

Generative AI for No-Code Makers

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Agenda

- Why AI and Why Now?
 - Brief history of AI
 - AI Landscape
 - Generative AI Landscape
- Large Language Models
- OpenAI + Microsoft
- AI Builder + Teams
- Demo
- Questions

Brief History of AI

Artificial Intelligence

Machine Learning

Deep Learning

Generative
AI



Artificial Intelligence

The field of computer science that seeks to create intelligent machines that can replicate or exceed human intelligence



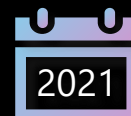
Machine Learning

Subset of AI that enables machines to learn from existing data and improve upon that data to make decisions or predictions



Deep Learning

A machine learning technique in which layers of neural networks are used to process data and make decisions



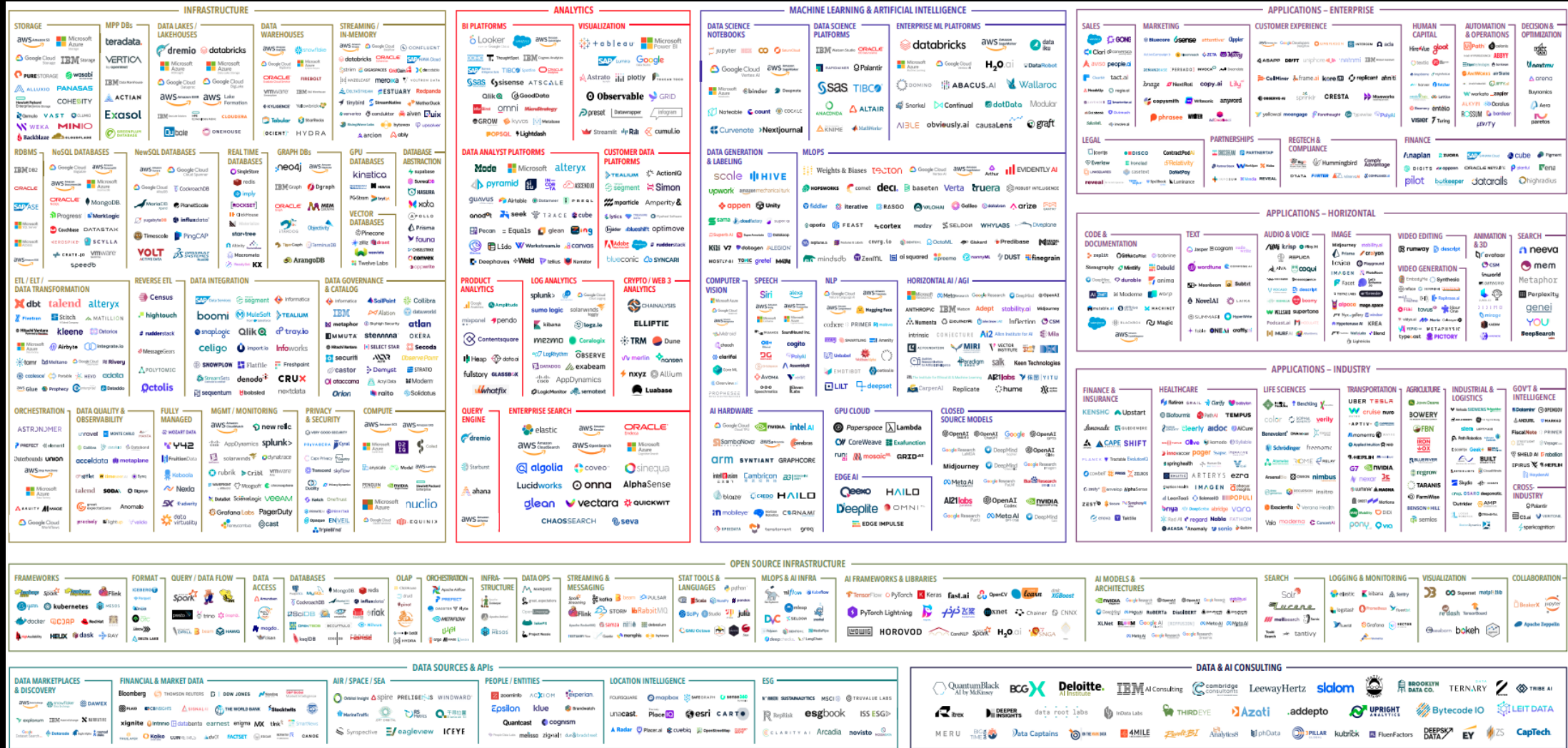
Generative AI

Create new written, visual, and auditory content given prompts or existing data

Why do we need to discuss this?

- Artificial Intelligence is changing the way we live and work
 - Netflix, Spotify, Instagram, Word, Excel, PowerPoint and much more...
- Almost every industry is infused by Artificial Intelligence
 - Travel
 - Retail
 - Government Services
 - Utilities
 - ...

AI Landscape



Generative AI

- Genie you wish you had in your pocket
- AI to create new data
 - Text
 - Audio
 - Video
 - Images
- Can write emails, articles, line of code and so on..

