

# Specialist Topic Day II

# Overview

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Daily Quiz

2

Application Programming Interfaces (APIs)

3

Applications of APIs

4

Evals presentations

# Daily Quiz

[www.harrymayne.com](http://www.harrymayne.com)

# Daily Quiz

## Discussion



# Application Programming Interfaces (APIs)



# What are APIs?

**Application Programming Interfaces (APIs):** A way of two or more computers interacting, often to pass data.

## Qualities:

- A set of rules each computer must adhere to in order to communicate
- Have an outgoing request and an incoming response
- Usually used to request and receive data.

# An analogy...



## Outgoing Request

- Made from your computer
- Specified in code
- Usually a request for **data**



## Incoming Response

- From another computer
- Usually contains the **data**

Source, Source



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# What's the point...?

## Discuss

Source, Source



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King Abdul Aziz Foundation for Global Health & Creativity

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# What's the point...?

- Allows different applications to be used **together**.
- For example, if I wanted to make a weather app, I would connect to a weather data API and request data for the next day's weather.



## Met Office DataPoint

DataPoint is an unsupported service with a planned retirement date of March 2025. Further details will be provided in due course.

DataPoint provides access to freely available Met Office data feeds in a format that is suitable for application developers. It is aimed at anyone looking to re-use Met Office data within their own innovative applications, for example professionals, the scientific community, student and amateur developers. Whilst unsupported, there is a Google user group where questions and answers can be shared with other DataPoint users; details can be found on the [Getting started](#) page.

## Met Office, UK

[Source](#), [Source](#)



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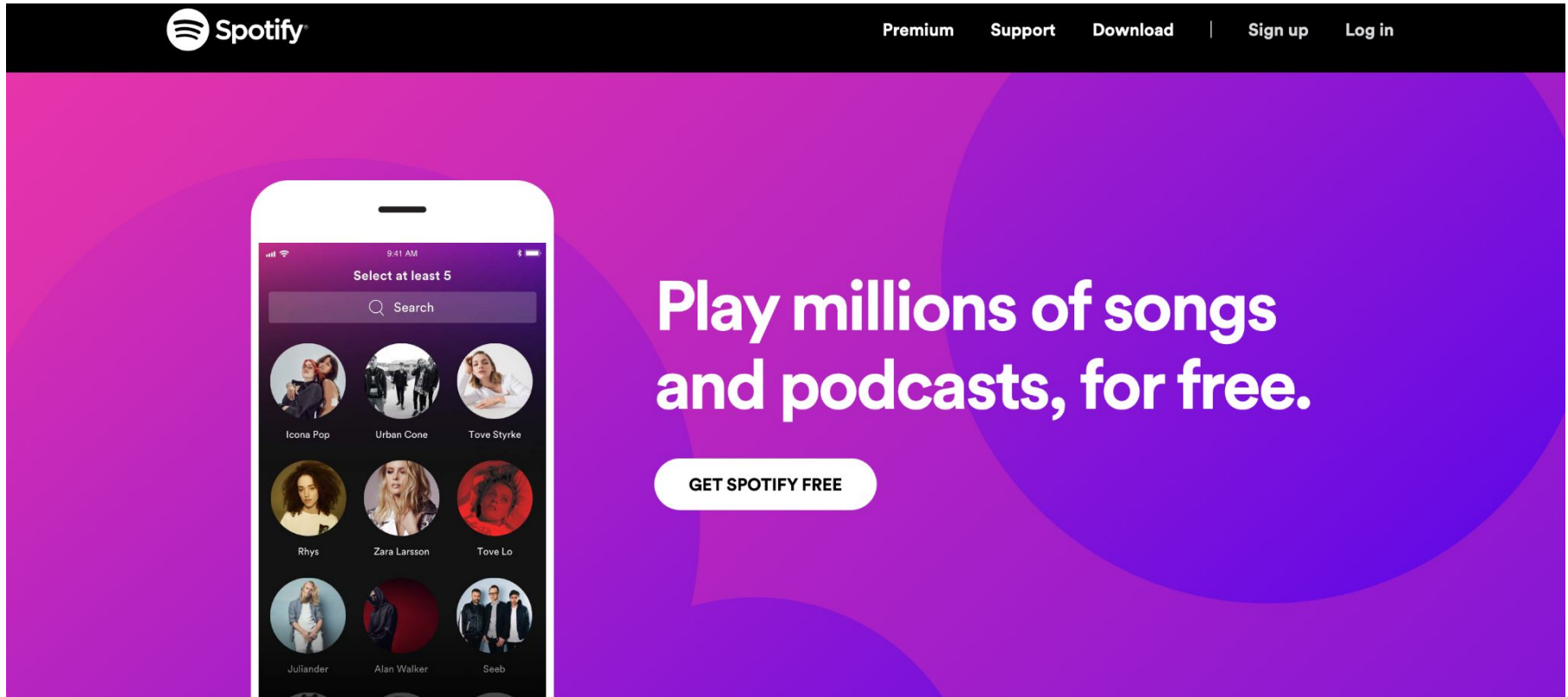


# Every big company has a **“Developers’ page”** for API access!

- These look different to the main page!
- Allow developers access to the APIs to use a company’s data
- Detail the code to use it (often written in Python but not always as a lot of apps are not Python-based)

