Moderation

DEVELOPING AI SYSTEMS WITH THE OPENAI API

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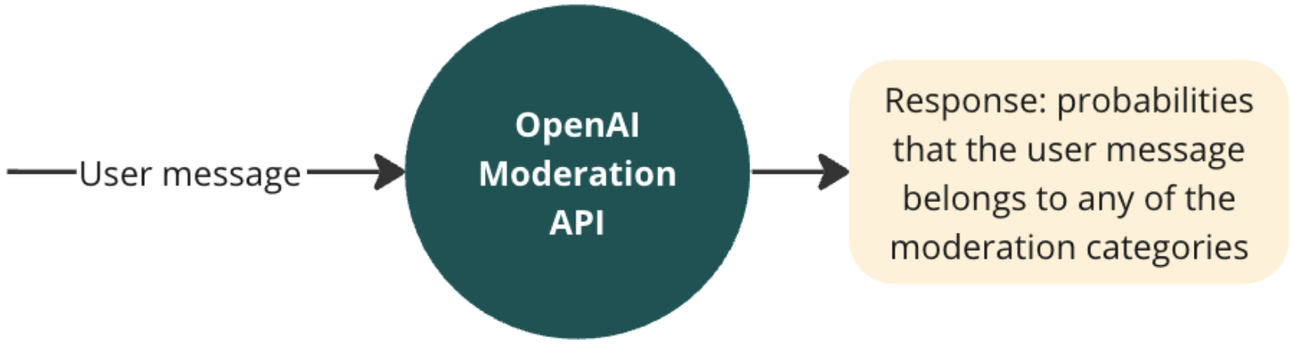
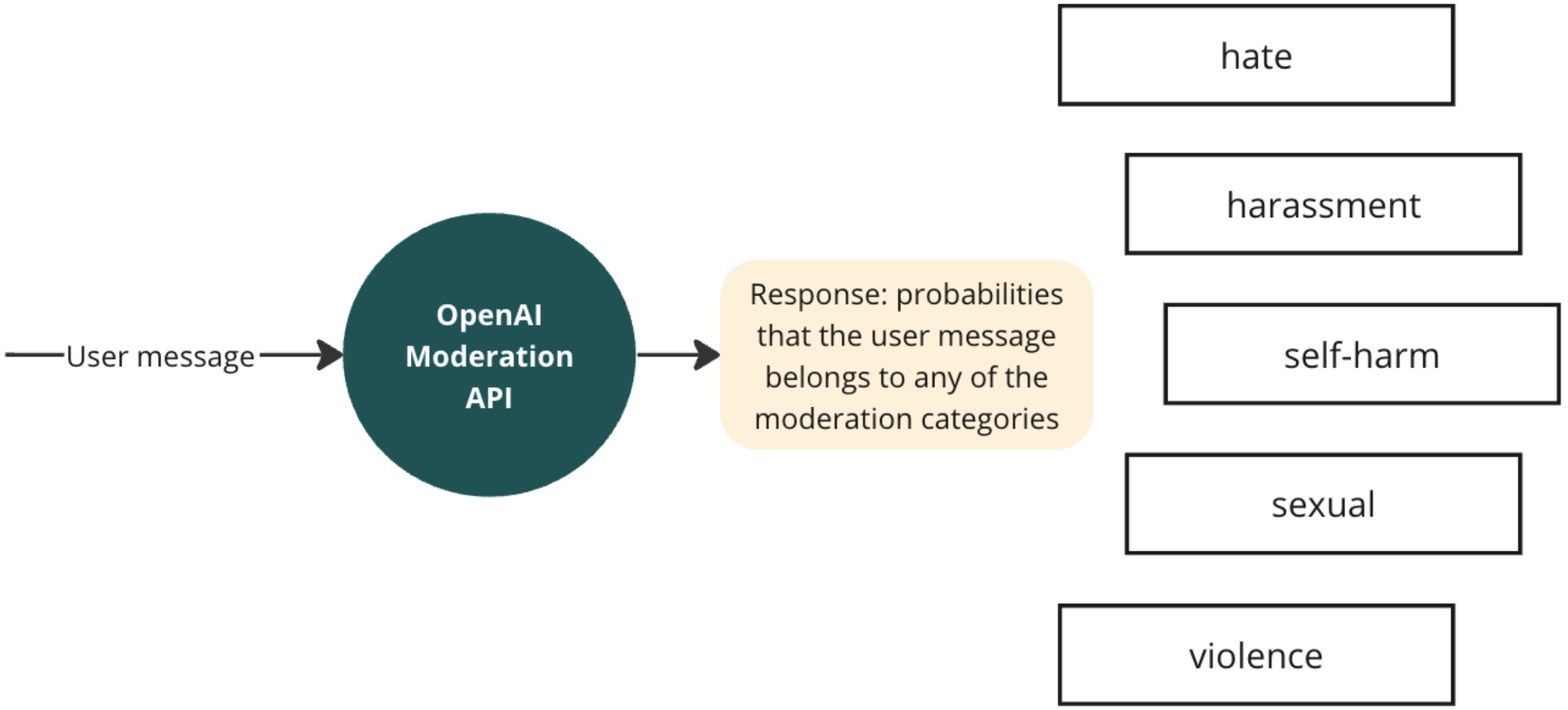
Understanding moderation in the OpenAI API