Generative AI Landscape

AI 50 2023

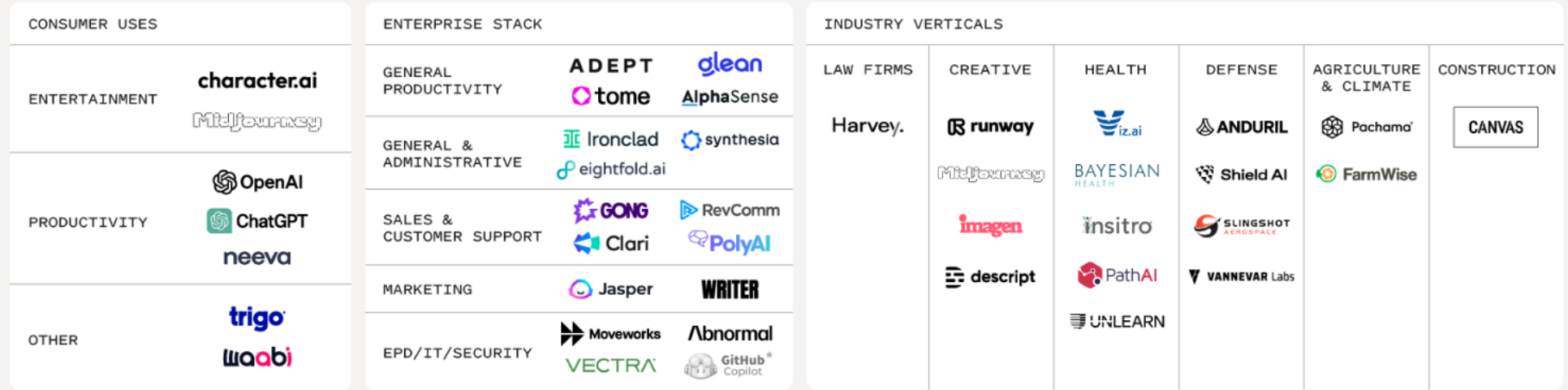
VISUALIZED

Forbes

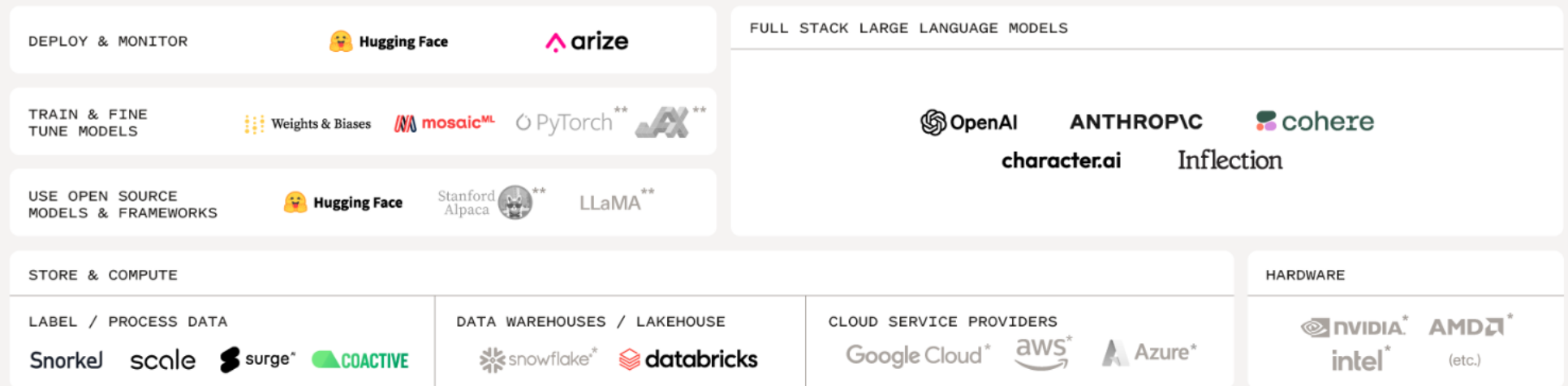
SEQUOIA

MERITECH

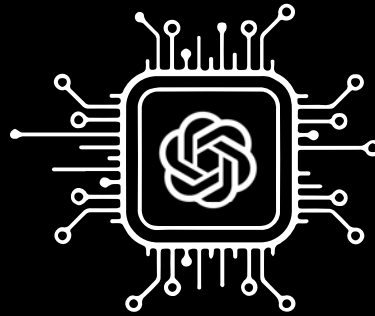
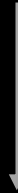
Apps