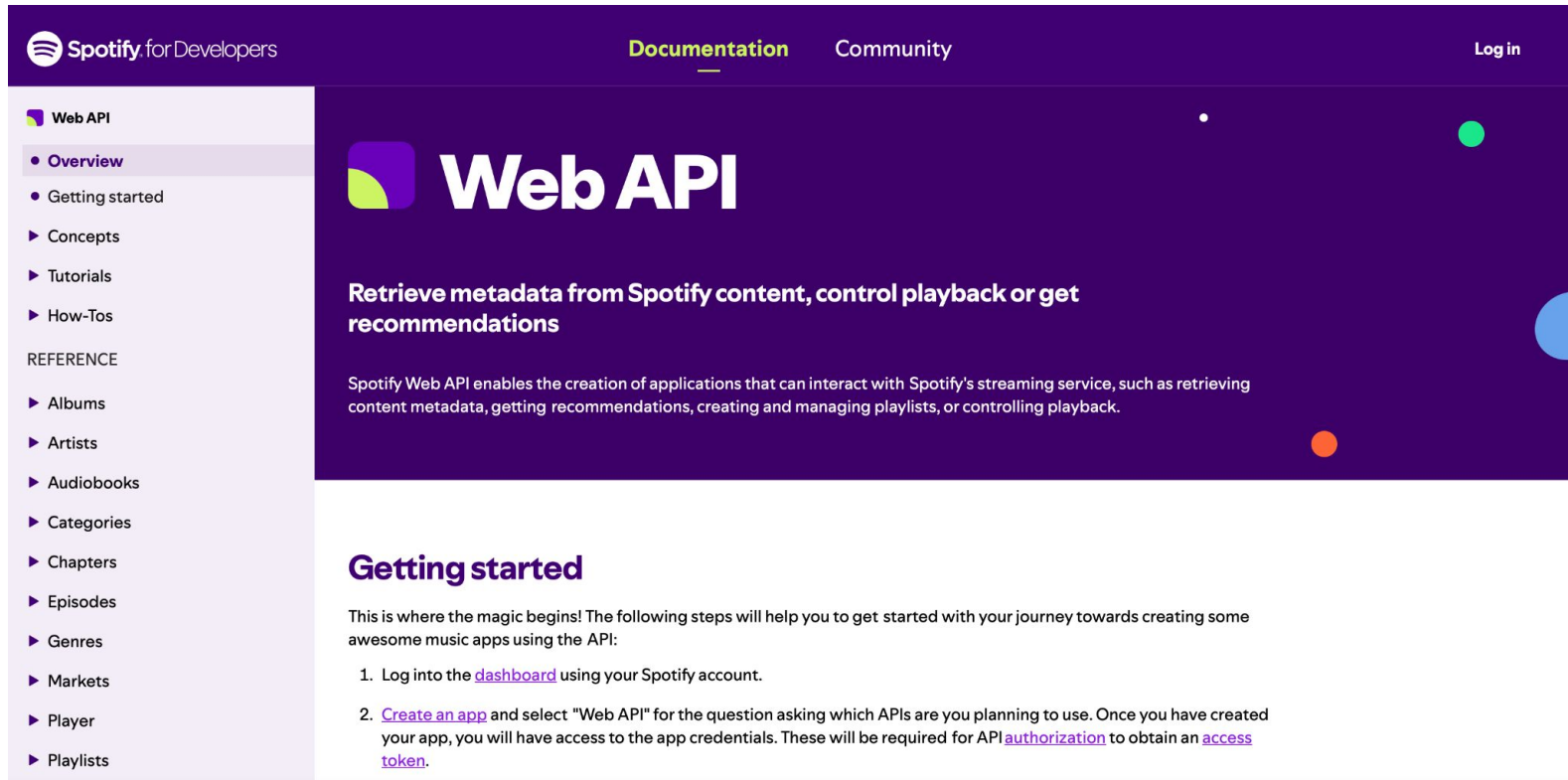
1

# Spotify



# 1

## Spotify for Developers



The screenshot shows the Spotify for Developers website. The top navigation bar includes the Spotify logo, 'Spotify for Developers', 'Documentation' (highlighted), 'Community', and a 'Log in' button. A left sidebar contains a 'Web API' section with an 'Overview' link selected, and a 'REFERENCE' section with links to 'Albums', 'Artists', 'Audiobooks', 'Categories', 'Chapters', 'Episodes', 'Genres', 'Markets', 'Player', and 'Playlists'. The main content area has a large 'Web API' heading with a subheading 'Retrieve metadata from Spotify content, control playback or get recommendations'. Below this, a paragraph states: 'Spotify Web API enables the creation of applications that can interact with Spotify's streaming service, such as retrieving content metadata, getting recommendations, creating and managing playlists, or controlling playback.' The 'Getting started' section follows, with the text: 'This is where the magic begins! The following steps will help you to get started with your journey towards creating some awesome music apps using the API:'. It lists two steps: 1. 'Log into the [dashboard](#) using your Spotify account.' and 2. '[Create an app](#) and select "Web API" for the question asking which APIs are you planning to use. Once you have created your app, you will have access to the app credentials. These will be required for API [authorization](#) to obtain an [access token](#).'



# Meta



Who we are ▾ Our technologies ▾ The metaverse Meta and you ▾

Shop Meta News Support ▾

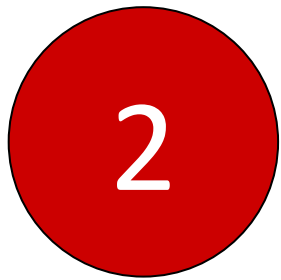


Connection is evolving,  
and so are we

Learn more







# Meta for Developers

[Developer Products](#)[Docs](#)[Blog](#)[More](#)[My Apps](#)



## The Threads API is finally here!

The Threads API is now available to all developers. Learn more about integrating today.

