

Introduction to LangChain, ChatGPT and Gemini Pro

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Outline

- Key tools to build a Text-based Chatbot App
- What is ChatGPT?
- How to get your Open AI API Key?
- What is Google Gemini?
- How to get your Gemini Pro API Key?
- What is LangChain
- Best Practices to Load API Keys in Google Colab
- How to use YAML files to load API keys in Colab
- Next Steps

Key tools to build a Text-based Chatbot App



[LangChain](#) - A Python framework to build
LLM systems

Key tools to build a Text-based Chatbot App



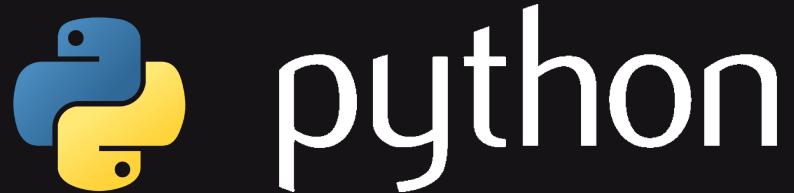
LLMs like [Open AI ChatGPT](#) or [Google Gemini Pro](#)

Gemini

Key tools to build a Text-based Chatbot App



Google Colab or a Python environment for running your apps



What is ChatGPT?



ChatGPT

- An AI System which is a conversational chatbot
- It is built on top of a large language model (LLM) like GPT-3.5 and now GPT-4
- Trained to respond to instructions

What is ChatGPT?