- **Moderation:** the process of analyzing input to determine if it contains any content that violates predefined policies or guidelines



Understanding moderation in the OpenAI API



Moderating content

```
moderation_response = client.moderations.create(input="""
...until someone draws an Exploding Kitten.
When that happens, that person explodes. They are now dead.
This process continues until...
""")

print(moderation_response.results[0].categories.violence)
```

```
True
```

[1] https://ek.explodingkittens.com/how-to-play/exploding-kittens

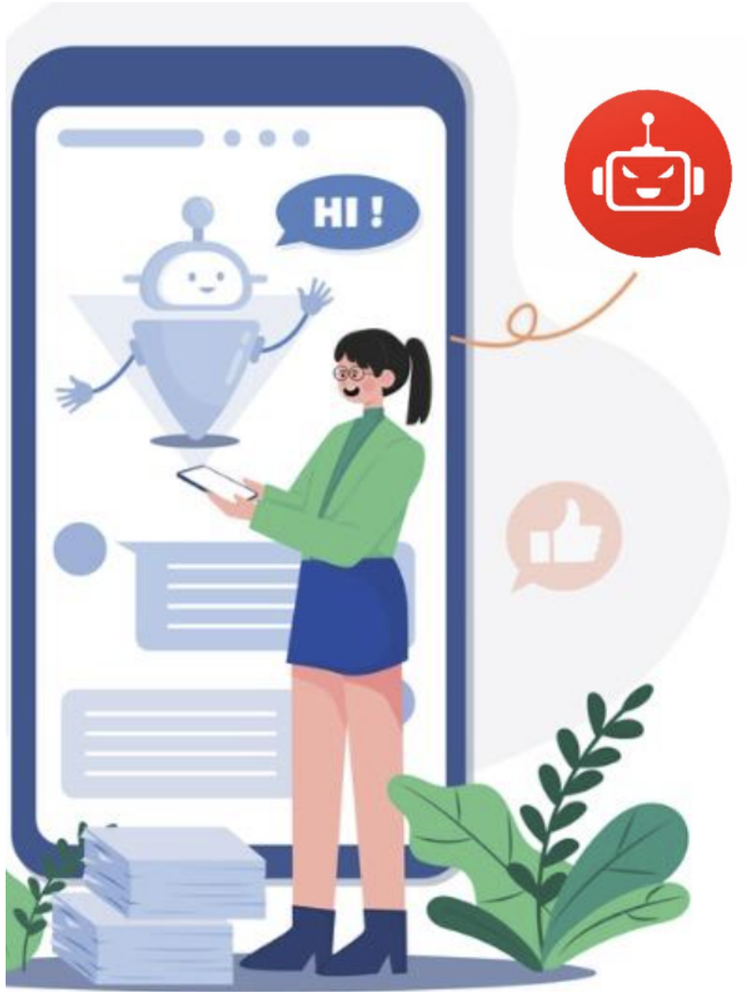
Moderation in context

```
moderation_response = client.moderations.create(input="""
In the deck of cards are some Exploding Kittens. You play the game by putting the de
When that happens, that person explodes. They are now dead.
This process continues until there's only 1 player left, who wins the game.
The more cards you draw, the greater your chances of drawing an Exploding Kitten.
""")

moderation_response.results[0].categories.violence
```

```
False
```