[→ Learn more](#)



# 3

## Saudi Government

[About Kingdom](#)[Agencies](#)[Services](#)[Participate](#)[We Care](#)[About GOV.SA](#)[عربي](#)[Search](#)[Login](#)


# National Unified Portal

KSA's national source for government services and information




### Explore Government Services


All your KSA government services in one unified national e-government portal




#### Most used services



#### Business and entrepreneurship




#### Education and training




#### Family and life events

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King Abdulaziz & His Relatives Foundation for Giftedness & Creativity

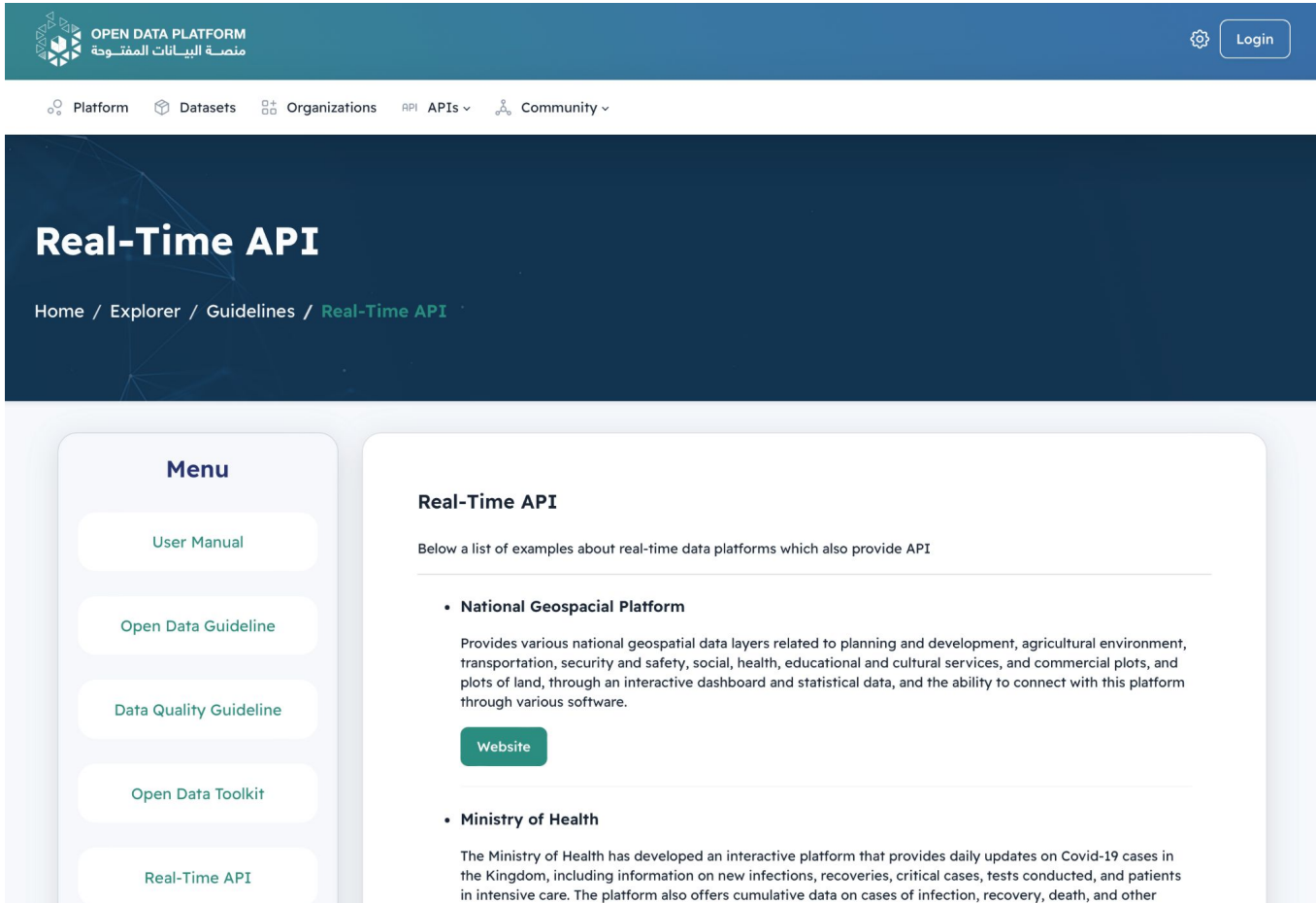


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# 3

## Saudi Government Data API



The screenshot shows the 'Real-Time API' page of the Saudi Government Data API. The header is blue with the 'OPEN DATA PLATFORM' logo and a 'Login' button. The navigation bar includes links for Platform, Datasets, Organizations, APIs, and Community. The main content area has a dark blue header with the title 'Real-Time API' and a breadcrumb trail: Home / Explorer / Guidelines / Real-Time API. A left sidebar contains a 'Menu' with links to User Manual, Open Data Guideline, Data Quality Guideline, Open Data Toolkit, and Real-Time API. The main content area is titled 'Real-Time API' and contains a list of examples of real-time data platforms that also provide API. The first example is the 'National Geospatial Platform', which provides various national geospatial data layers related to planning and development, agricultural environment, transportation, security and safety, social, health, educational and cultural services, and commercial plots, and plots of land, through an interactive dashboard and statistical data, and the ability to connect with this platform through various software. A 'Website' button is provided for this example. The second example is the 'Ministry of Health', which has developed an interactive platform that provides daily updates on Covid-19 cases in the Kingdom, including information on new infections, recoveries, critical cases, tests conducted, and patients in intensive care. The platform also offers cumulative data on cases of infection, recovery, death, and other.

**OPEN DATA PLATFORM**  
منصة البيانات المفتوحة

Platform Datasets Organizations APIs Community

### Real-Time API

Home / Explorer / Guidelines / Real-Time API

#### Menu

- User Manual
- Open Data Guideline
- Data Quality Guideline
- Open Data Toolkit
- Real-Time API

#### Real-Time API

Below a list of examples about real-time data platforms which also provide API

- National Geospatial Platform**

Provides various national geospatial data layers related to planning and development, agricultural environment, transportation, security and safety, social, health, educational and cultural services, and commercial plots, and plots of land, through an interactive dashboard and statistical data, and the ability to connect with this platform through various software.

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# Most big (tech) companies have an external API..

## Questions to discuss in pairs

1. If you were a tech company, why might you make a public/external API?
2. Would you make it free for people to use?
3. What data might you restrict?
4. What is an app in this context?