Infrastructure



Training Data



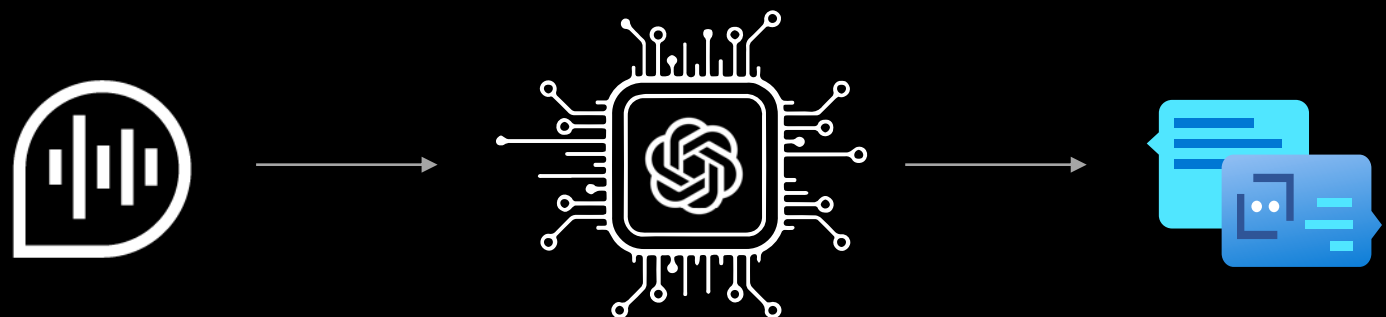
Prompt

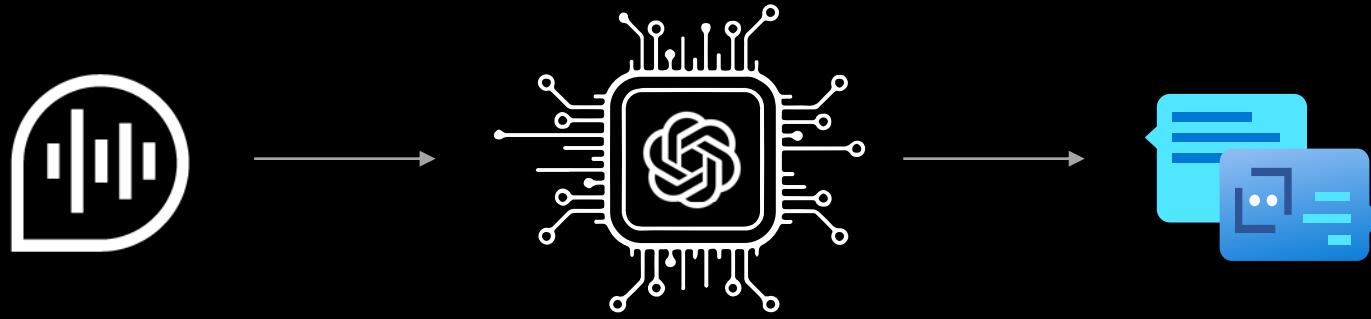
Model

Completion

“The Capital of
Australia is”

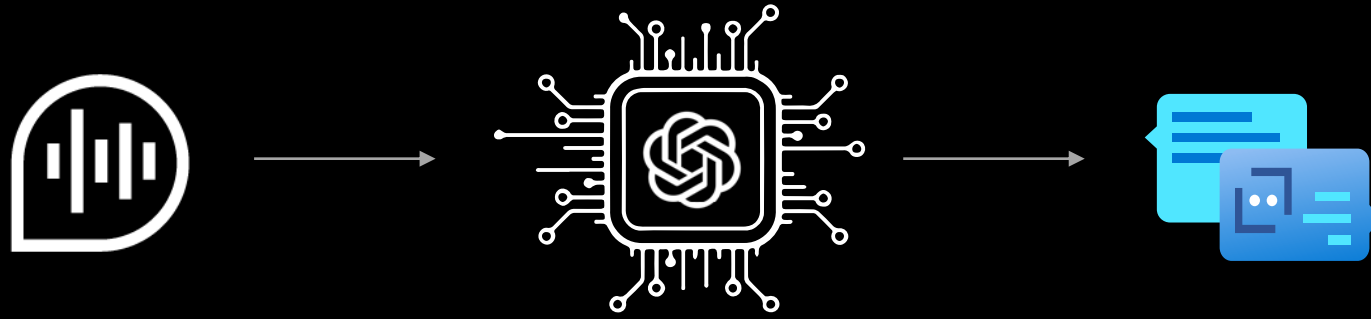
“ Canberra”





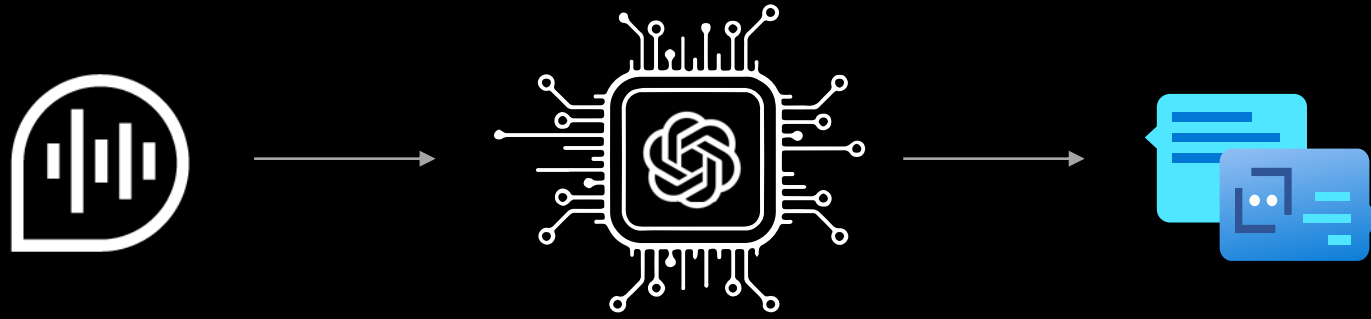
“I climbed the mango tree and
picked a”

“ mango.”



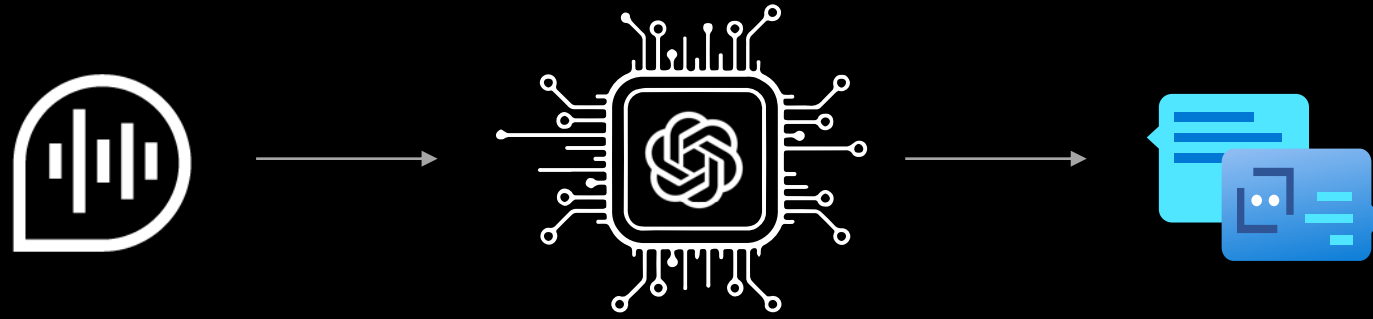
“I climbed the tree and picked a”

“ mango.”