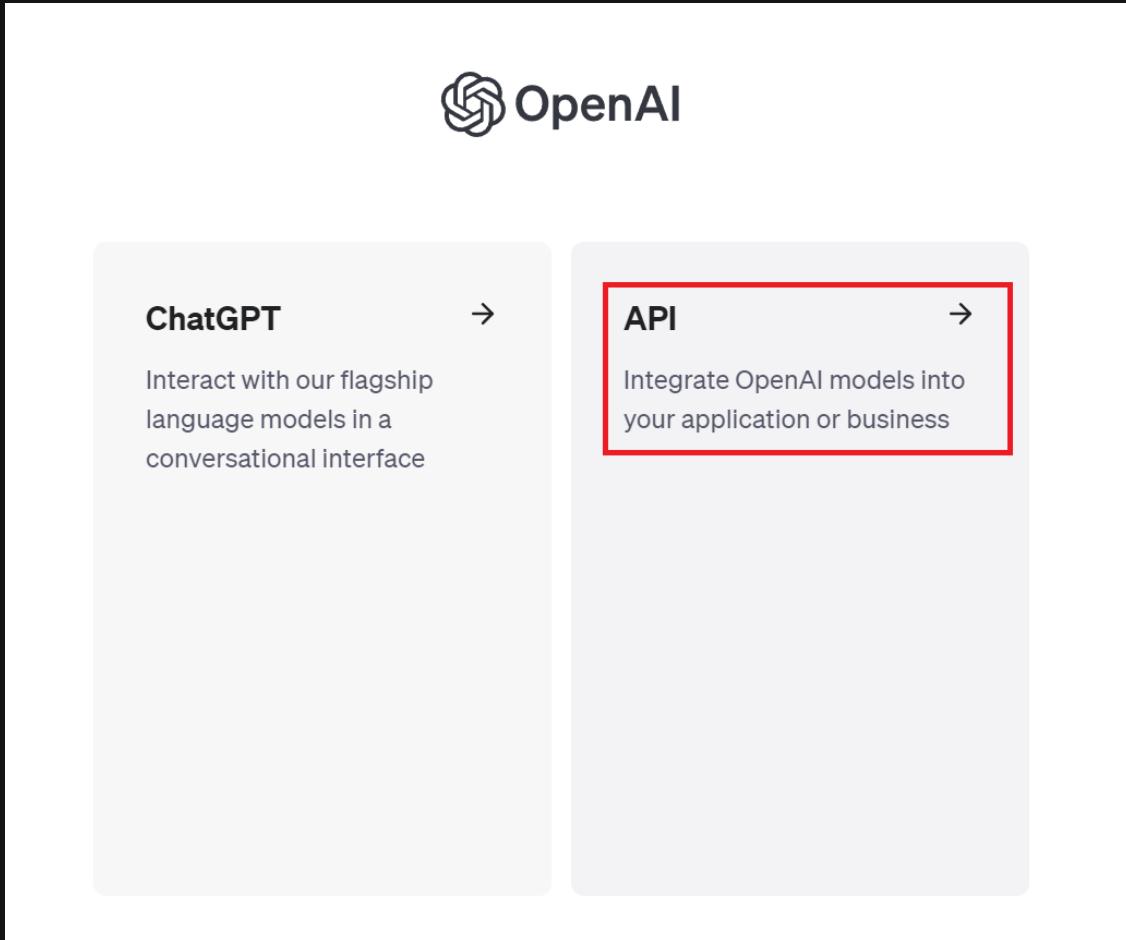


ChatGPT



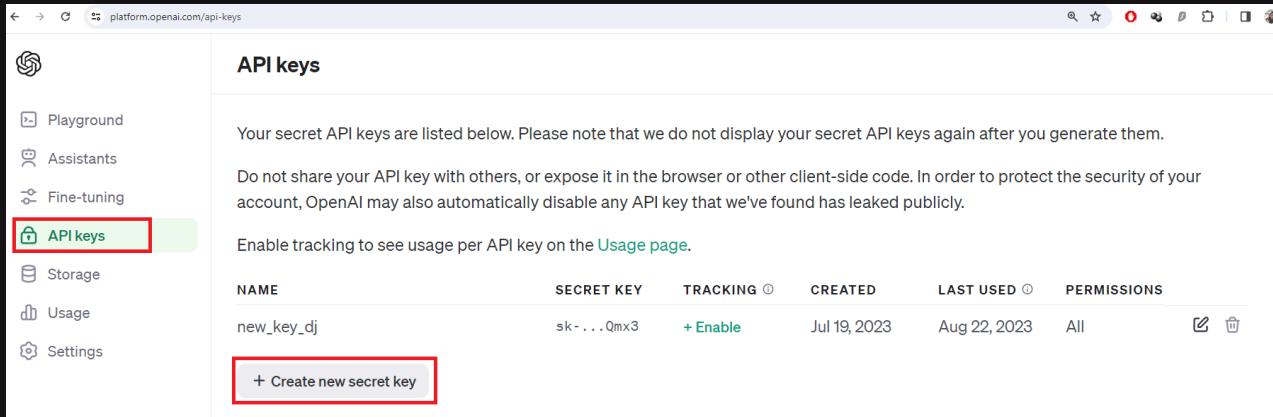
We will access it in Python via an API

Sign up and login to Open AI



- Go to <https://platform.openai.com/apps>
- Log in or sign up for an account
- This will enable you to start using ChatGPT APIs
- You might need to add billing details to get a free 5\$ credit

Get your Open AI API Key



The screenshot shows the OpenAI platform interface at platform.openai.com/api-keys. The left sidebar has a navigation menu with options: Playground, Assistants, Fine-tuning, API keys (which is selected and highlighted with a red box), Storage, Usage, and Settings. The main content area is titled "API keys" and contains instructions: "Your secret API keys are listed below. Please note that we do not display your secret API keys again after you generate them." and "Do not share your API key with others, or expose it in the browser or other client-side code. In order to protect the security of your account, OpenAI may also automatically disable any API key that we've found has leaked publicly." Below these instructions, there's a link "Enable tracking to see usage per API key on the [Usage page](#)". A table lists the existing API key: "new_key_dj" with secret key "sk-...Qmx3", tracking status "+ Enable", created on Jul 19, 2023, last used on Aug 22, 2023, and permissions set to "All". At the bottom of the table is a button "+ Create new secret key" with a red border.