# Lots of types of API

1

**Free vs Paid?**

2

**Limited vs Full Data?**

3

**API or no API?**

4

**Rate limits?**

5

**Web API or Python  
package**

6

**Anything else?**

# A few definitions...

Term	Definition
------	------------



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<b>Rate Limiting</b>	⚠ Limits on how many API requests you can make in a given time ⚠



# Some cool APIs for AI

1

# Hugging Face 🤗 (the best by far!)

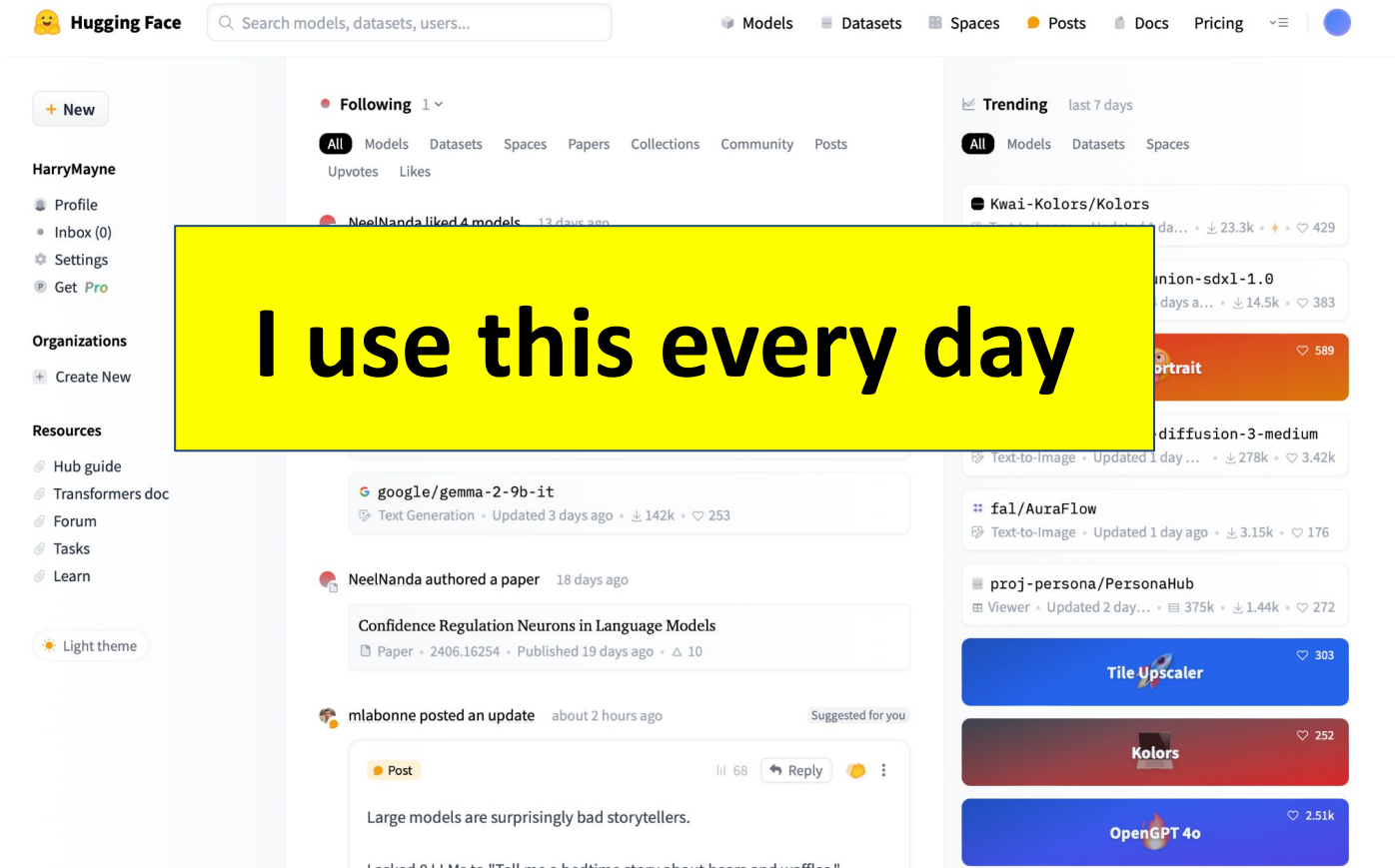
→ Use hundreds of LLMs for free

The screenshot displays the Hugging Face website. The top navigation bar includes the Hugging Face logo, a search bar, and links for Models, Datasets, Spaces, Posts, Docs, and Pricing. The left sidebar contains a 'New' button, a user profile for HarryMayne, and sections for Organizations and Resources. The main content area is divided into two columns. The left column, titled 'Following', shows a list of models liked by NeelNanda, including google/gemma-2-27b-it, google/gemma-2-27b, google/gemma-2-9b, and google/gemma-2-9b-it. It also features a paper by NeelNanda titled 'Confidence Regulation Neurons in Language Models' and a post by mlabonne about large models being bad storytellers. The right column, titled 'Trending', lists popular tools like Kwai-Kolors/Kolors, xinsir/controlnet-union-sdx1-1.0, Live Portrait, stabilityai/stable-diffusion-3-medium, fal/AuraFlow, proj-persona/PersonaHub, Tile Upscaler, Kolors, and OpenGPT 4o.

1


# Hugging Face 🥰 (the best by far!)




→ Use hundreds of LLMs for free



# 2

# Sklearn (seen it already)


[Install](#)
[User Guide](#)
[API](#)
[Examples](#)
[Community](#)
[More](#)




1.5.1 (stable)

## scikit-learn

Machine Learning in Python

[Getting Started](#)
[Release Highlights for 1.5](#)

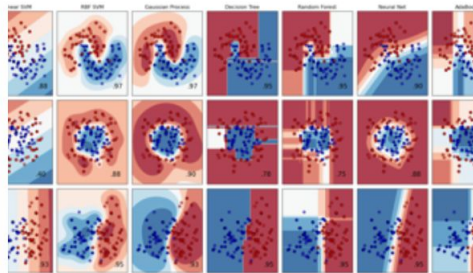
- Simple and efficient tools for predictive data analysis
- Accessible to everybody, and reusable in various contexts
- Built on NumPy, SciPy, and matplotlib
- Open source, commercially usable - BSD license

## Classification

Identifying which category an object belongs to.