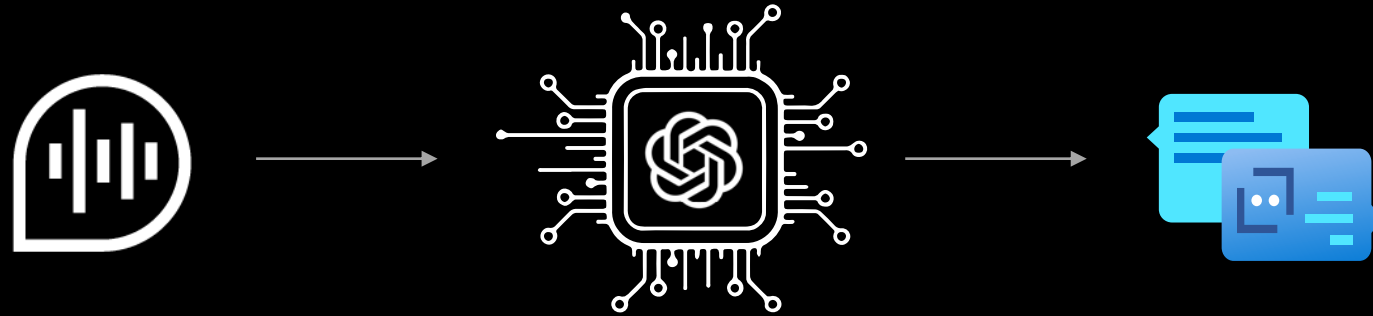
“I climbed the tree and picked a”

“ few fruits.”



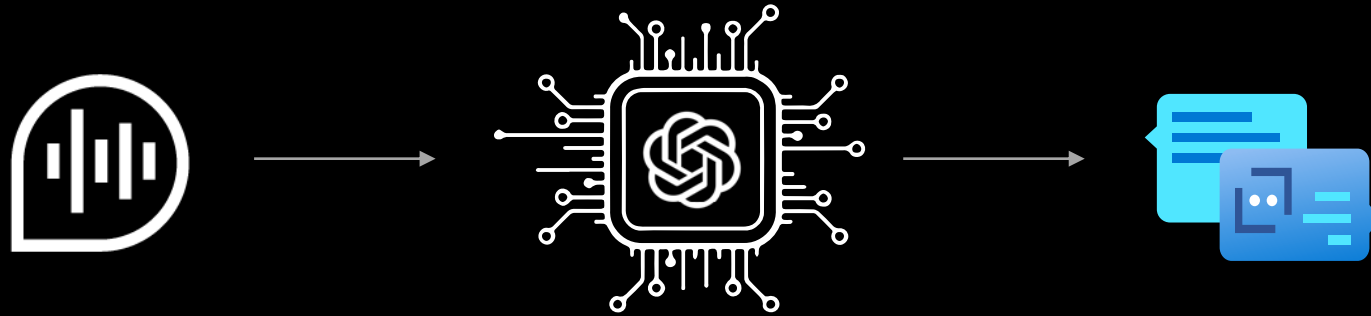
“I climbed the tree and picked a”

“ pear.”



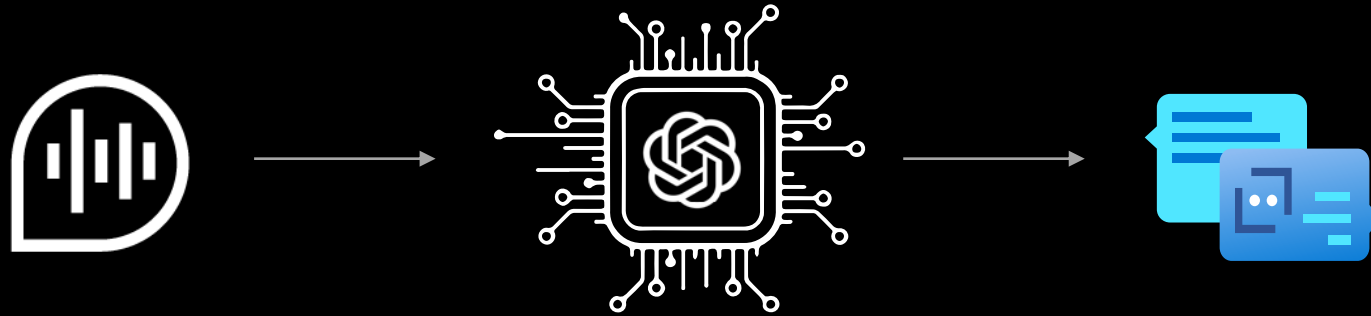
“I climbed the tree and picked a”

“ few of the plums, and I must
say they were the sweetest plums
I have ever tasted.”



“When did Queen Elizabeth II
die?”

“Queen Elizabeth II is still
alive and well and has been the
Queen of the United Kingdom since
1952.”