Create your key by going to:

- <https://platform.openai.com/api-keys>

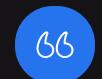
What is Google Gemini?



- An AI System that is a conversational chatbot just like ChatGPT
- It has a family of LLMs which include Gemini Nano, Pro, and Ultra
- Has been trained to respond to instructions

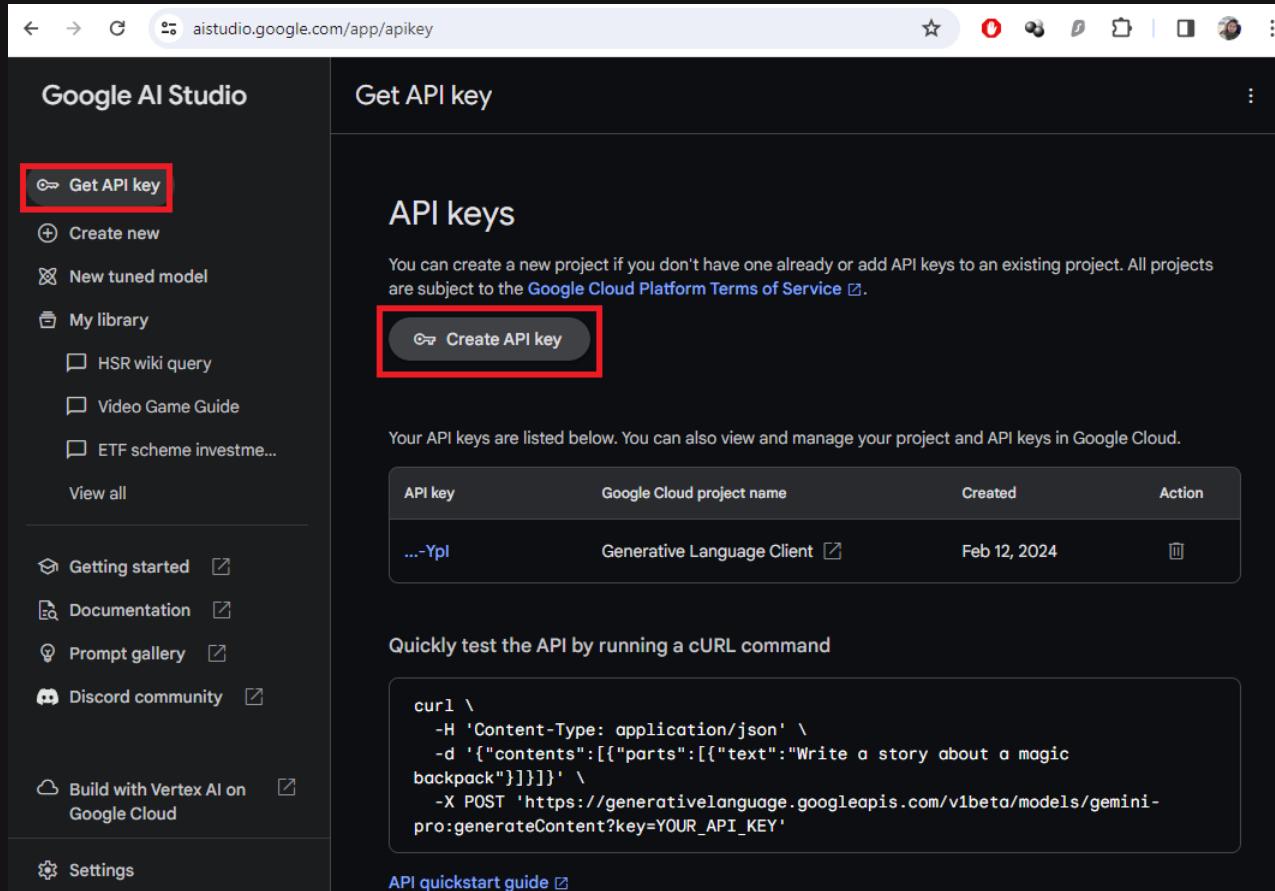
What is Google Gemini?

