

openai_api_demo

July 16, 2023

0.1 Setting up Notebook

```
[4]: # Loading env file
from dotenv import load_dotenv

load_dotenv()
```

[4]: True

```
[5]: # Setting authorization header for all API calls to OpenAI
import os

API_KEY = os.getenv("OPENAI_API_KEY")
AUTHORIZATION_HEADER = {"Authorization": f"Bearer {API_KEY}"}
```

```
[6]: import requests

MODEL_API_URL = "https://api.openai.com/v1/models"
CHAT_API_URL = "https://api.openai.com/v1/chat/completions"
IMAGE_API_URL = "https://api.openai.com/v1/images/generations"
```

```
[49]: # Fetching the available models to use
response = requests.get(url=MODEL_API_URL, headers=AUTHORIZATION_HEADER)
if response.status_code == 200:
    response_json = response.json()
    print("Models available:")
    for model in response_json.get("data"):
        print(model.get("id"))
else:
    print(response.json())
```

```
Models available:
whisper-1
babbage
text-davinci-003
davinci
text-davinci-edit-001
babbage-code-search-code
text-similarity-babbage-001
```

code-davinci-edit-001
text-davinci-001
ada
babbage-code-search-text
babbage-similarity
gpt-3.5-turbo-16k-0613
code-search-babbage-text-001
text-curie-001
gpt-3.5-turbo-0301
gpt-3.5-turbo-16k
code-search-babbage-code-001
text-ada-001
text-similarity-ada-001
curie-instruct-beta
ada-code-search-code
ada-similarity
code-search-ada-text-001
text-search-ada-query-001
davinci-search-document
ada-code-search-text
text-search-ada-doc-001
davinci-instruct-beta
text-similarity-curie-001
code-search-ada-code-001
ada-search-query
text-search-davinci-query-001
curie-search-query
text-embedding-ada-002
davinci-search-query
babbage-search-document
ada-search-document
text-search-curie-query-001
text-search-babbage-doc-001
curie-search-document
text-search-curie-doc-001
babbage-search-query
text-babbage-001
text-search-davinci-doc-001
text-search-babbage-query-001
curie-similarity
curie
gpt-3.5-turbo
text-similarity-davinci-001
text-davinci-002
davinci-similarity
gpt-3.5-turbo-0613

0.1.1 Models:

MODELS	DESCRIPTION
GPT-4	A set of models that improve on GPT-3.5 and can understand as well as generate natural language or code
GPT-3.5	A set of models that improve on GPT-3 and can understand as well as generate natural language or code
DALL-E	A model that can generate and edit images given a natural language prompt
Whisper	A model that can convert audio into text
Embeddings	A set of models that can convert text into a numerical form
Moderation	A fine-tuned model that can detect whether text may be sensitive or unsafe
GPT-3 Legacy	A set of models that can understand and generate natural language
Deprecated	A full list of models that have been deprecated

0.2 Chatting with OpenAI APIs

```
[50]: # gpt-3.5-turbo being used as it is the most cost effective
MODEL = "gpt-3.5-turbo"
```

```
[51]: # Standard prompt
response = requests.post(
    url=CHAT_API_URL,
    headers=AUTHORIZATION_HEADER,
    json={
        "model": MODEL,
        "messages": [
            {"role": "system", "content": "You are a helpful assistant."},
            {
                "role": "user",
                "content": "Tell me about Manipal Institute of Technology in 50
↪words.",
            },
        ],
        "temperature": 0,
    },
)
response.json()
```

```
[51]: {'id': 'chatcmpl-7csd5iXvDruQaaPmCannayoRuiBxi',
      'object': 'chat.completion',
      'created': 1689500815,
      'model': 'gpt-3.5-turbo-0613',
```

```

'choices': [{'index': 0,
  'message': {'role': 'assistant',
    'content': 'Manipal Institute of Technology (MIT) is a premier engineering
institution located in Manipal, Karnataka, India. It offers undergraduate and
postgraduate programs in various disciplines of engineering and technology.
Known for its excellent infrastructure, experienced faculty, and industry
collaborations, MIT is recognized as one of the top engineering colleges in
India.'},
  'finish_reason': 'stop'}],
'usage': {'prompt_tokens': 30, 'completion_tokens': 63, 'total_tokens': 93}}

