Text moderation

WORKING WITH THE OPENAI API

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Going beyond text completions...

Completions → generate *new text output* using text prompt

Beyond completions:

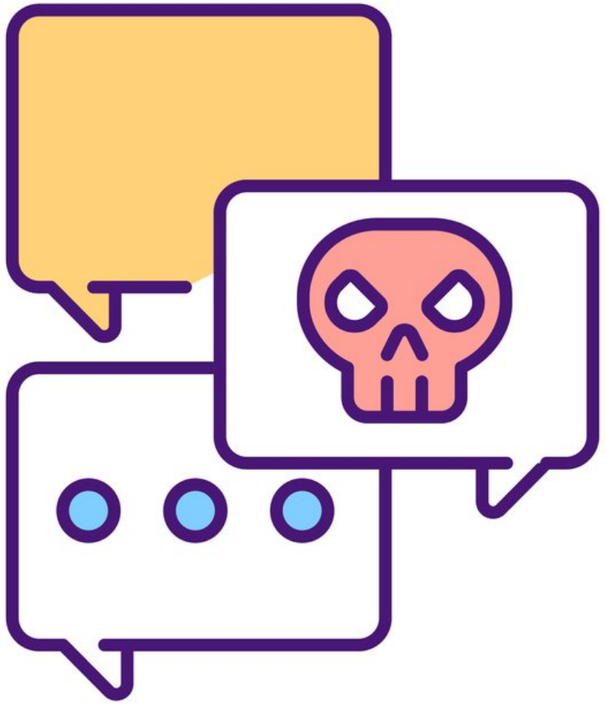
- Text moderation
- Audio transcription and translation
- Combining models together

Text moderation

- Identifying inappropriate content

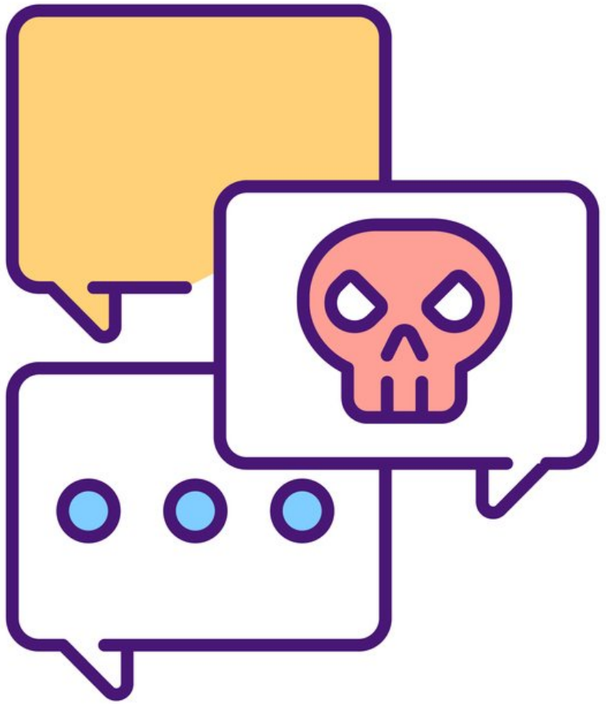
Traditionally,

- Moderators flag content *by-hand*
  - Time-consuming
- **Keyword pattern matching**
  - Lacks *nuance* and understanding of *context*



Violation categories

- Identify violations of terms or use
- Differentiate violation type by category
  - Violence
  - Hate Speech



[1] https://openai.com/policies/usage-policies [2] https://platform.openai.com/docs/guides/moderation/overview

Creating a moderations request

```
from openai import OpenAI

client = OpenAI(api_key="ENTER API KEY")

response = client.moderations.create(
  model="text-moderation-latest",
  input="I could kill for a hamburger."
)
```

Interpreting the results

- `categories`
  - `true` / `false` indicator of category violation
- `category_scores`
  - Confidence of a violation
- `flagged`
  - `true` / `false` indicator of a violation

```
print(response.model_dump())
```

```
{'id': 'modr-8S80XeaVqvs4mmbufDBP9gTAmEGXP',
 'model': 'text-moderation-006',
 'results':
   [{'categories': {'harassment': False,
                    'harassment_threatening': False,
                    'hate': False,
                    'hate_threatening': False,
                    ...},
     'category_scores': {'harassment': 2.775940447463654e-05,
                         'harassment_threatening': 1.3526056363843963e-06,
                         'hate': 2.733528674525587e-07,
                         'hate_threatening': 4.930571506633896e-08,
                         ...},
     'flagged': False}]
}
```

Interpreting the category scores

```
print(response.results[0].category_scores)
```

```
CategoryScores(harassment=2.775940447463654e-05,
               harassment_threatening=1.3526056363843963e-06,
               hate=2.7335286745255 87e-07,
               hate_threatening=4.930571506633896e-08,
               ...,
               violence=0.050085403025 1503,
               ...)
```

- Larger numbers → greater certainty of violation
- Numbers $\neq$ probabilities

Considerations for implementing moderation

```
CategoryScores(harassment=2.775940447463654e-05,
               harassment_threatening=1.3526056363843963e-06,
               hate=2.733528674525587e-07,
               hate_threatening=4.930571506633896e-08,
               ...,
               violence=0.050085403025150 3,
               ...)
```

- Determine appropriate thresholds for each use case
- Stricter thresholds may result in fewer *false negatives*
- More lenient thresholds may result in fewer *false positives*

Let's practice!