**Applications:** Spam detection, image recognition.

**Algorithms:** [Gradient boosting](#), [nearest neighbors](#), [random forest](#), [logistic regression](#), and [more...](#)



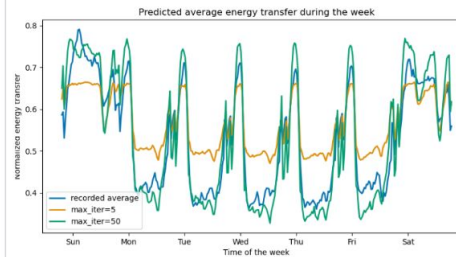
Examples

## Regression

Predicting a continuous-valued attribute associated with an object.

**Applications:** Drug response, stock prices.

**Algorithms:** [Gradient boosting](#), [nearest neighbors](#), [random forest](#), [ridge](#), and [more...](#)



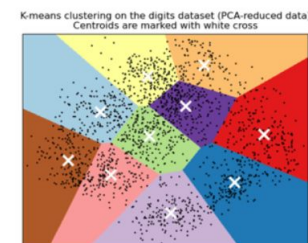
Examples

## Clustering

Automatic grouping of similar objects into sets.

**Applications:** Customer segmentation, grouping experiment outcomes.

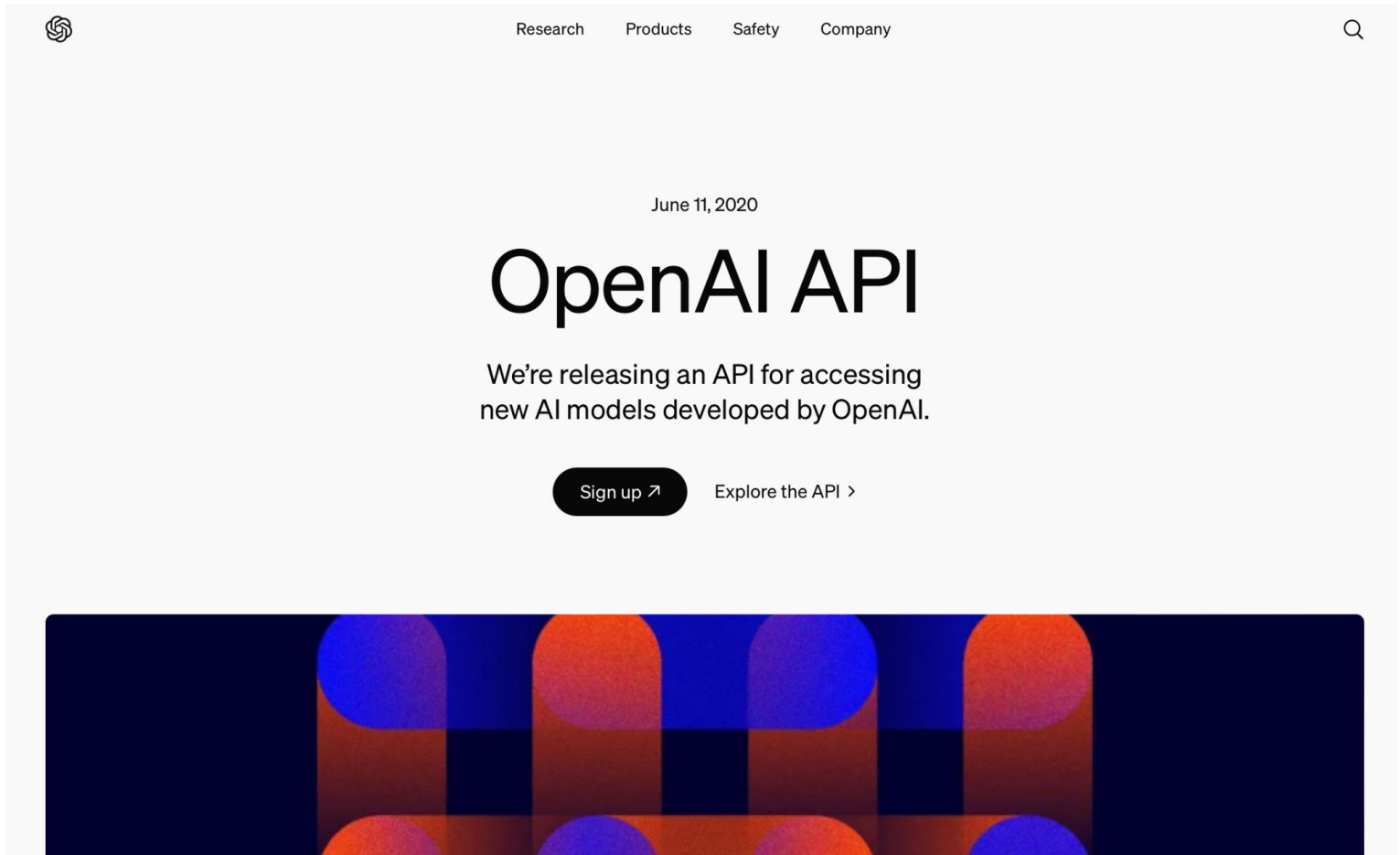
**Algorithms:** [k-Means](#), [HDBSCAN](#), [hierarchical clustering](#), and [more...](#)



Examples



# OpenAI



**There are thousands of cool APIs that can be used to make apps... (often for free)**



# 4

## UK Live Bus Data...

### Timetables data

To access the metadata associated with an individual data set, use the following API call:

```
https://data.bus-data.dft.gov.uk/api/v1/dataset/[DATASET_ID]/?api_key=[API_KEY]
```

where DATASET\_ID is the id of the data set and API\_KEY is your personal API key.

To search for data sets using the API, use the following API call:

```
https://data.bus-data.dft.gov.uk/api/v1/dataset/?[QUERY_PARAMS]&api_key=[API_KEY]
```

where QUERY\_PARAMS are the query parameters as defined in the API reference and API\_KEY is your personal API key.