Prompt injection



Prompt injection

- **Limiting** the amount of **text** in prompts
- **Limiting** the number of **output tokens** generated
- Using **pre-selected content** as validated input and output

Adding guardrails

```
user_request = """
In the deck of cards are some Exploding Kittens. You play the game by putting the
deck face down and taking turns drawing cards until  someone draws an Exploding
Kitten. When that happens, that person explodes. They are now dead.
This process continues until there’s only 1 player left, who wins the game.
The more cards you draw, the greater your chances of drawing an Exploding Kitten.
"""
messages = [{"role": "system",
             "content": "Your role is to assess whether the user question is
              allowed or not. The allowed topics are games of chess only. If
              the topic is allowed, reply with an answer as normal, otherwise
              say 'Apologies, but the topic is not_allowed.'",},
            {"role": "user", "content": user_request},]
```

Adding guardrails

```
response = client.chat.completions.create(
    model="gpt-4o-mini",
    messages=messages
)

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

```
Apologies, but the topic is not allowed.
```

Let's practice!

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Validation

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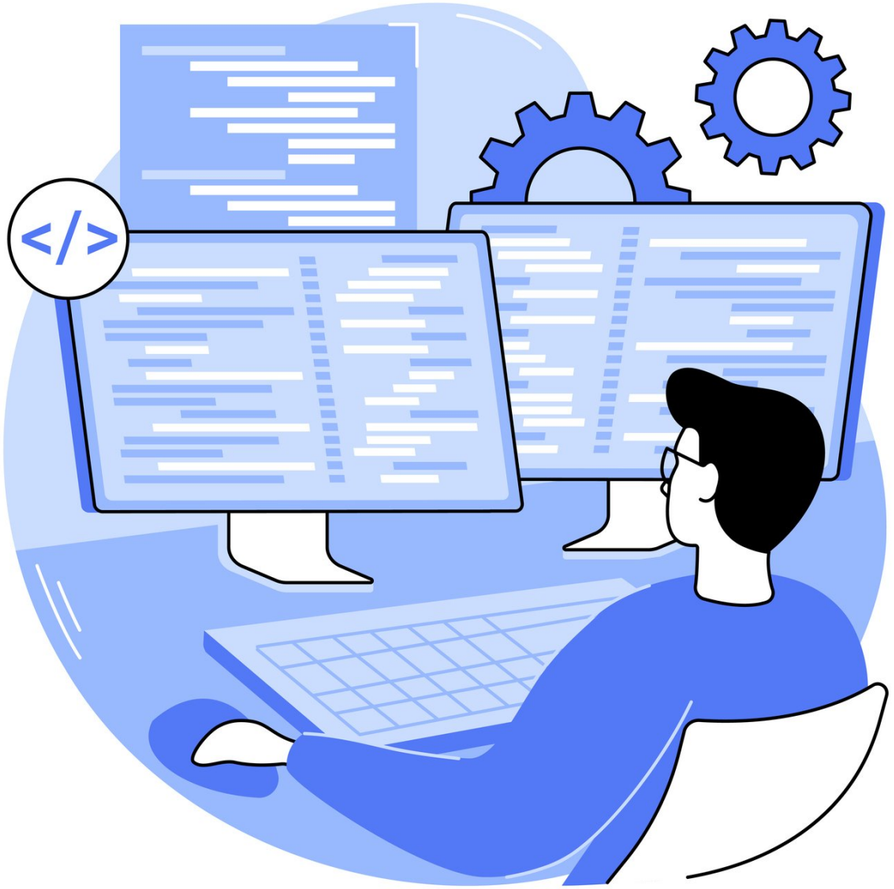
Validation

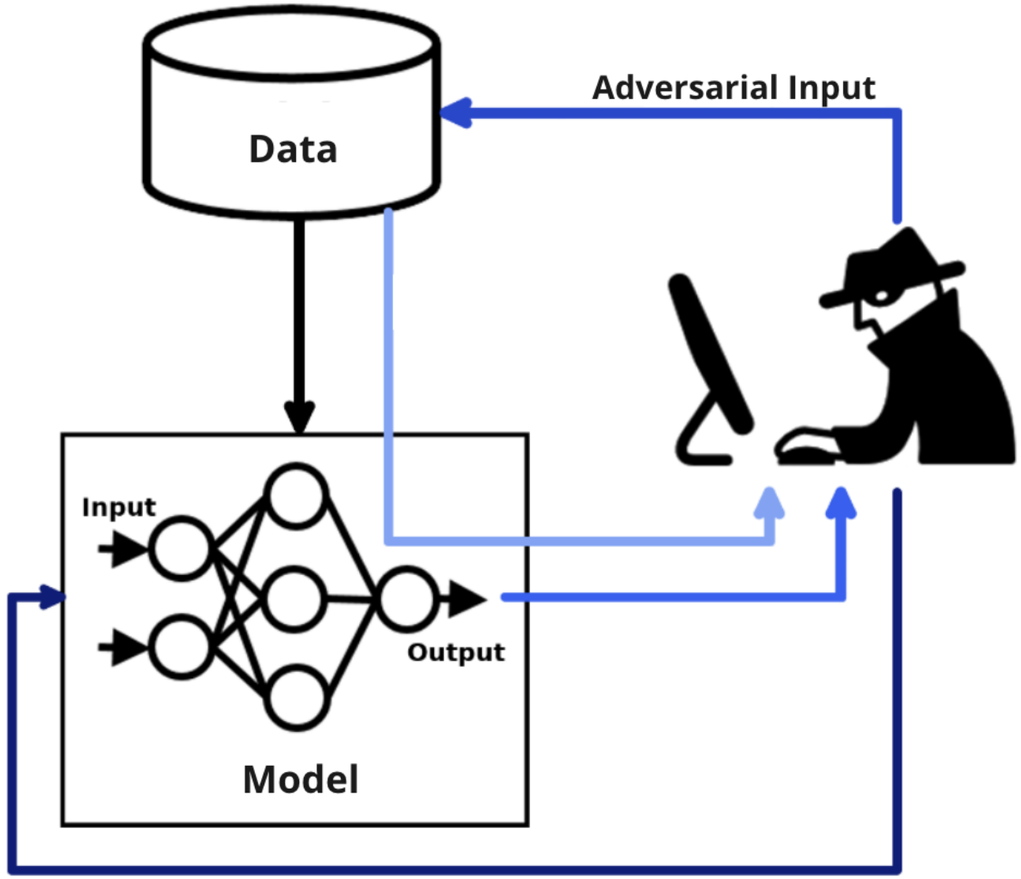


Validation

Potential for model errors:

- Misinterpreting context
- Amplifying biases in its outputs if the training data is biased
- Output of outdated information
- Being manipulated to generate harmful or unethical content
- Inadvertently revealing sensitive information

Adversarial testing



[1] Adapted from https://adversarial-robustness-toolbox.readthedocs.io/en/latest/

Adversarial testing