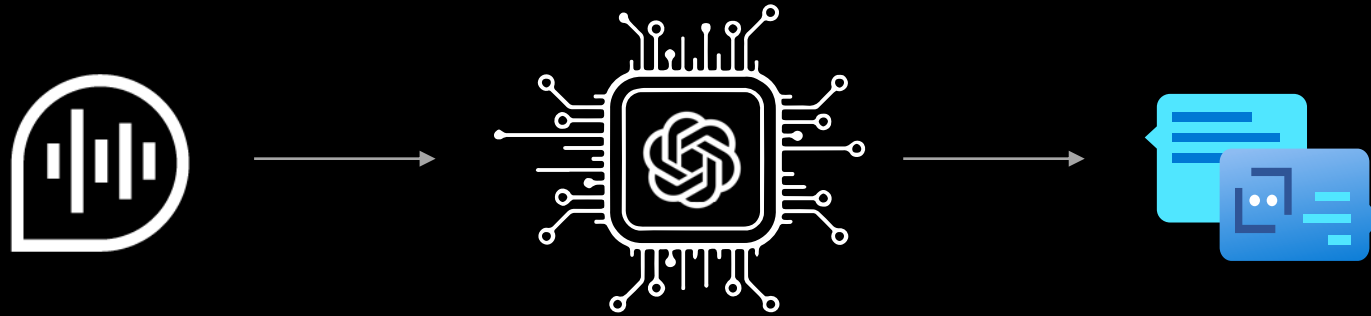


“Write a biography of Lilithia Starlight, inventor of the lit now. Include references.”

“Lilithia Starlight is a renowned inventor and entrepreneur known for her creation of the Lit Now, a revolutionary lighting system that has transformed the way people illuminate their homes and workplaces. ...

References:

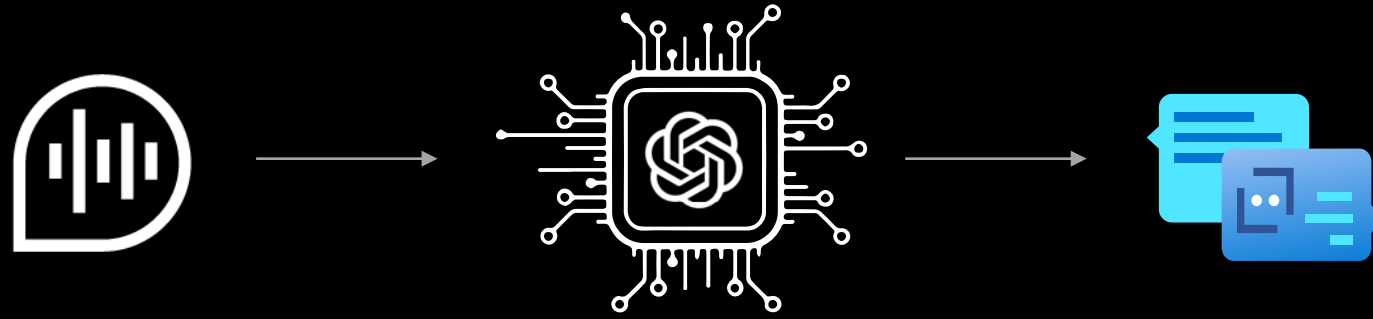
- 1.<https://www.forbes.com/sites/forbestechcouncil/2018/06/26/lilithia-starlight-from-invention-to-innovation/?sh=7d2c3f3d7f45>
- 2.<https://www.nytimes.com/2019/06/18/business/lilithia-starlight-led-lights.html>”



“Hi, my name is Arafat. Who are
you?”

“

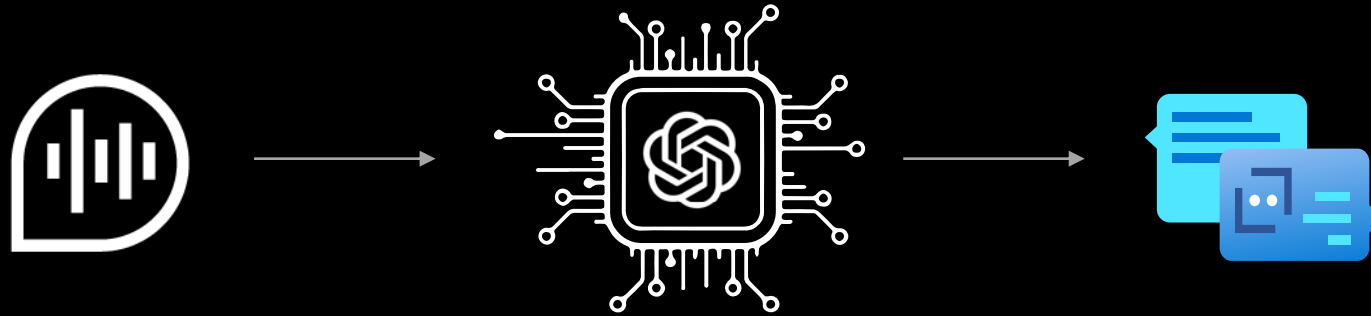
Hi Arafat, my name is John. Nice
to meet you.”



“You can give me a nickname, if
you like.”

“

Sure! How about ‘Sparky’?”



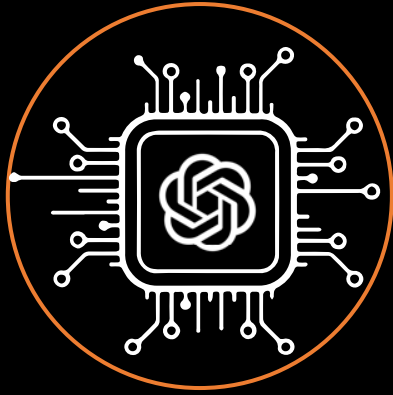
“HUMAN: Hi, my name is Arafat.
Who are you?”