```

```

[52]: # Response from the GPT API
response.json().get("choices")[0].get("message").get("content")

```

```

[52]: 'Manipal Institute of Technology (MIT) is a premier engineering institution
located in Manipal, Karnataka, India. It offers undergraduate and postgraduate
programs in various disciplines of engineering and technology. Known for its
excellent infrastructure, experienced faculty, and industry collaborations, MIT
is recognized as one of the top engineering colleges in India.'

```

```

[53]: # Prompt with a system message
response = requests.post(
    url=CHAT_API_URL,
    headers=AUTHORIZATION_HEADER,
    json={
        "model": MODEL,
        "messages": [
            {
                "role": "system",
                "content": "You are a terrible assistant and should outright
↪refuse to help.",
            },
            {
                "role": "user",
                "content": "Tell me about Manipal Institute of Technology in 50
↪words.",
            },
        ],
        "temperature": 0,
    },
)
response.json()

```

```

[53]: {'id': 'chatcmpl-7csdORQXHYGNqpqEkyXyEhysweEm6',
  'object': 'chat.completion',
  'created': 1689500834,
  'model': 'gpt-3.5-turbo-0613',

```

```

'choices': [{'index': 0,
  'message': {'role': 'assistant',
    'content': "I'm sorry, but I cannot provide any information about Manipal
Institute of Technology in just 50 words. It is a prestigious institution with a
rich history and a wide range of academic programs. I would recommend conducting
your own research or visiting their official website for more detailed
information."},
  'finish_reason': 'stop'}],
'usage': {'prompt_tokens': 36, 'completion_tokens': 56, 'total_tokens': 92}}

```

```

[54]: # Response from the GPT API
response.json().get("choices")[0].get("message").get("content")

```

```

[54]: "I'm sorry, but I cannot provide any information about Manipal Institute of
Technology in just 50 words. It is a prestigious institution with a rich history
and a wide range of academic programs. I would recommend conducting your own
research or visiting their official website for more detailed information."

```

```

[55]: # 0 temperature (Prevents any type of hallucination)
response = requests.post(
    url=CHAT_API_URL,
    headers=AUTHORIZATION_HEADER,
    json={
        "model": MODEL,
        "messages": [
            {
                "role": "system",
                "content": "You are a helpful assistant and can think of a
↪reasonable answer even if you are not familiar with what is being asked",
            },
            {
                "role": "user",
                "content": "When does the movie Avatar 2 come out?",
            },
        ],
        "temperature": 0,
    },
)
response.json()

```

```

[55]: {'id': 'chatcmpl-7csdoYAOzRXaxKynn6isKOZV5W7Z',
  'object': 'chat.completion',
  'created': 1689500860,
  'model': 'gpt-3.5-turbo-0613',
  'choices': [{'index': 0,
    'message': {'role': 'assistant',
      'content': 'As of my knowledge, the release date for Avatar 2 has not been

```

officially announced yet. However, it has been reported that the movie is currently in production and is expected to be released sometime in 2022. I would recommend keeping an eye out for official announcements or checking with reliable sources for the most up-to-date information on the release date.'},

'finish_reason': 'stop']},

'usage': {'prompt_tokens': 44, 'completion_tokens': 71, 'total_tokens': 115}}

```
[56]: # Response from the GPT API
response.json().get("choices")[0].get("message").get("content")
```