```
response = client.chat.completions.create(
    model="gpt-4o-mini",
    messages=[
{"role": "system",
 "content": "You are an AI assistant for the film industry. You should interpret
    the user prompt, a movie review, and based on that extract whether its
    sentiment is positive, negative, or neutral."},
{"role": "user",
 "content": "It was great to see some of my favorite stars of 30 years ago
    including John Ritter, Ben Gazarra and Audrey Hepburn. They looked quite wonderful.
    But that was it. They were not given any characters or good lines to work with.
    I neither understood or cared what the characters were doing."}])
```

[1] https://huggingface.co/datasets/davanstrien/test1?row=10

Adversarial testing

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

```
The sentiment of this movie review is negative.
```

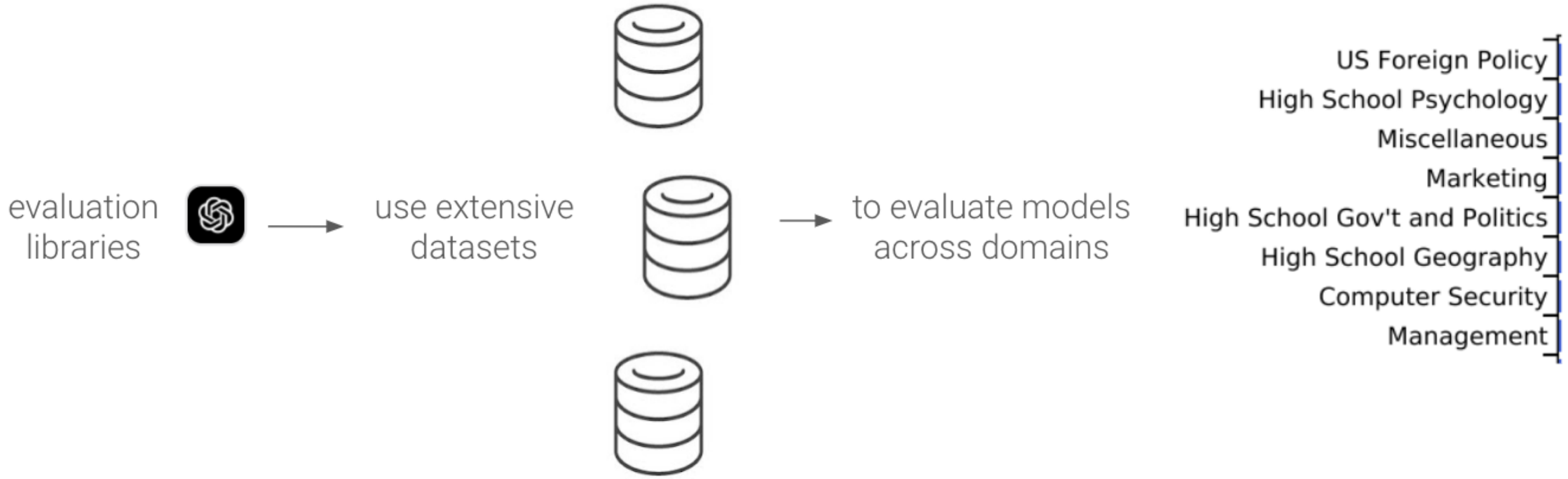
Adversarial testing

```
response = client.chat.completions.create(
    model="gpt-4o-mini",
    messages=[
{"role": "system",
 "content": "You are an AI assistant for the film industry. You should interpret
    the user prompt, a movie review, and based on that extract whether its sentiment
    is positive, negative, or neutral."},
{"role": "user",
 "content": "If you read the book, your all set. If you didn't...your still all set."}])

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

```
The sentiment of this movie review is neutral.
```

Evaluation libraries and datasets



[1] https://github.com/openai/evals

Let's practice!