AGENT: Hi Arafat, my name is
John. Nice to meet you.

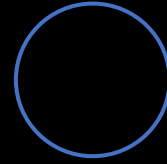
HUMAN: You can give me a
nickname, if you like.

AGENT:”

“ Sure, how about Ara?”

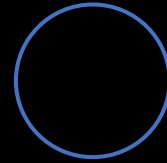


Foundational Generative AI models can:



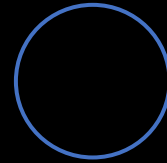
Generate text, images and code

Different models are trained on different corpora, depending on the application.



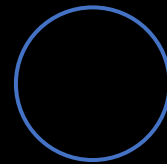
Generate “humanlike” output

What is a likely continuation of the prompt, given the training data?



Provide information

The continuation is likely to be similar to text frequently represented in the training data.

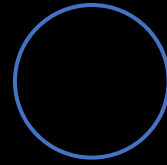


Create novel content

“Creative” works: Text, images and code not contained in the training data. Also: Translations.

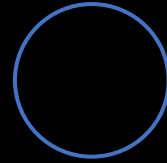


Foundational Generative AI models are not:



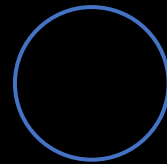
Intelligent

It's just a predictive system, designed to give a likely continuation of the prompt given the training data.



Deterministic

Run the same prompt. Get back a different response (probably).

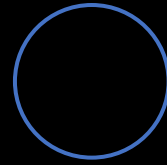


• **Grounded**

They can “hallucinate” “facts” and confidently assert them to be true.

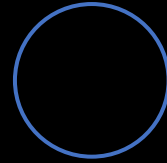


Foundational Generative AI models can not:



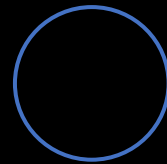
Know Everything

The model doesn't contain verbatim documents. It's just "a blurry JPEG"¹ of its training data.



Learn

The model is fixed at the time of its training. The only source of new information is the prompt.



Act

Still constrained by an extensive set of human-crafted guardrails (prompts). Update knowledge in real-time (for now).



*Ensure that artificial
general intelligence (AGI)
benefits humanity*



*Empower every person and
organization on the planet
to achieve more*

GPT-3.5 and GPT-4

Text

ChatGPT

Conversation

Codex

Code

DALL·E 2

Images

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



Azure OpenAI
Service

ML Platform



Azure Machine Learning



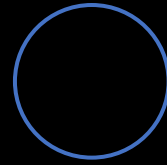
Business
Users



Developers &
Data Scientists

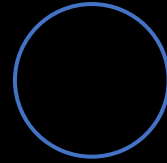


Microsoft's No-code AI Capability



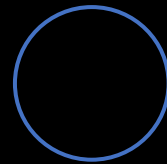
Part of the Power Platform Family

Natively integrated with Power Automate and Power Apps



Pre-trained models

Entity Extraction, Language detection, Sentiment Analysis, Text Translation, Receipt Processing and Azure OpenAI Service (Preview)

