

Exploring Practical Applications of Working with the OpenAI API



Xavier Morera

Helping developers create epic applications

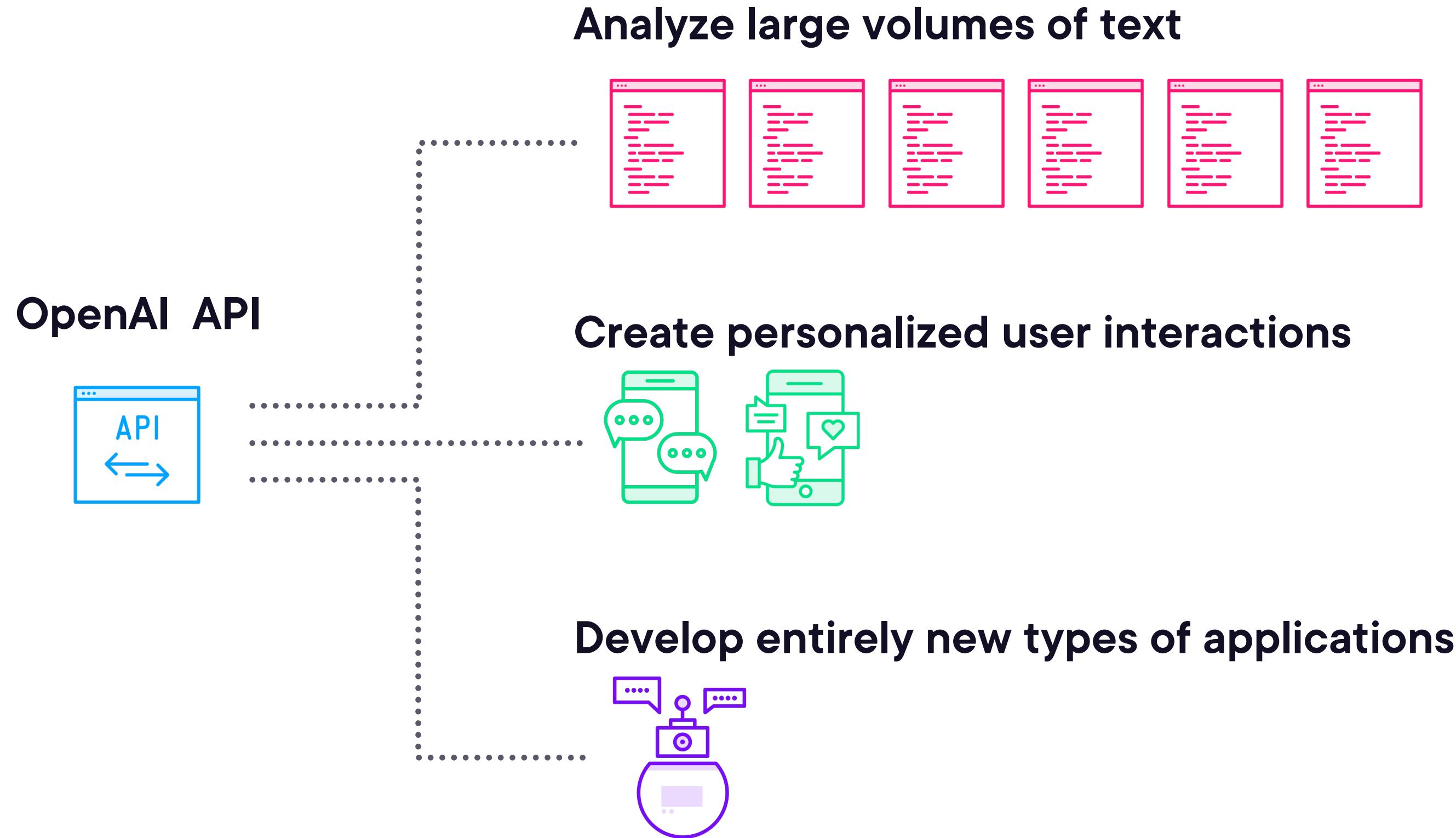
www.xavermorera.com / www.bigdatainc.org / www.lupo.ai