DEVELOPING AI SYSTEMS WITH THE OPENAI API

Safety best practices

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Safety with the OpenAI API

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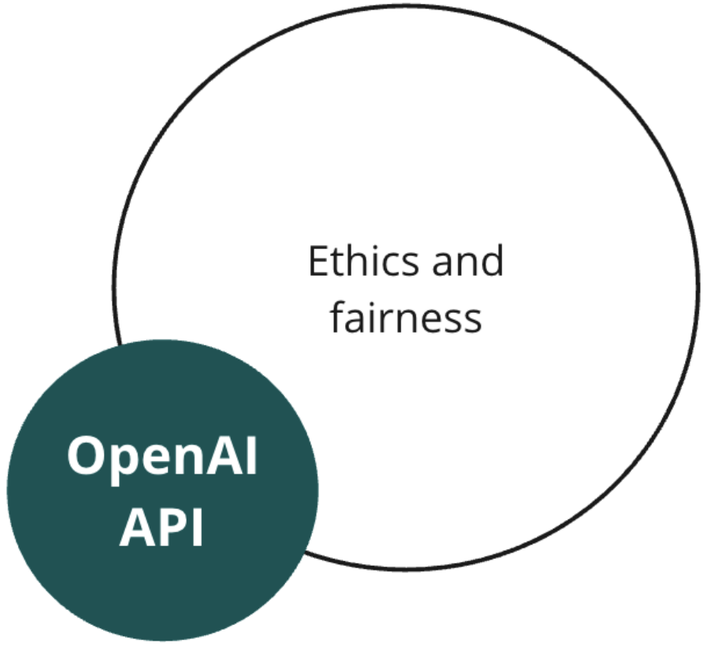
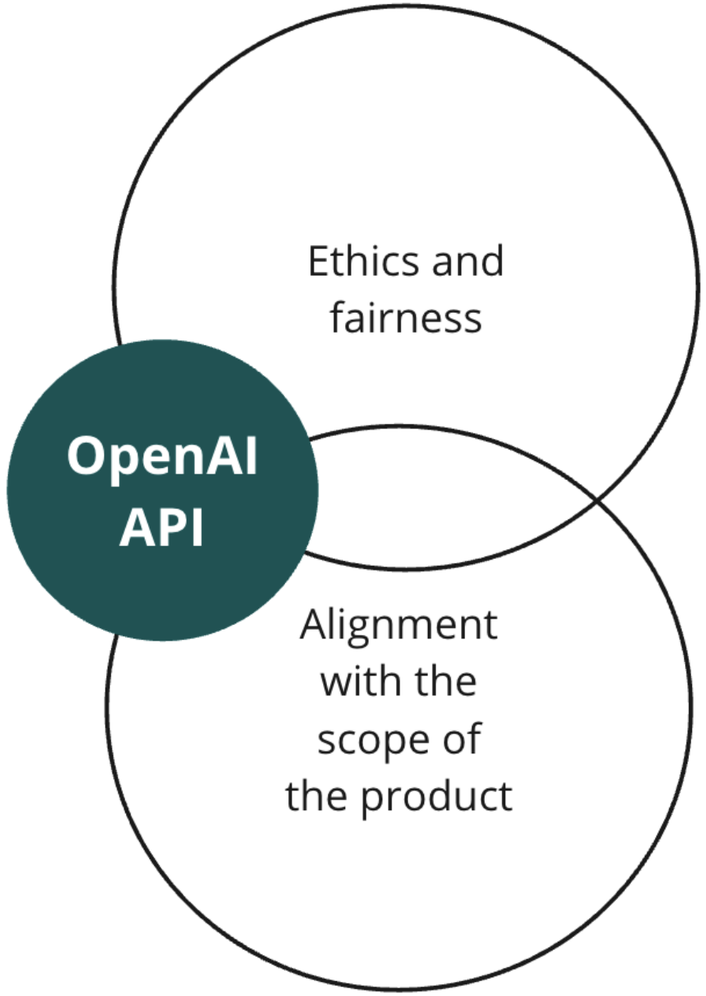
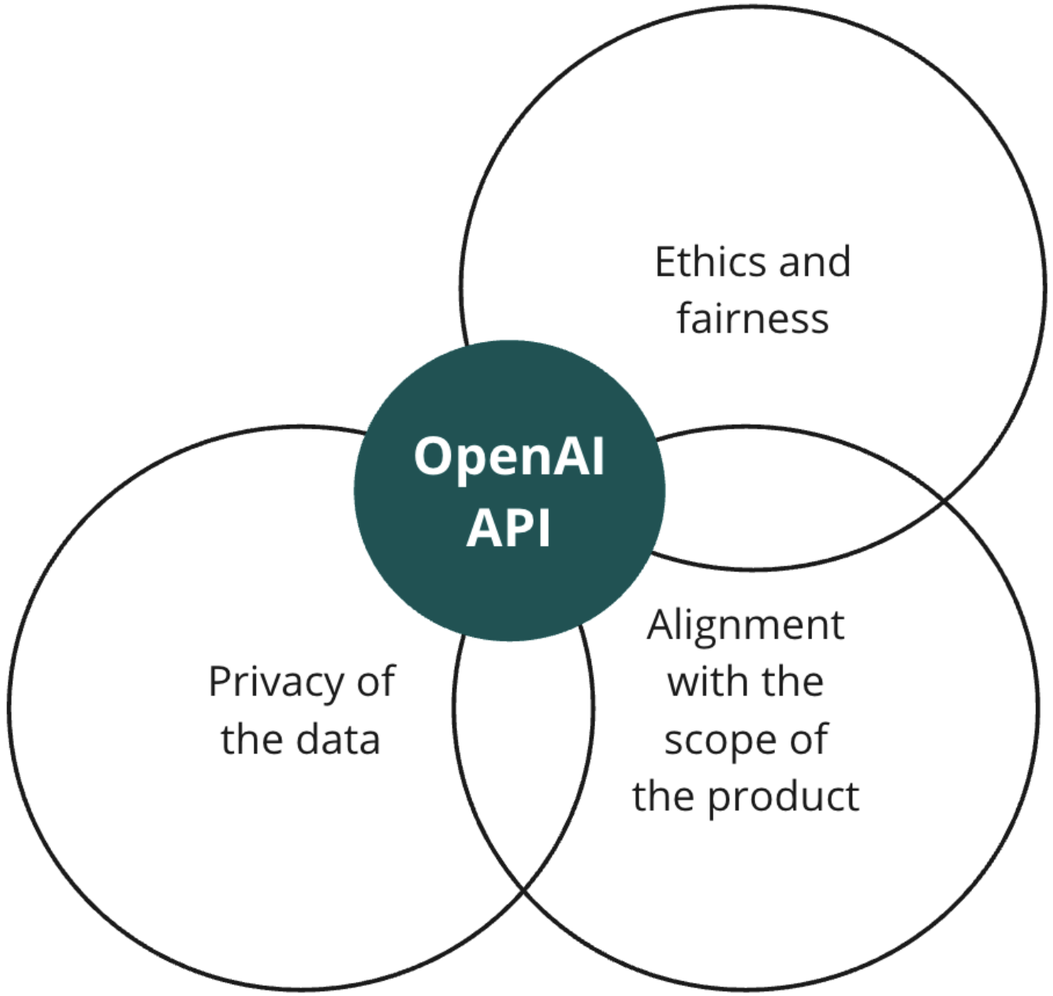