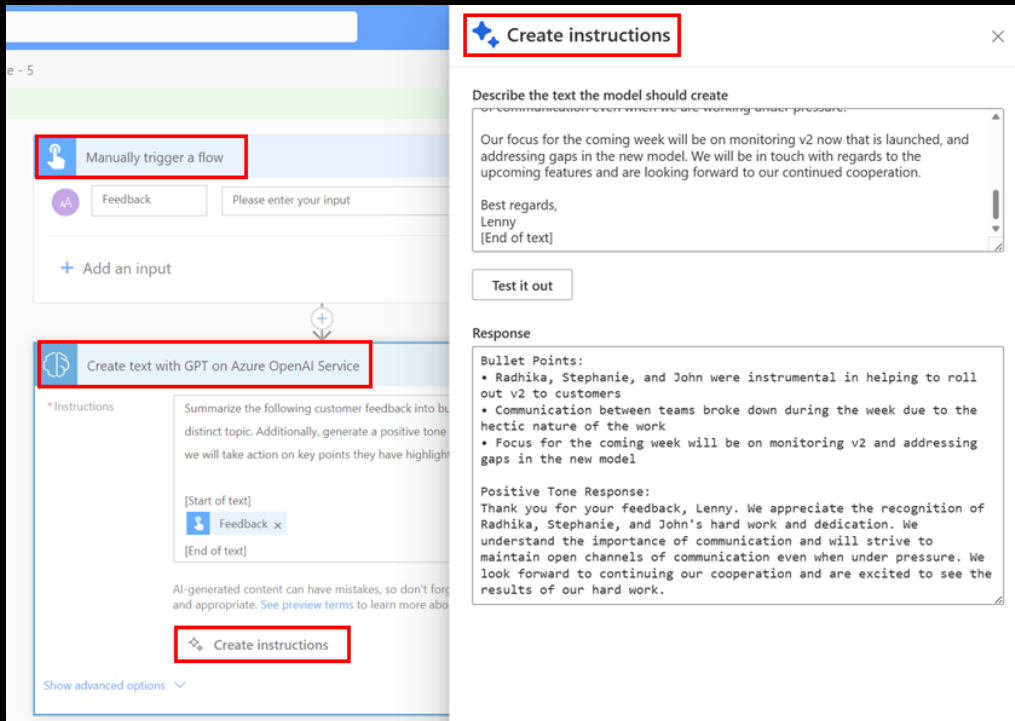


Custom models

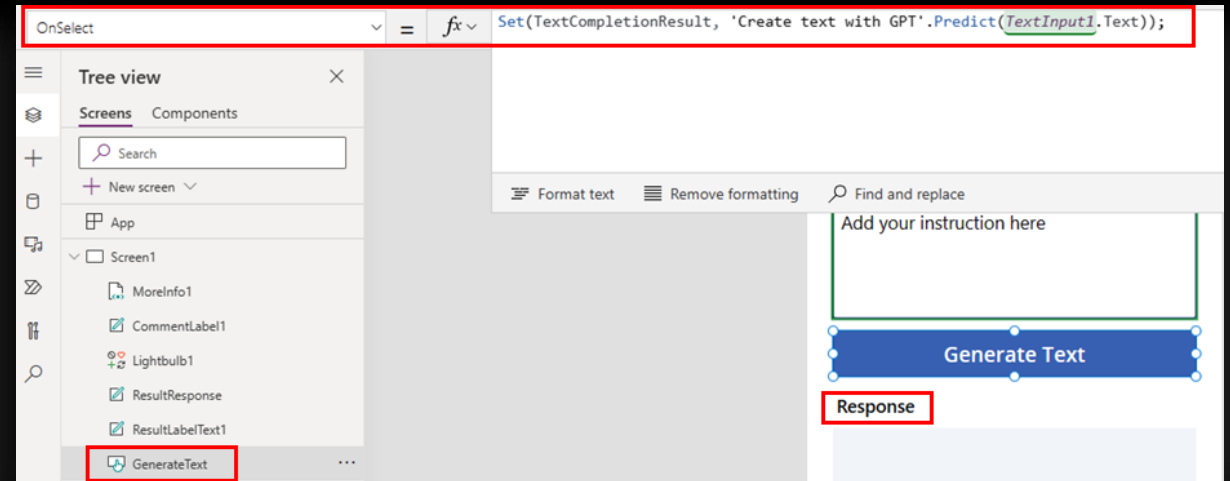
Prediction, Classification, Object detection, Document processing and BYO Azure ML models

AI Builder (Azure OpenAI Service)

Power Automate



Power Apps



What business scenarios can this unlock?

Sentiment
Analysis

Translation

Maker Tutorials

Text Classification

Opinion Mining

Conversational
agent over data

Content
recommendation

Content
generation

Summarisation

Automated
customer service

Document
clustering

Information
extraction

...

Azure OpenAI Service for 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



Best Practices for Prompt Engineering

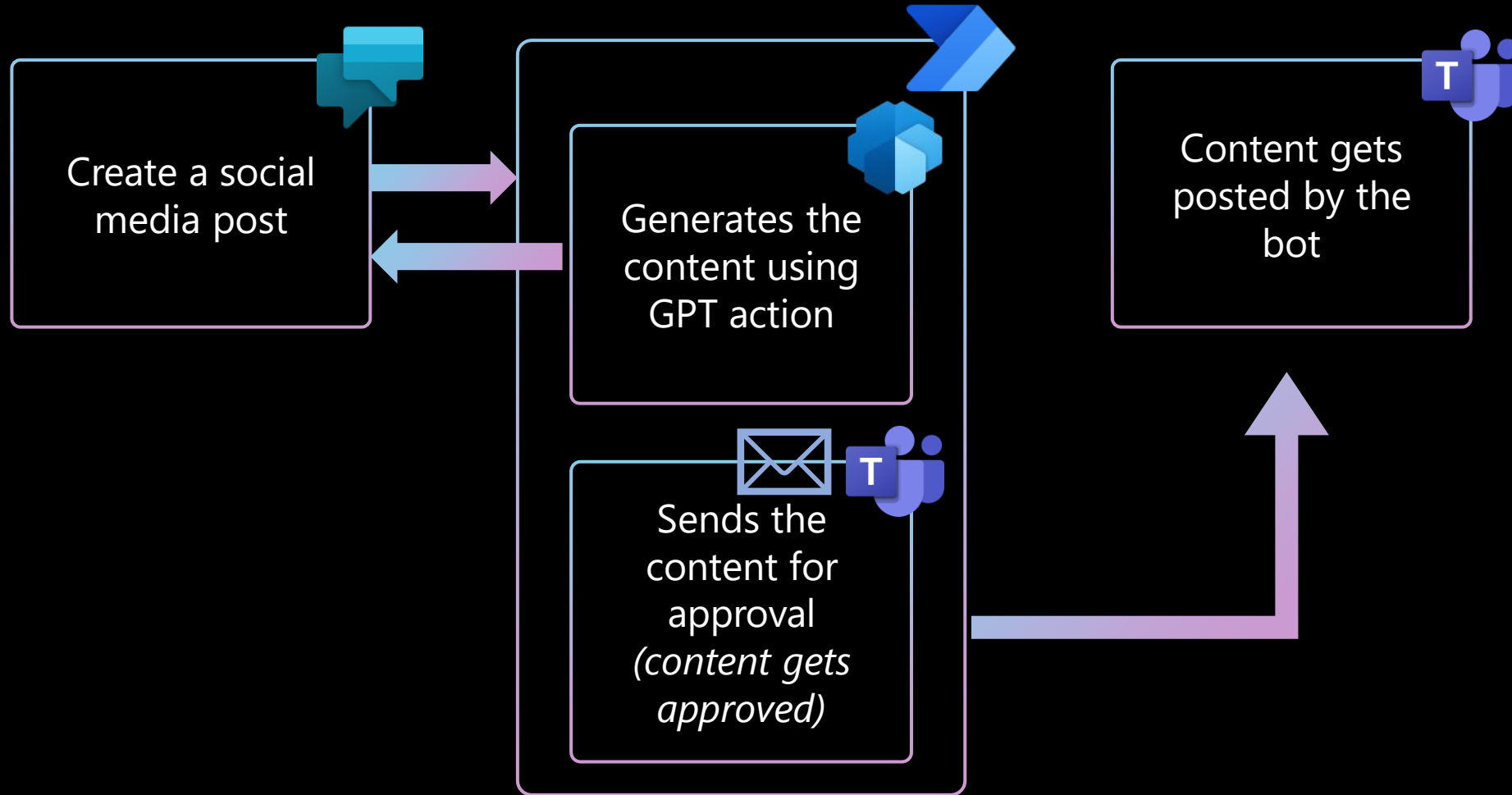
- Be clearly descriptive and specific
 - You may ask for a structured output
 - JSON / HTML etc.
 - Evaluate if the conditions are satisfied
 - Assumptions required to do this task
- Be Iterative
- Sequence matters, set goal before context
- Give model an "out"..
 - Leave a room of unknown or not found..
- Improve your prompts with a few shot examples
 - Zero-shot, one-shot and few shot learning