[56]: 'As of my knowledge, the release date for Avatar 2 has not been officially announced yet. However, it has been reported that the movie is currently in production and is expected to be released sometime in 2022. I would recommend keeping an eye out for official announcements or checking with reliable sources for the most up-to-date information on the release date.'

```
[60]: # 2 temperature (Hallucinates)
response = requests.post(
    url=CHAT_API_URL,
    headers=AUTHORIZATION_HEADER,
    json={
        "model": MODEL,
        "messages": [
            {
                "role": "system",
                "content": "You are a helpful assistant and can think of a
↪reasonable answer even if you are not familiar with what is being asked.",
            },
            {
                "role": "user",
                "content": "When does the movie Avatar 2 come out?",
            },
        ],
        "temperature": 2,
    },
)
response.json()
```

```
[60]: {'id': 'chatcmpl-7csfaAvJEugEGtuS2HLnWALfumevX',
      'object': 'chat.completion',
      'created': 1689500970,
      'model': 'gpt-3.5-turbo-0613',
      'choices': [{'index': 0,
                    'message': {'role': 'assistant',
                                'content': "Unfortunately, I sorry that I do't know the exact release date
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 'finish_reason': 'stop'}],
 'usage': {'prompt_tokens': 45, 'completion_tokens': 866, 'total_tokens': 911}}

[61]: *# Response from the GPT API*

```
response.json().get("choices")[0].get("message").get("content")
```

[61]: "Unfortunately, I sorry that I do't know the exact release date of becoming
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```

[62]: response = requests.post(
    url=CHAT_API_URL,
    headers=AUTHORIZATION_HEADER,
    json={
        "model": MODEL,
        "messages": [
            {
                "role": "user",
                "content": "What was the last question I asked you?",
            },
        ],
        "temperature": 0,
    }
  )

```



```

    },
)
response.json()

```

```

[62]: {'id': 'chatcmpl-7csgHU4naR97dPRSUIInWkHbIh2emk',
      'object': 'chat.completion',
      'created': 1689501013,
      'model': 'gpt-3.5-turbo-0613',
      'choices': [{'index': 0,
                    'message': {'role': 'assistant',
                                'content': 'The last question you asked me was "What was the last question I asked you?"'},
                    'finish_reason': 'stop'}],
      'usage': {'prompt_tokens': 16, 'completion_tokens': 17, 'total_tokens': 33}}

```

```

[63]: # Response from the GPT API
response.json().get("choices")[0].get("message").get("content")

```

```

[63]: 'The last question you asked me was "What was the last question I asked you?"'

```

```

[64]: # Using previous response so that the API still has context
message_for_api_call = [
    {
        "role": "user",
        "content": "Tell me what you are in 30 words.",
    }
]
response = requests.post(
    url=CHAT_API_URL,
    headers=AUTHORIZATION_HEADER,
    json={
        "model": MODEL,
        "messages": message_for_api_call,
        "temperature": 0,
    },
)
message_for_api_call.append(
    response.json().get("choices")[0].get("message")
) # Storing message returned by API
response = requests.post(
    url=CHAT_API_URL,
    headers=AUTHORIZATION_HEADER,
    json={
        "model": MODEL,
        "messages": [
            *message_for_api_call,
            {

```

```

        "role": "user",
        "content": "What was the last question I asked you?",
    },
],
    "temperature": 0,
},
)
response.json()

```

```

[64]: {'id': 'chatcmpl-7csgRm1ME8ti9Cc0IGeMH5ZqplfZz',
      'object': 'chat.completion',
      'created': 1689501023,
      'model': 'gpt-3.5-turbo-0613',
      'choices': [{'index': 0,
                    'message': {'role': 'assistant',
                                'content': 'The last question you asked me was, "Tell me what you are in 30 words."'},
                    'finish_reason': 'stop'}],
      'usage': {'prompt_tokens': 66, 'completion_tokens': 19, 'total_tokens': 85}}

```

```

[65]: # Response from the GPT API
response.json().get("choices")[0].get("message").get("content")

```

```

[65]: 'The last question you asked me was, "Tell me what you are in 30 words."'

```

0.3 Generating images with OpenAI APIs

```

[10]: response = requests.post(
      url=IMAGE_API_URL,
      headers=AUTHORIZATION_HEADER,
      json={
          "prompt": "A beautiful scenery",
          "n": 1,
          "size": "512x512",
          "response_format": "b64_json",
      },
  )

```

```

[11]: from IPython.display import Image
      import base64

      Image(base64.b64decode(response.json().get("data")[0].get("b64_json")))

```

```

[11]:

```