Practical Applications of the OpenAI API



Practical Applications of the OpenAI API



Practical Applications Covered in the Module

Summarization

Classification

Sentiment
analysis

Named entity
recognition



Practical Applications Covered in the Module

Keyword
extraction

Language
translation

Text
parsing

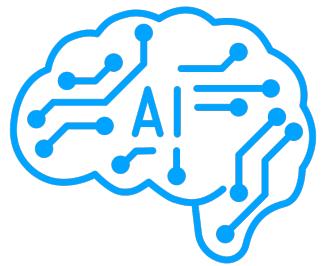
Paraphrasing



XYZ Steps



Prepare the text



Utilize the OpenAI API for XYZ



Review and fine-tune



Summarization



Summarization

Process of condensing a longer piece of text or content into a shorter, coherent version while retaining its essential information and meaning.



Summarization

Crucial for condensing information with key points from lengthy pieces of text.

Effective summarization can save time.



Types of Summarization

Created by selecting and extracting sentences directly from the original text

Sentences selected based on their importance

Does not generate new sentences; instead relies on existing content

Extractive Summarization

Generates a summary that may or may not include sentences from the original text

Rephrases and condenses the content

Generates more human-like content, which requires deeper understanding of the text

Abstractive Summarization



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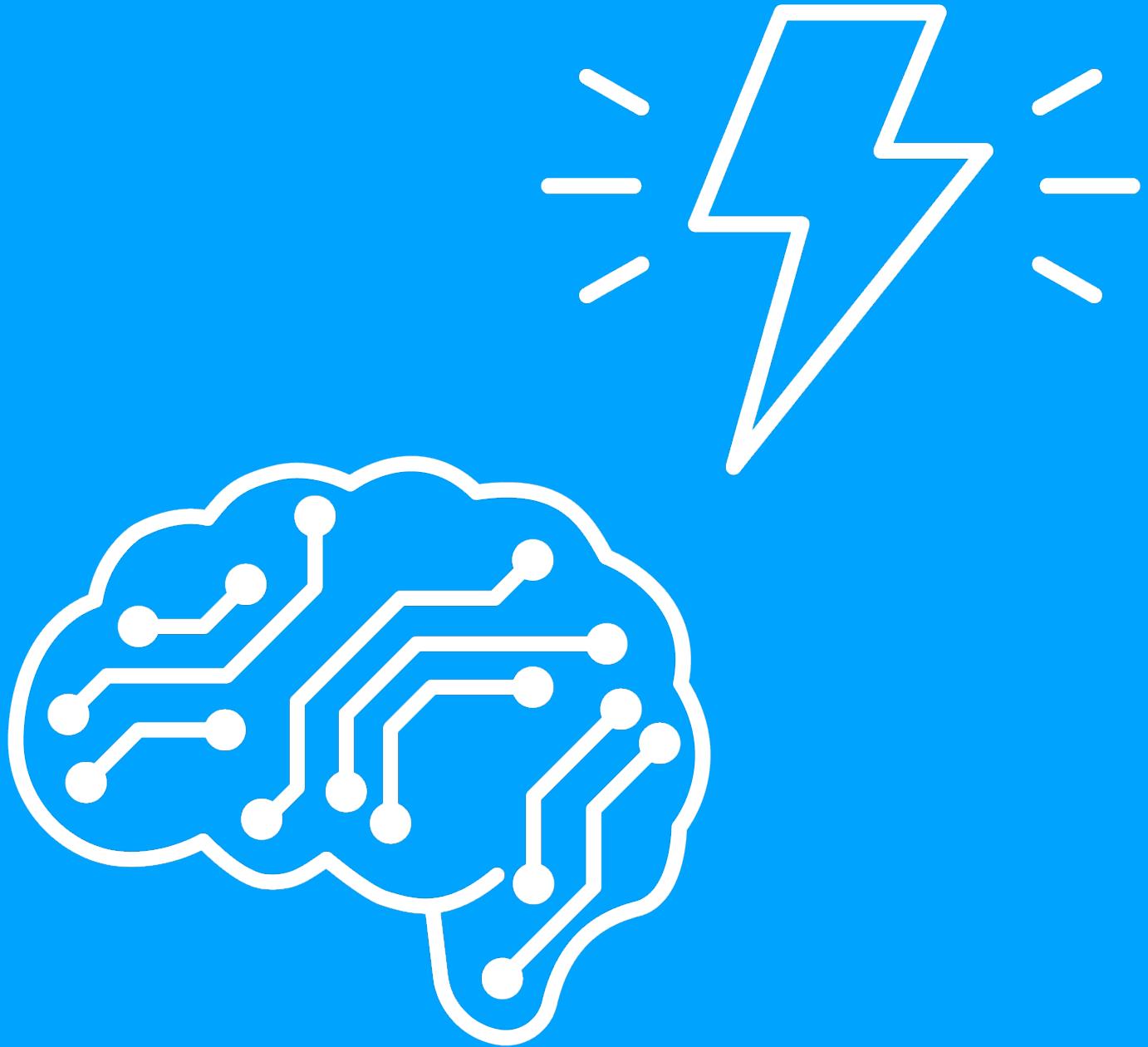
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Abstractive Summarization