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Speech-to-Text Transcription with Whisper

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OpenAI's Whisper

Speech-to-text capabilities:

- Transcribe audio
- Translate and transcribe audio into *English*
- Supports `mp3`, `mp4`, `mpeg`, `mpga`, `m4a`, `wav`, and `webm` (25 MB limit)

- Meeting transcripts
- Video captions

Loading audio files

Example: transcribe `meeting_recording_20230602.mp3`

```
audio_file = open("meeting_recording_20230602.mp3", "rb")
```

If the file is located in a *different directory*

```
audio_file = open("path/to/file/meeting_recording_20230602.mp3", "rb")
```

Making a request

- Audio endpoint

```
audio_file= open("meeting_recording_20230602.mp3", "rb")

response = client.audio.transcriptions.create(model="whisper-1", file=audio_file)

print(response)
```

```
Transcription(text="Welcome everyone to the June product monthly. We'll get started in...)
```

The transcript

```
print(response.text)
```

```
Welcome everyone to the June product monthly. We'll get started in just a minute.
Alright, let's get started. Today's agenda will start with a spotlight from Chris
on the new mobile user onboarding flow, then we'll review how we're tracking on
our quarterly targets, and finally, we'll finish with another spotlight from Katie
who will discuss the upcoming branding updates...
```

- **Don't use sensitive or confidential recordings**

Transcribing non-English languages

Afrikaans, Arabic, Armenian, Azerbaijani, Belarusian, Bosnian, Bulgarian, Catalan, Chinese, Croatian, Czech, Danish, Dutch, English, Estonian, Finnish, French, Galician, German, Greek, Hebrew, Hindi, Hungarian, Icelandic, Indonesian, Italian, Japanese, Kannada, Kazakh, Korean, Latvian, Lithuanian, Macedonian, Malay, Marathi, Maori, Nepali, Norwegian, Persian, Polish, Portuguese, Romanian, Russian, Serbian, Slovak, Slovenian, Spanish, Swahili, Swedish, Tagalog, Tamil, Thai, Turkish, Ukrainian, Urdu, Vietnamese, and Welsh.

1. `open()` audio file
2. Make a transcriptions request to the Audio endpoint
3. Extract text from the response

Let's practice!

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Speech Translation with Whisper

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Whisper's translation capabilities

- Translate and transcribe audio
- Currently limited to *English* transcripts
- Supports `mp3`, `mp4`, `mpeg`, `mpga`, `m4a`, `wav`, and `webm` (25 MB limit)

Translating audio

```
audio_file = open("non_english_audio.m4a", "rb")

response = client.audio.translations.create(model="whisper-1", file=audio_file)

print(response.text)
```

```
The search volume for keywords like A I has increased rapidly since the launch of
Cha GTP.
```

- Performance can vary wildly, depending on:
  - Audio quality
  - Audio language
  - Model's knowledge of the subject matter

Bringing prompts into the mix

- Can provide `prompt` to the model (optional)
- Improve response quality by:
  - Providing an example of desired style
  - Provide context on transcript context

Example: Retaining filler words

```
prompt="Ok, ummm... this is what we should do, like, to uhhh... increase revenue."
```

Example: Provide context

```
prompt="A discussion on how to increase revenue."
```

Adding in a prompt

```
audio_file = open("non_english_audio.m4a", "rb")
prompt = "The transcript is about AI trends and ChatGPT."

response = client.audio.translations.create(model="whisper-1",
                                            file=audio_file,
                                            prompt=prompt)

print(response.text)
```

```
The search volume for keywords like AI has increased rapidly since the launch of
ChatGPT.
```

Let's practice!

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Combining models

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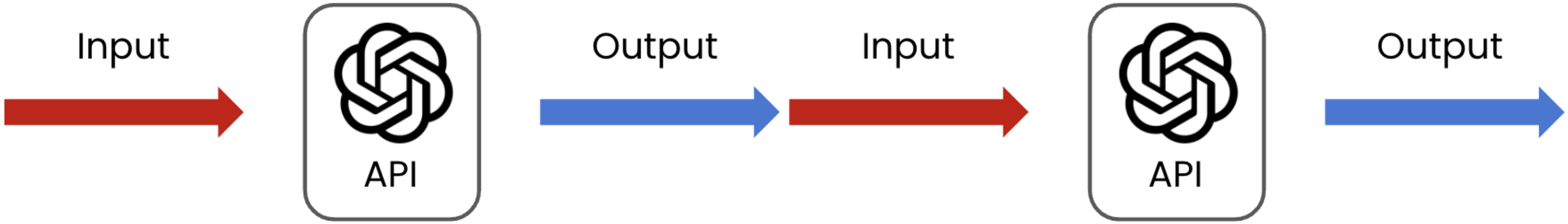
Combining models

