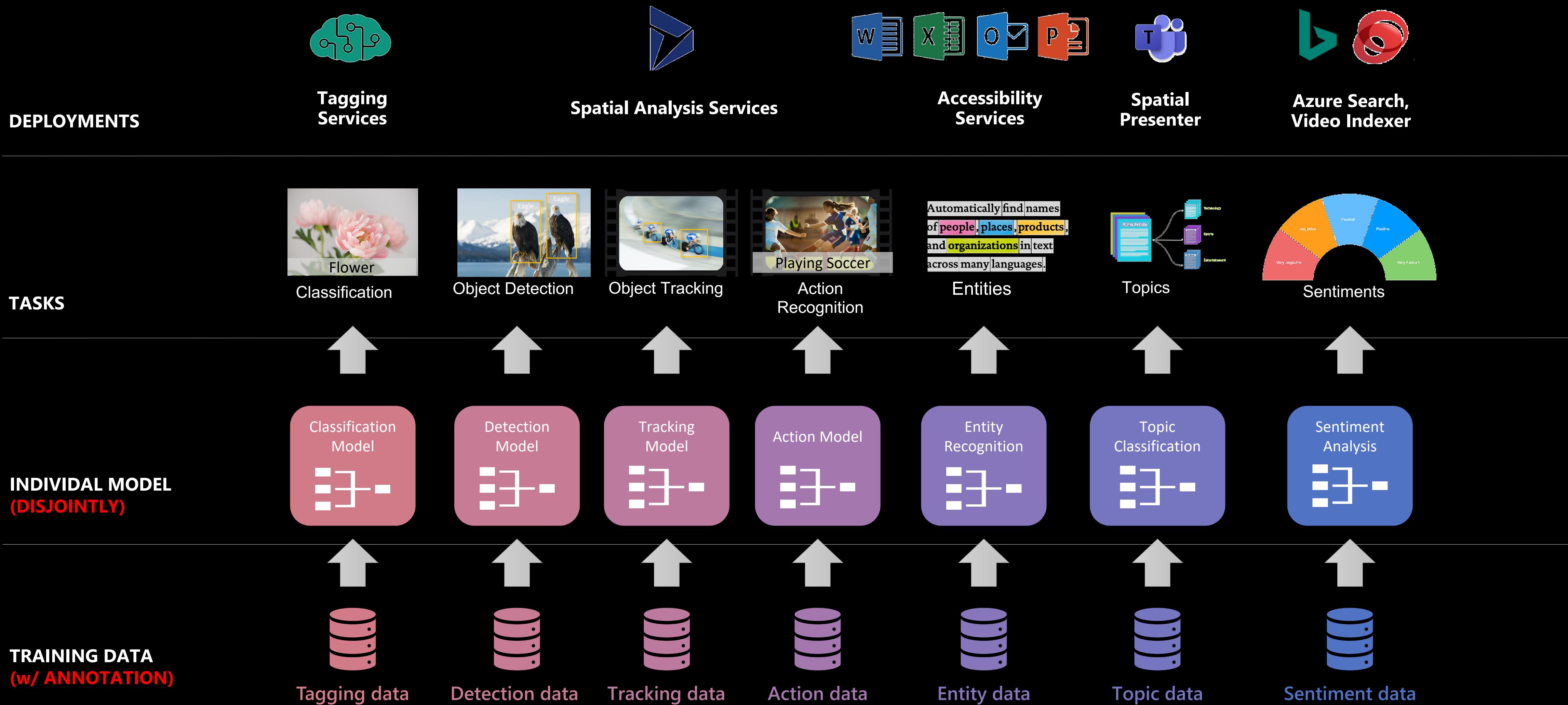
Backup

Azure AI



Traditional model development

High cost & slow deployment - Each service is trained disjointly



175B

GPT-3 | 2020

17B

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340M

BERT-Large | 2018



Microsoft



OpenAI



Microsoft