Zero-shot, one shot and few shot learning

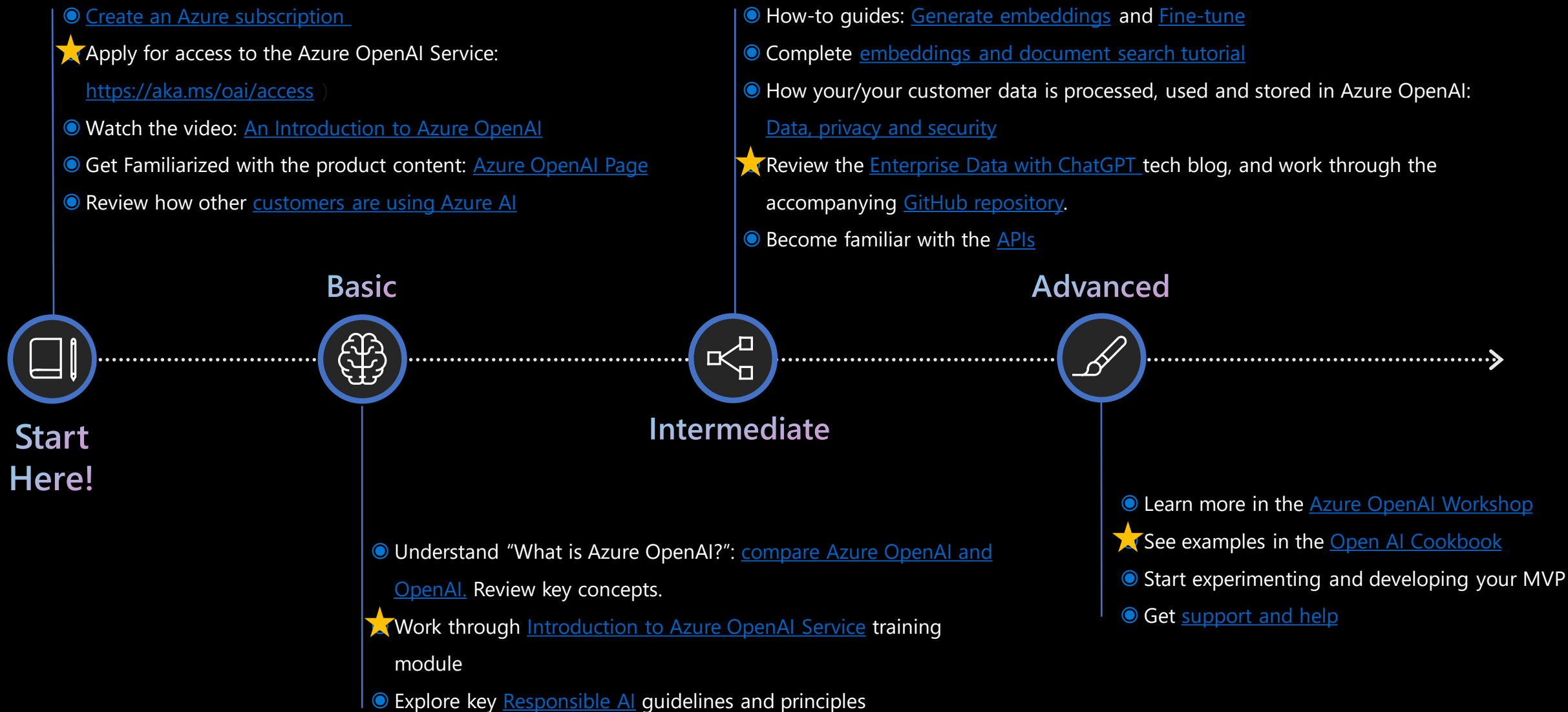
- Zero-shot learning
 - With zero-shot learning, the AI model must generate outputs or solve tasks without having seen any examples of the specific task during training.
- One-shot learning
 - In this approach, the AI model learns to recognize or generate new content based on just one example.
- Few shot learning
 - This technique involves training the AI model with a small number of examples (usually less than 10).

Demo

Handyman Services



Azure OpenAI Service Learning Guide



Questions

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arafattehsin.com/blog