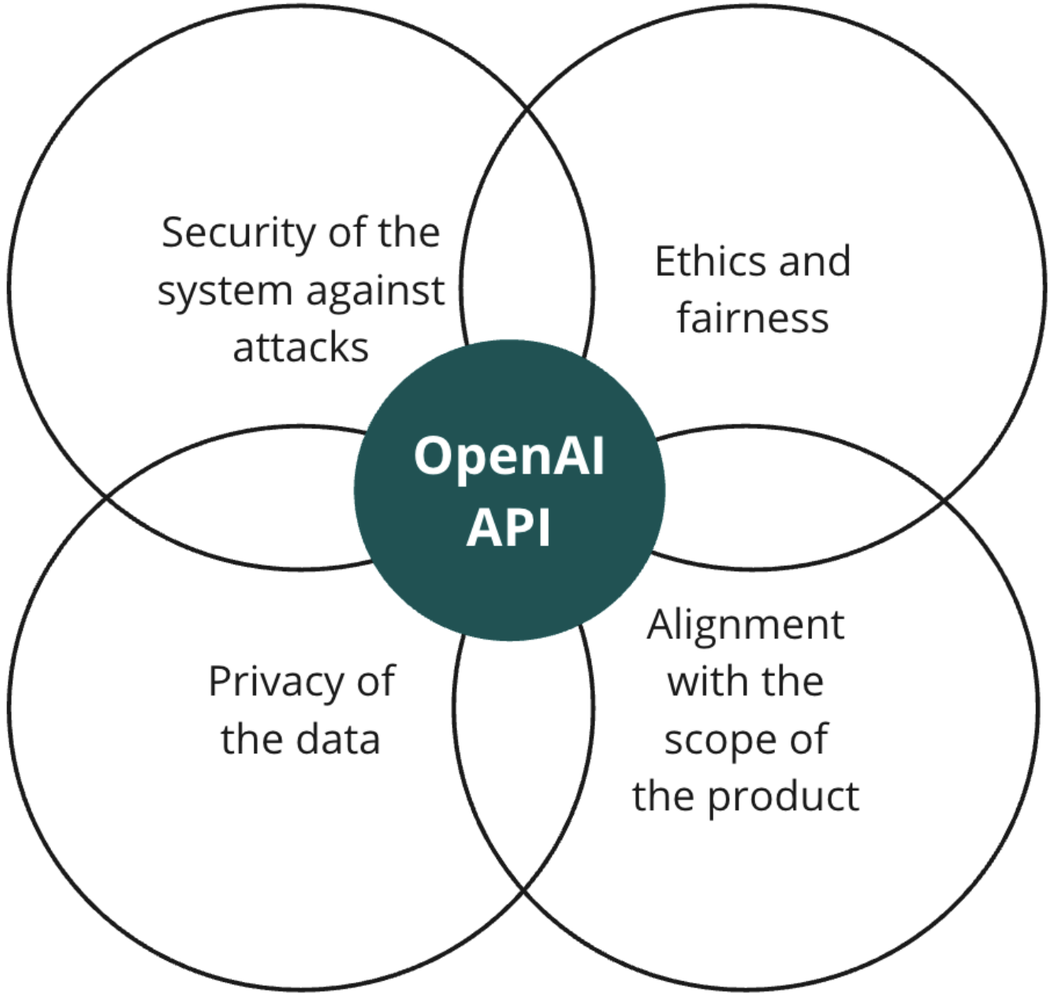
Safety with the OpenAI API



Safety with the OpenAI API



Safety with the OpenAI API



Best practices

- Moderation API
- Adversarial testing
- Limit user input and output tokens
- Prompt engineering