Results are returned as JSON. For example,

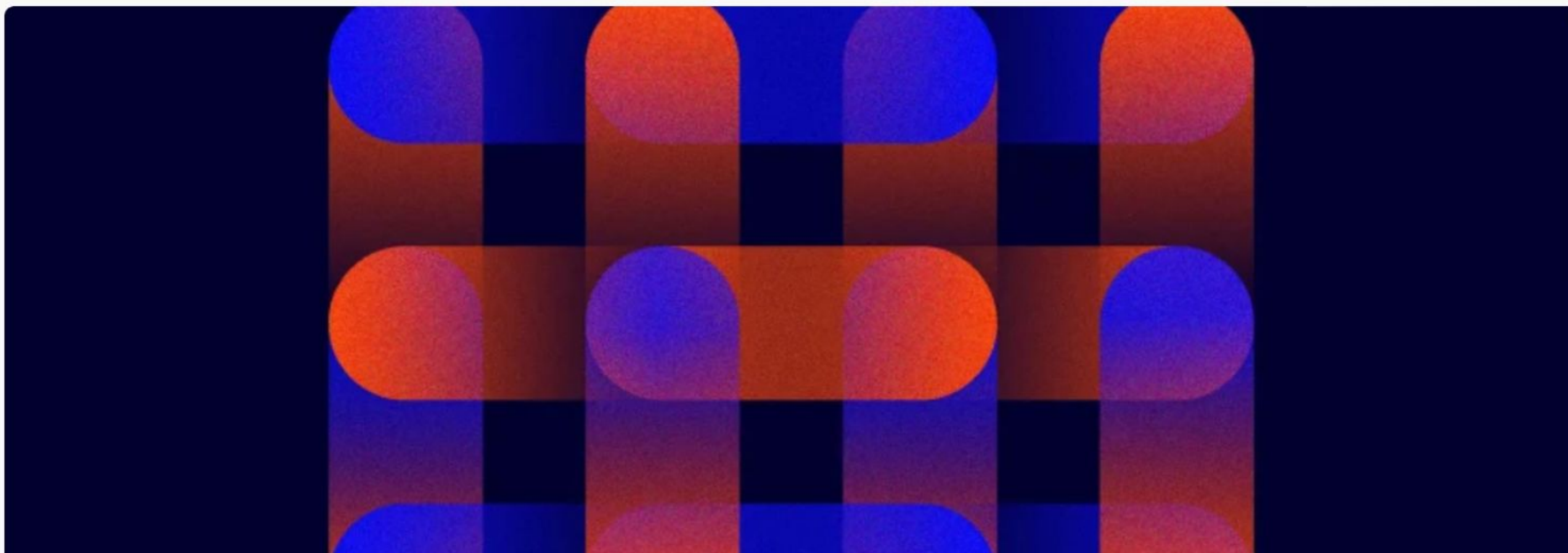
# Working with the OpenAI API



June 11, 2020

# OpenAI API

We're releasing an API for accessing new AI models developed by OpenAI.

[Sign up ↗](#)[Explore the API >](#)

# The most powerful platform for building AI products

Build and scale AI experiences powered  
by industry-leading models and tools.

Start building ↗

View API pricing >

Klarna.

Harvey.

oscar

 SUPERHUMAN



Paradigm

WIX



Government of Iceland

WI-HOOP®

 Ironclad



# GPT-4o

GPT-4o is our most advanced multimodal model that's faster and cheaper than GPT-4 Turbo with stronger vision capabilities. The model has 128K context and an October 2023 knowledge cutoff.

[Learn about GPT-4o ↗](#)

Model	Pricing	Pricing with Batch API*
gpt-4o	US\$5.00 / 1M input tokens	US\$2.50 / 1M input tokens
	US\$15.00 / 1M output tokens	US\$7.50 / 1M output tokens
gpt-4o-2024-05-13	US\$5.00 / 1M input tokens	US\$2.50 / 1M input tokens
	US\$15.00 / 1M output tokens	US\$7.50 / 1M output tokens

## Vision pricing calculator

Set width

 px

Set height

 px

= US\$0.001275 [i](#)

**6 times cheaper than the original GPT-4... Why might this be the case?**



## GPT-3.5 Turbo

The GPT-3.5 Turbo model is our fast, inexpensive model for simple tasks. It has a 16K context window and is optimized for dialog. The Instruct model supports a 4K context window.

[Learn about GPT-3.5 Turbo ↗](#)

Model	Pricing	Pricing with Batch API*
gpt-3.5-turbo-0125	US\$0.50 / 1M input tokens	US\$0.25 / 1M input tokens
	US\$1.50 / 1M output tokens	US\$0.75 / 1M output tokens
gpt-3.5-turbo-instruct	US\$1.50 / 1M input tokens	US\$0.75 / 1M input tokens
	US\$2.00 / 1M output tokens	US\$1.00 / 1M output tokens

\*Batch API pricing requires requests to be submitted as a batch. Responses will be returned within 24 hours for a 50% discount. [Learn more about Batch API ↗](#)

# See today's notebook

[www.harrymayne.com](http://www.harrymayne.com)



