OpenAI | 10 DOWNING STREET LONDON SW1A 2AA

July 2023 Armoury Session
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**Solutions, EMEA
OpenAI**

OpenAI

Objective

What we'll cover

- Who OpenAI are
- What our models are and how you can use them
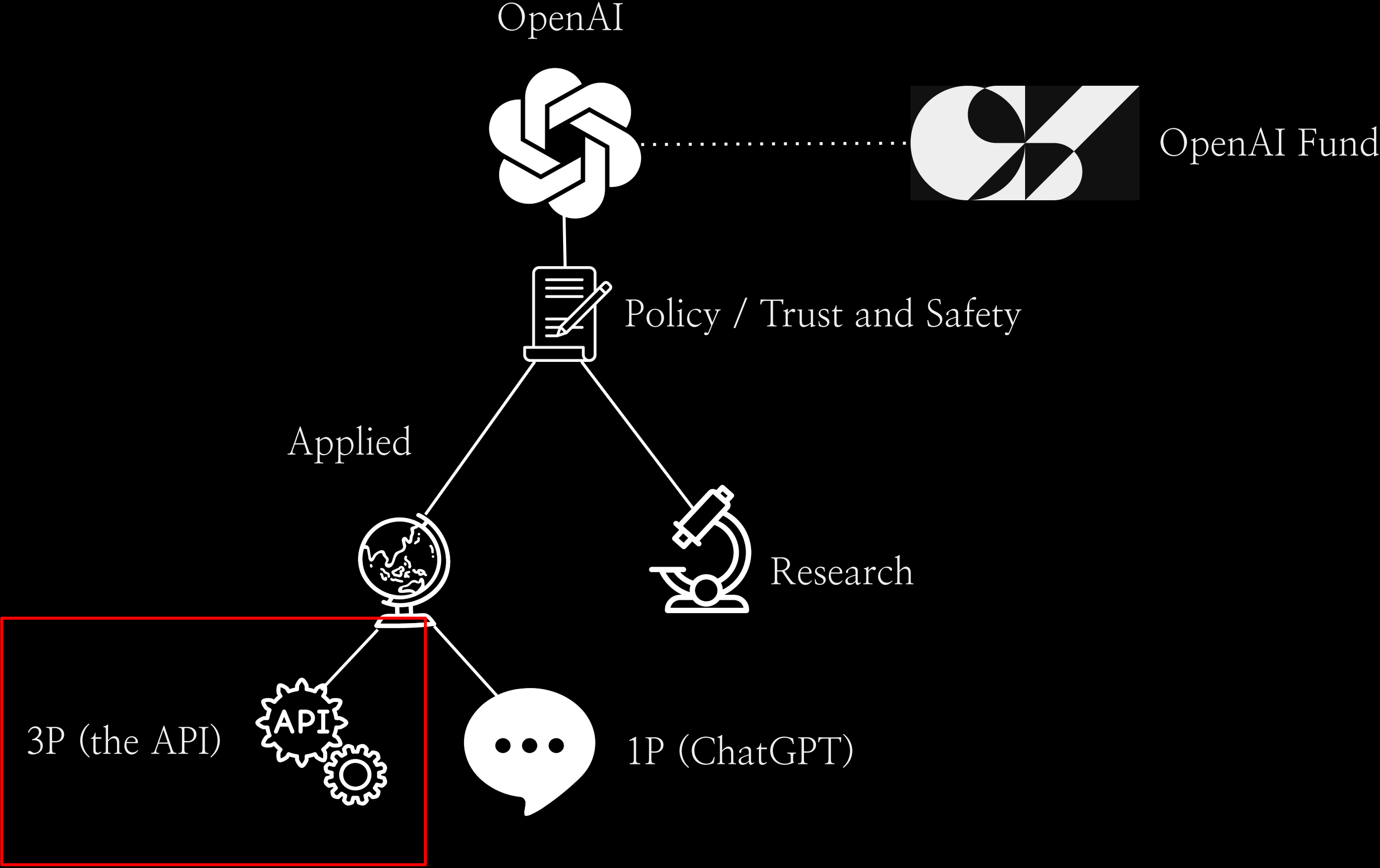- Deep dive on function calling to use external services with the OpenAI API
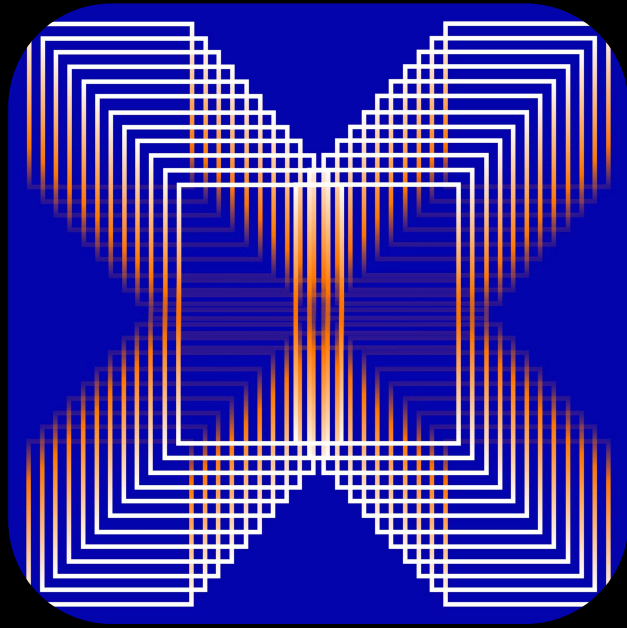
What you'll leave with