Gemini



We will access it in Python via an API

Get your Gemini Pro API Key



The screenshot shows the 'Get API key' page in the Google AI Studio. On the left sidebar, the 'Get API key' button is highlighted with a red box. In the main content area, the 'Create API key' button is also highlighted with a red box. Below these buttons, a table lists an existing API key: '...-Ypl' under 'API key', 'Generative Language Client' under 'Google Cloud project name', and 'Feb 12, 2024' under 'Created'. A cURL command for testing the API is provided at the bottom.

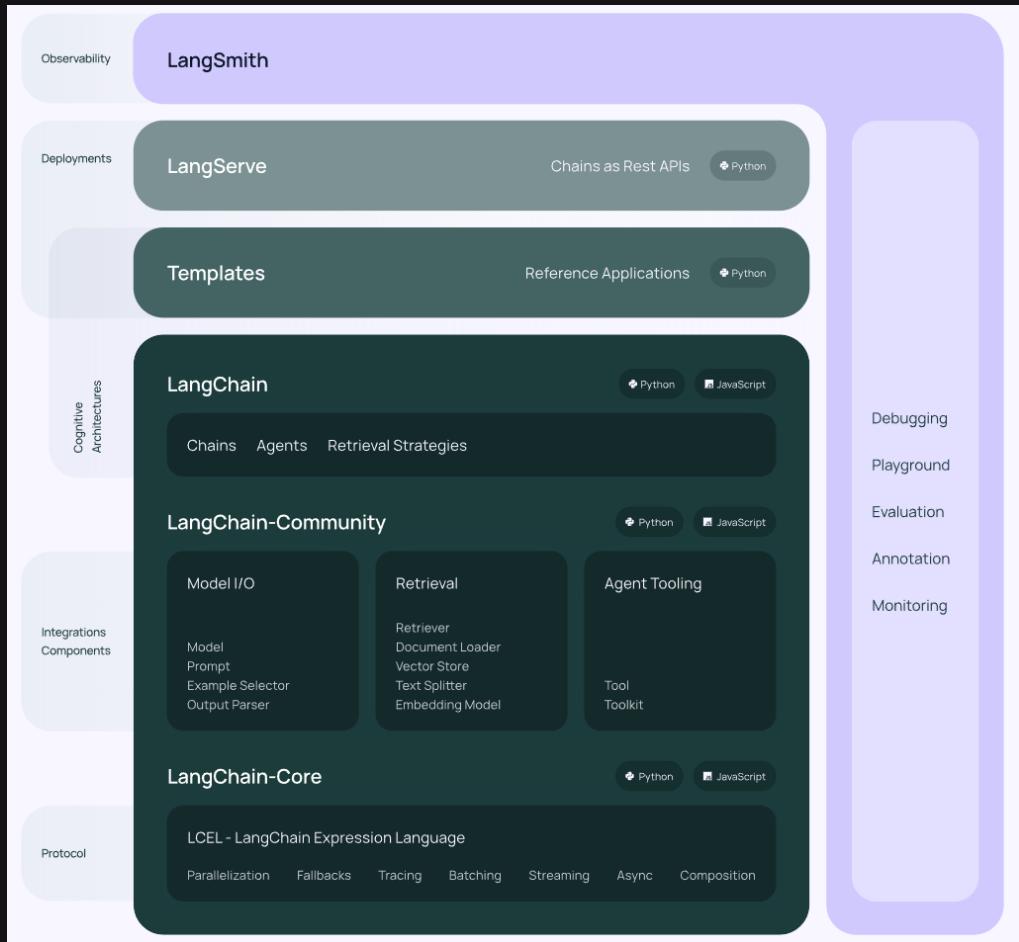
API key	Google Cloud project name	Created	Action
...-Ypl	Generative Language Client	Feb 12, 2024	[Edit]

```
curl \
  -H 'Content-Type: application/json' \
  -d '{"contents": [{"parts": [{"text": "Write a story about a magic backpack"}]}]}' \
  -X POST 'https://generativelanguage.googleapis.com/v1beta/models/gemini-pro:generateContent?key=YOUR_API_KEY'
```

Create your key by going to:

- <https://aistudio.google.com/app/apikey>

What is LangChain?