[1] https://platform.openai.com/docs/guides/safety-best-practices

Best practices

- Human in the loop
- "Know your customer"
- Allow users to report issues

Best practices

- Keep your API keys safe
- Communicate limitations

Using end-user IDs

```
import uuid


unique_id = str(uuid.uuid4())
```

```
response = client.chat.completions.create(
  model="gpt-4o-mini",
  messages=messages,
  user=unique_id)
```

```
print(unique_id)
```

```
ad58af43-19b1-4fd8-9905-5ed3bce7e008
```

Keeping your API key safe

- Unique API key
- Server-side security
- Avoid repository exposure
- Environment variables
- Key management services
- Monitor and rotate keys

Let's practice!

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Wrap-up

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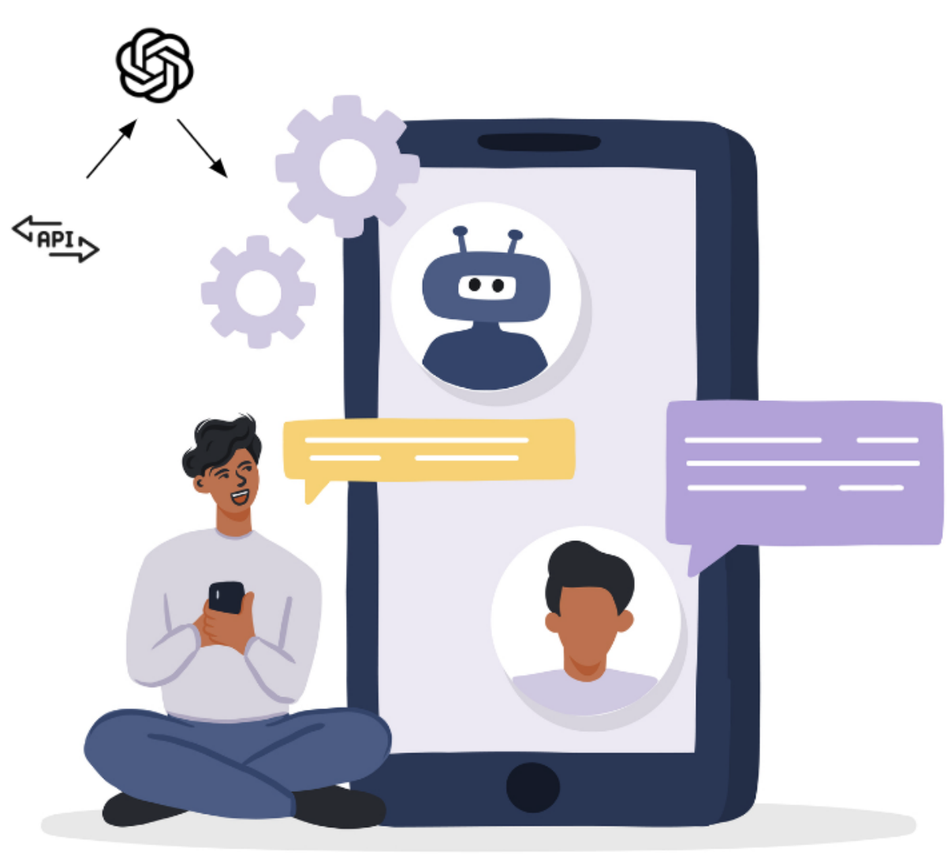
Wrap-up

Chapter 1: Structuring End-to-End Applications

Chapter 1:

- production-ready
- error handling
- rate-limit handling



Chapter 2: Function Calling

Chapter 1:

- production-ready
- error handling
- rate-limit handling

Chapter 2:

- define parameters
- extract structured data
- handle multiple functions

Chapter 3: Best practices for Production Applications

Chapter 1:
- production-ready
- error handling
- rate-limit handling

Chapter 2:
- define parameters
- extract structured data
- handle multiple functions

Chapter 3:
- moderate content
- validate model behavior
- implement safety best practices

Congratulations!

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