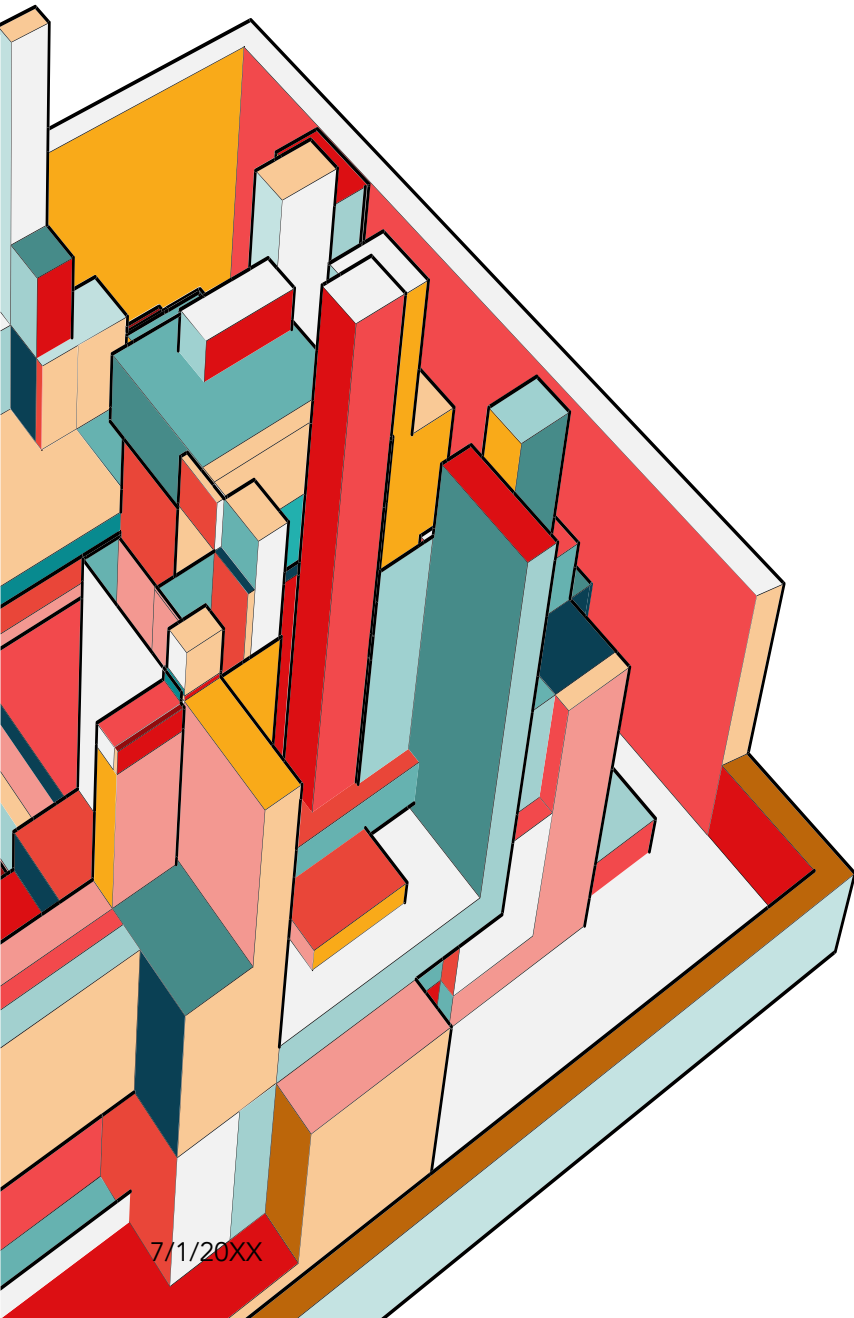
# Evals Presentations





# **CAN A.I RECOGNIZE SARCASM**

Ahmed Khogeer and Basil Taha



# WHAT WILL WE BE DOING

- Since this isn't really a straightforward benchmark, we began with a simple "explain x" prompt.
- Will then give a sarcastic sentence, to test if they can recognize sarcasm



# WHAT SENTENCES WILL WE BE USING

1. You don't say!
2. Really sherlock?!
3. If I had a dollar for every smart thing you say, I will be poor.
4. Unless your name is Google, stop acting like you know everything
5. Me pretending to listen should be enough for you
6. My friend is so hungry he wants to eat me.
7. The joke is funny I wanna die
8. Why so serious?

# WHAT WILL WE BE USING

**Phi**

**GPT-3.5**

**Mistral  
Le chat**

**Co-Pilot**

**Gemini**

# OUR HYPOTHESIS

What we thought results would look

## Small Models

We thought that small models like PHI would be terrible at this benchmark

## Big Models

We thought that bigger models like GPT 3.5 and Gemini would be much better because of they are much bigger