- Knowledge of the models you have to work with
- How you can use them and resources to build with our API
- A base understanding for how to use function calling with our API

OpenAI is one of the world's pre-eminent research and technology deployment companies.

OpenAI's mission is to ensure that artificial general intelligence (AGI) — by which we mean highly autonomous systems that outperform humans at most economically valuable work — benefits all of humanity.

OpenAI

OpenAI Fund

Policy / Trust and Safety

Applied

Research

3P (the API)

1P (ChatGPT)

GPT-4

Text → Text

Embeddings

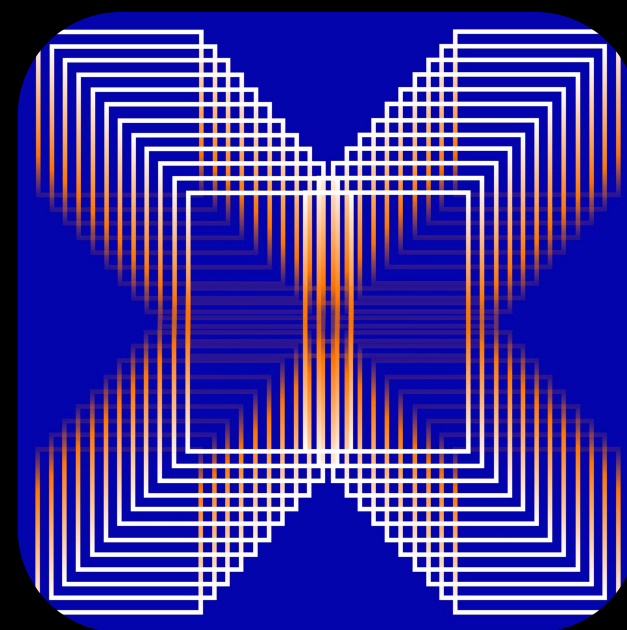Search

DALL·E

Text → Image

Whisper

Speech → Text

ChatGPT

Conversation

GPT-4

Text → Text

Prompt Engineering

- GPT has a lot of knowledge, but it doesn't know everything
- With prompt engineering, you can provide it the knowledge it needs to solve a task
- Think of the model like a very qualified Master's student - the more clear you ask it to do something, the better the performance
- Components of a good prompt:
  - Clear and detailed
    - Did I accurately describe what I want the model to do?
  - Structured
    - Did I structure my prompt so it's easy to read and understand?
  - Sets expectations
    - Did I tell the model how I'd like the response?
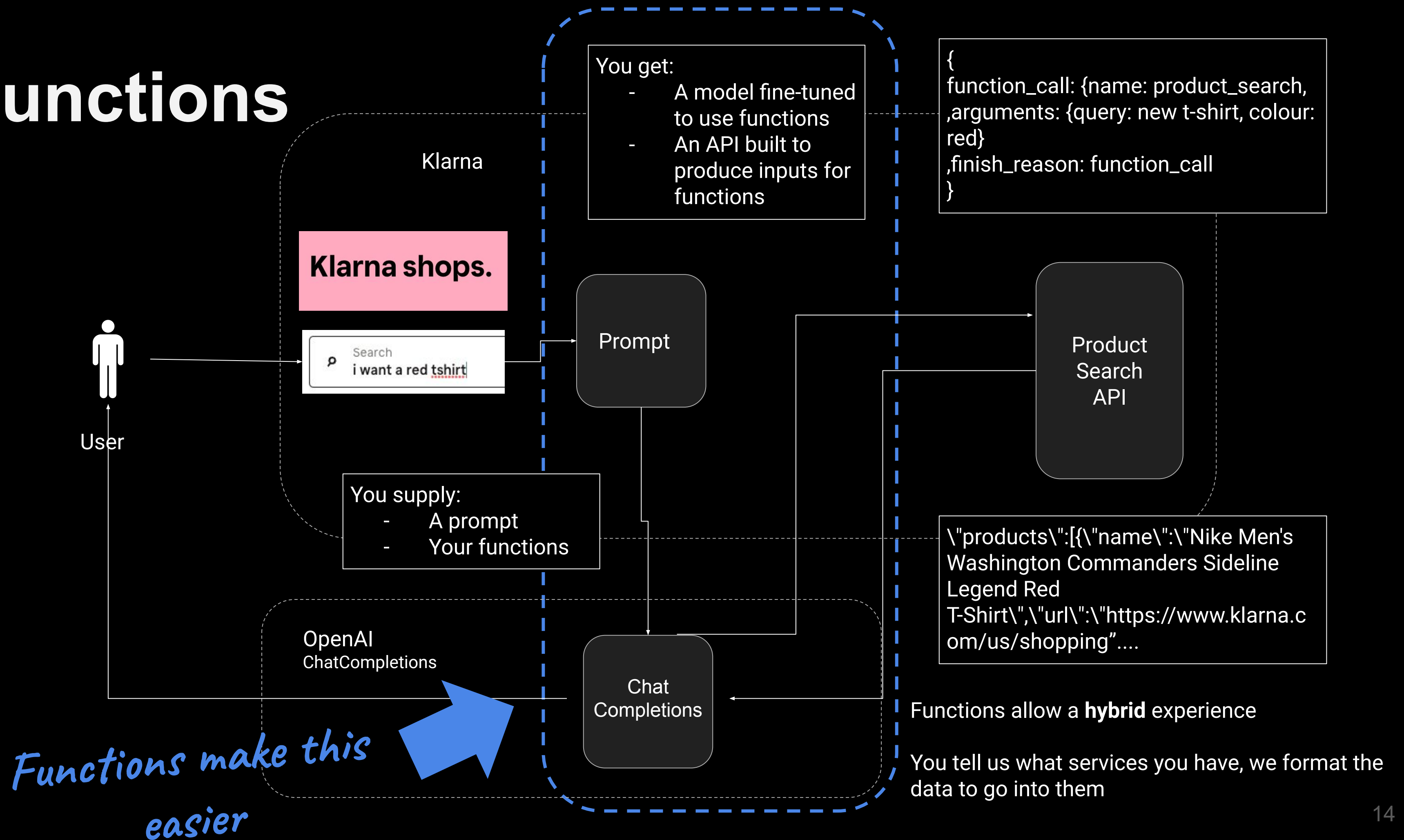
DALL·E

Text → Image

Whisper

Speech → Text

Embeddings

Search

Function calling

Functions

Klarna

Klarna shops.

Search
i want a red tshirt

User

You supply:
- A prompt