Combining models



- **Chaining:** Feeding output from one model into another
- Can use the *same model* multiple times
  - **Example:** validating original response
- Or *different models*
  - **Example:** summarizing meeting recordings

Example: Extracting meeting attendees

```
audio_file = open("meeting_recording_20230608.mp4", "rb")

audio_response = client.audio.transcriptions.create(model="whisper-1", file=audio_file)

transcript = audio_response.text
prompt = "Extract the attendee names from the start of this meeting transcript: " + transcript

chat_response = client.chat.completions.create(
    model="gpt-4o-mini",
    messages=[
        {"role": "user", "content": prompt}
    ]
)

print(chat_response.choices[0].message.content)
```

Example: Extracting meeting attendees

```
The meeting attendees were Otis, Paul, Elaine, Nicola, Alan, and Imran.
```

Note:

- **No guarantees** on model performance
- Ensure that applications are **well-tested**
- Usage should be restricted to **non-sensitive data**

Let's practice!

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Congratulations!

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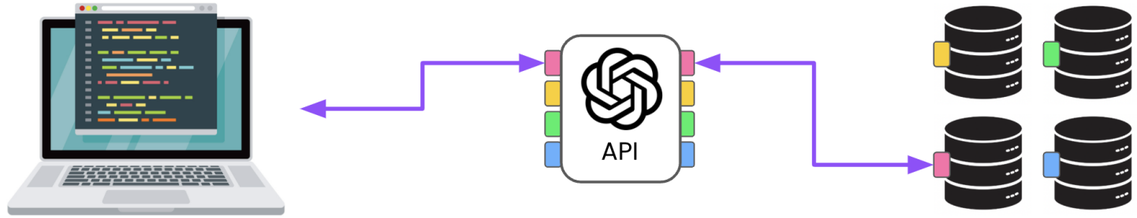
Chapter 1

- What the OpenAI API is used for
- How to create requests to the Chat Completions endpoint

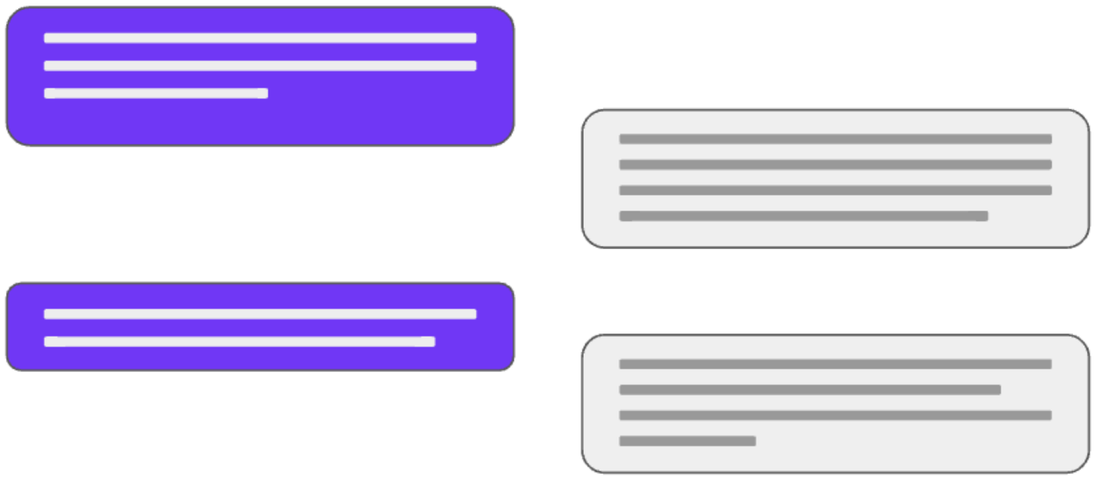



```
client = OpenAI(api_key="<OPENAI_API_TOKEN>")

response = client.chat.completions.create(
    model="gpt-4o-mini",
    messages=[{"role": "user", "content": "..."}]
)
print(response.choices[0].message.content)
```

Chapter 2

```
response = client.chat.completions.create(
  model="gpt-4o-mini",
  messages=[{"role": "user", "content": "..."}],
  max_tokens=20,
  temperature=0.5
)
```



- Q&A
- Text transformation
- Content generation
- Sentiment analysis
- Categorization
- `max_tokens` and `temperature`
- Multi-turn conversation with chat *roles*

Chapter 3

Moderation

- Detect inappropriate content

Audio

- Translate
- Transcribe

Chaining

- Automating complex tasks

What next?

AI application development:

- **OpenAI Fundamentals** skill track
- **Developing AI Applications** skill track
- **Associate AI Engineer for Developers** career track

Apply your learning in projects:

- **Planning a Trip to Paris with the OpenAI API**
- **Enriching Stock Market Data using the OpenAI API**

Let's practice!

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