- An open-source framework for developing applications powered by LLMs
- Helps in connecting prompts with a variety of LLMs and chain complex operations together
- Has capabilities to build advanced applications like RAG systems

Best Practices to Load API Keys in Google Colab

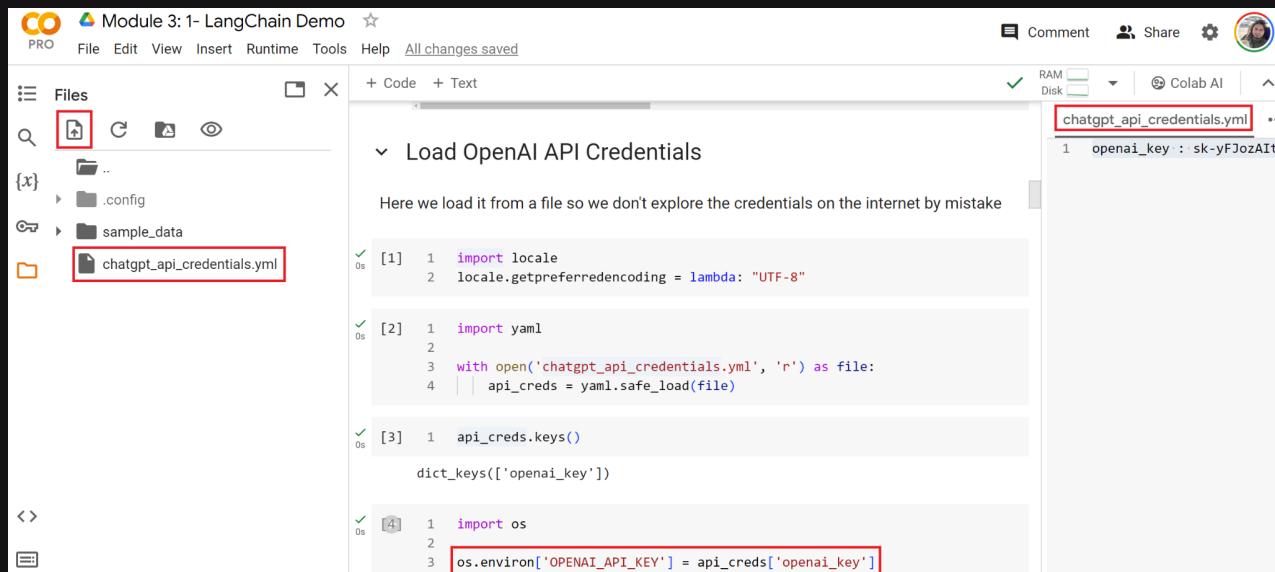
- Upload YAML files with your key and access in Colab notebooks
- Store your key in Colab Secrets and access in Colab notebooks
- Use ENV files and access in Colab notebooks

How to use YAML files to load API keys in Colab

```
chatgpt_api_credentials.yml ×  
1 openai_key : sk-yFJozAItzaHh███████████ 9UH
```

- Create a blank file (text file) and name it `chatgpt_api_credentials.yml`
- Store your Open AI or Gemini API key in a key: value format where the value would be your API key