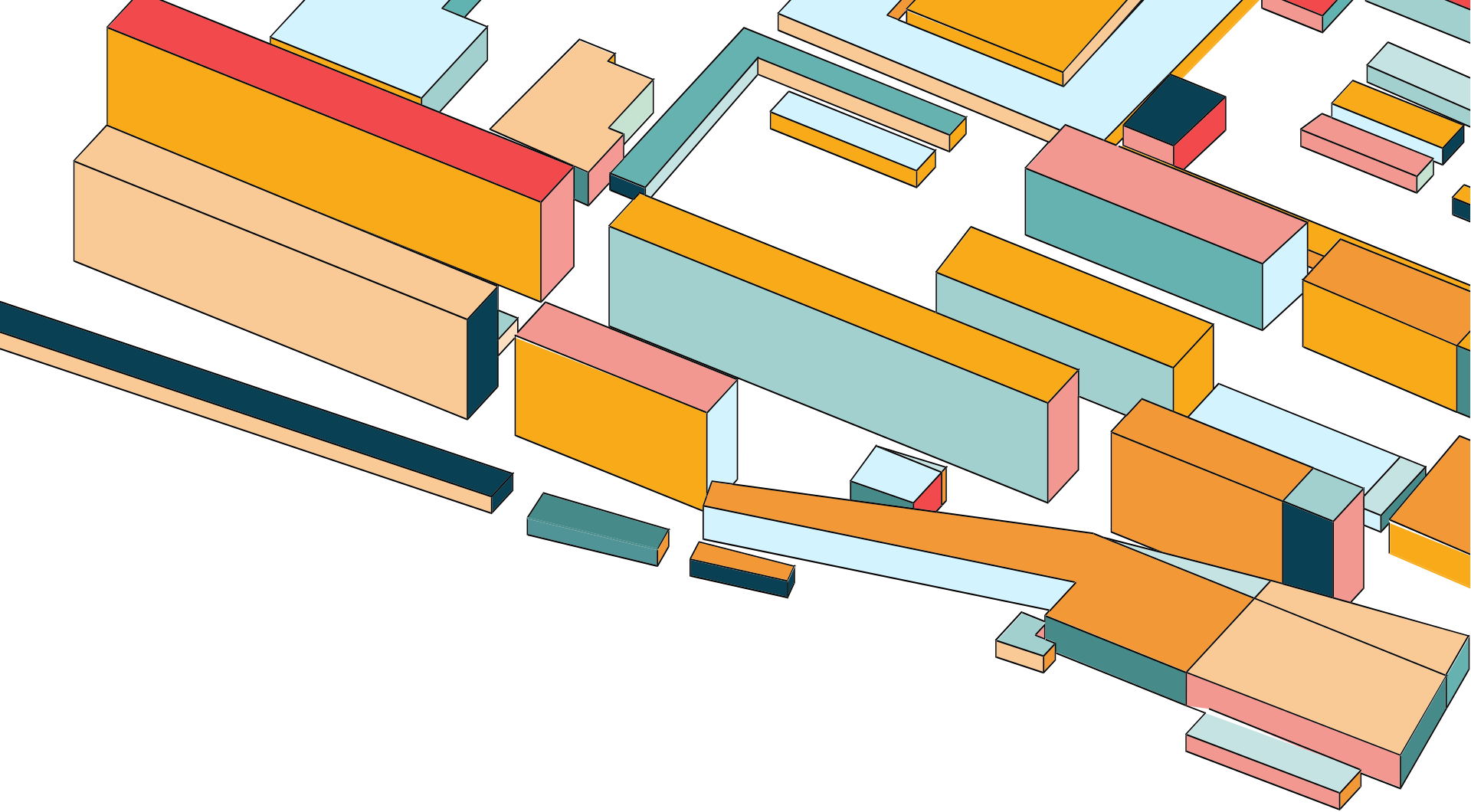
## Similarities

We thought that big models like GPT 3.5 and Gemini would be pretty much similar, and the big differences will be between smaller models

7/1/20XX

Pitch deck title

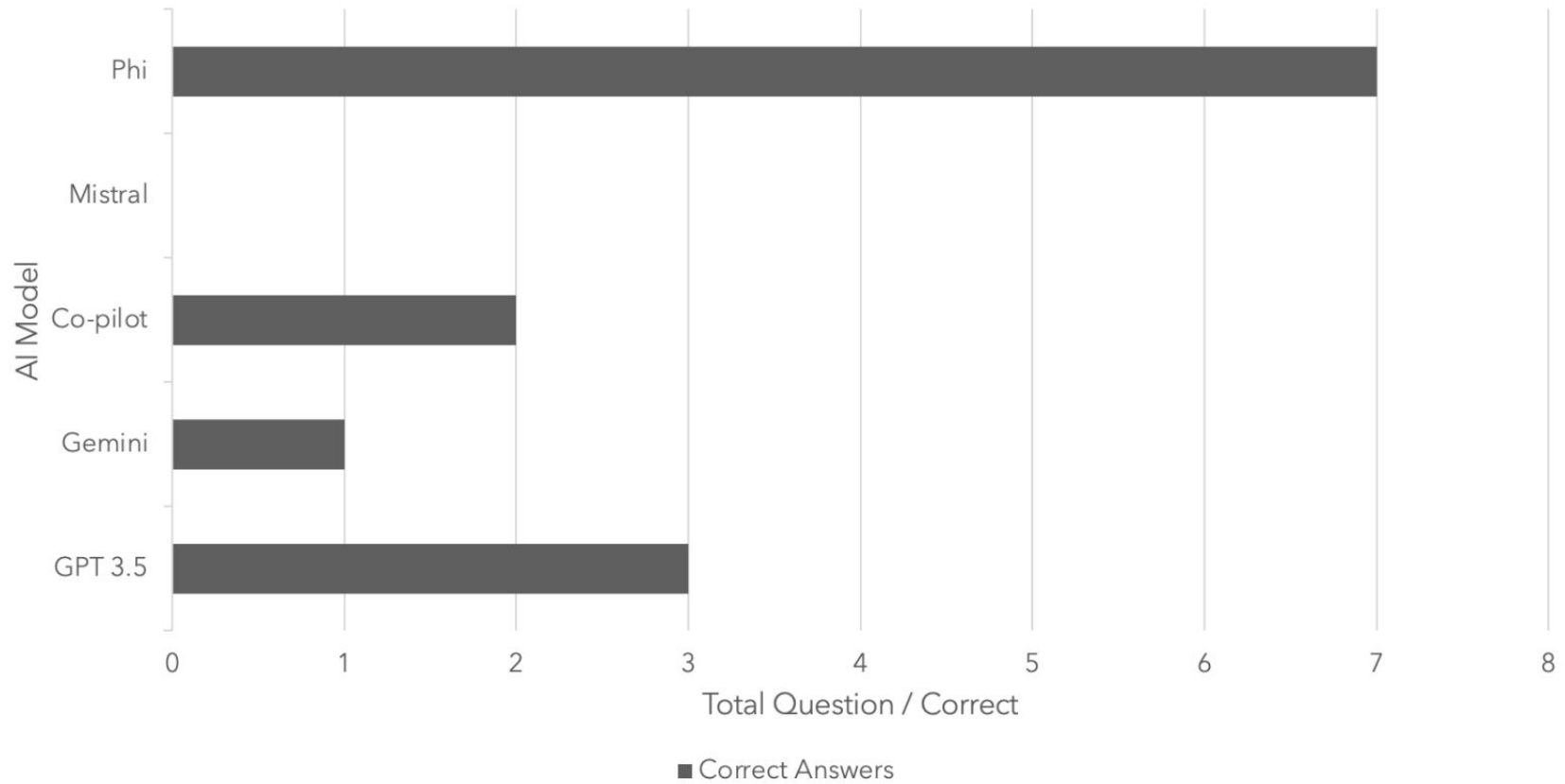
45



**WE WERE VERY WRONG!!**

# THE DATA

Correct Answers



# THANK YOU

Ahmed Khogeer and  
Basil Taha