- Your functions

OpenAI
ChatCompletions

Functions make this easier

You get:
- A model fine-tuned to use functions
- An API built to produce inputs for functions

Prompt

Chat Completions

Product Search API

{
function_call: {name: product_search,
,arguments: {query: new t-shirt, colour: red}
,finish_reason: function_call
}

\"products\":[{\"name\":\"Nike Men's Washington Commanders Sideline Legend Red T-Shirt\",\"url\":\"https://www.klarna.com/us/shopping"....

Functions allow a **hybrid** experience

You tell us what services you have, we format the data to go into them

Code
interpreter

Resources

OpenAI APIs

Cookbooks
- Introduction to function calling <u>cookbook</u>
- Function calling for knowledge retrieval <u>cookbook</u>
- LangChain <u>Tool-using Agent</u> cookbook
- <u>Embeddings</u> cookbook + <u>docs</u>
- <u>Dall-E</u> cookbook + <u>docs</u>
- <u>Whisper</u> cookbook + <u>docs</u>

Background Reading
- Function calling <u>blog post</u>
- Function calling <u>documentation</u>
- API reference for <u>ChatCompletion</u> including functions
- GPT best practices <u>guide</u>
- Plugins <u>documentation</u>

Ecosystem

LLM Application Design
- <u>Langchain</u> for extending tool-use use cases
- <u>NeMo Guardrails</u> for adding guardrails to your apps

Vector databases
- Cookbook <u>link</u> to all of our vector DB partners and guides
- Basic Q&A and Chatbot <u>apps</u> using a vector DB
- <u>Template</u> for retrieval plugins using ChatGPT and vector DBs

OpenAI

Appendix

Customer service desk