How to use YAML files to load API keys in Colab



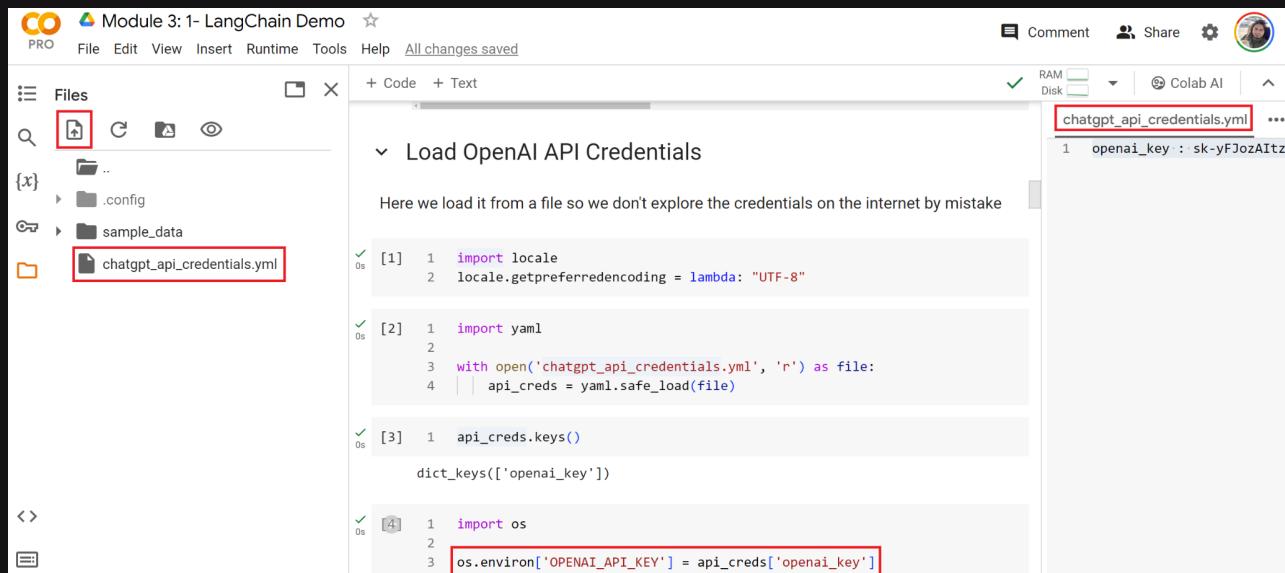
The screenshot shows the Google Colab interface with a dark theme. On the left, the 'Files' sidebar lists a folder structure: .config, sample_data, and a file named 'chatgpt_api_credentials.yml'. The main area displays Python code in a code cell:

```
[1] import locale  
locale.getpreferredencoding = lambda: "UTF-8"  
  
[2] import yaml  
with open('chatgpt_api_credentials.yml', 'r') as file:  
    api_creds = yaml.safe_load(file)  
  
[3] api_creds.keys()  
dict_keys(['openai_key'])  
  
[4] import os  
os.environ['OPENAI_API_KEY'] = api_creds['openai_key']
```

A red box highlights the 'chatgpt_api_credentials.yml' file in the sidebar and the 'os.environ' line in the code cell.

- Upload the YAML file in Google Colab
- Use the code as shown to load the API key in environment variables

How to use YAML files to load API keys in Colab



The screenshot shows a Google Colab notebook titled "Module 3: 1- LangChain Demo". The left sidebar shows a file tree with a file named "chatgpt_api_credentials.yml" highlighted with a red box. The main code editor contains the following Python code:

```
[1] import locale  
[2] locale.getpreferredencoding = lambda: "UTF-8"  
  
[3] import yaml  
[4] with open('chatgpt_api_credentials.yml', 'r') as file:  
    api_creds = yaml.safe_load(file)  
  
[5] api_creds.keys()  
dict_keys(['openai_key'])  
  
[6] import os  
[7] os.environ['OPENAI_API_KEY'] = api_creds['openai_key']
```

The code uses the `yaml` library to load the contents of the YAML file into a dictionary. It then prints the keys of the dictionary and sets the environment variable `OPENAI_API_KEY` to the value of the `'openai_key'` key in the dictionary.



We will follow this process in all the hands-on tutorials in the course

Next Steps



Step 1

Understand how to build basic LLM Chains using LangChain



Step 3

Understand how to interface LangChain with LLMs like ChatGPT and Gemini Pro



Step 2

Understand how to build memory-based Conversational Chains using LangChain

Thank You