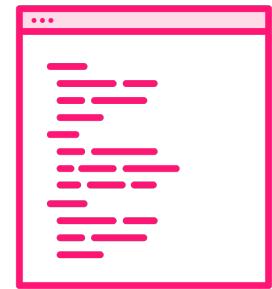


Time consuming...

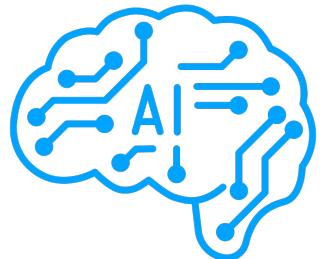


Very fast!

Summarization Steps



Prepare the text



Utilize the OpenAI API for summarization



Review and fine-tune





Summarization



Classification

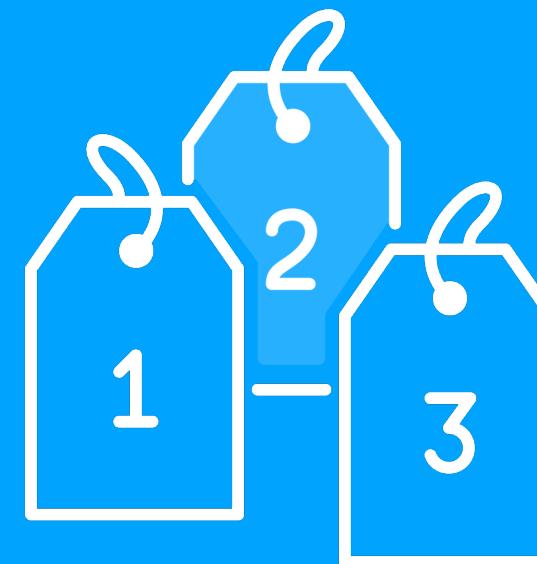
Classification

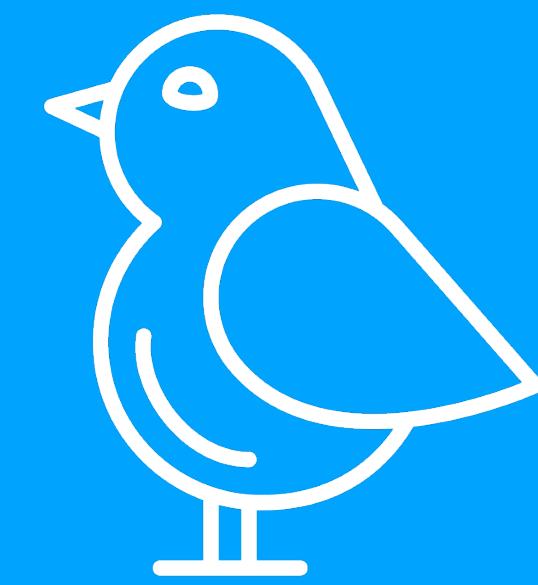
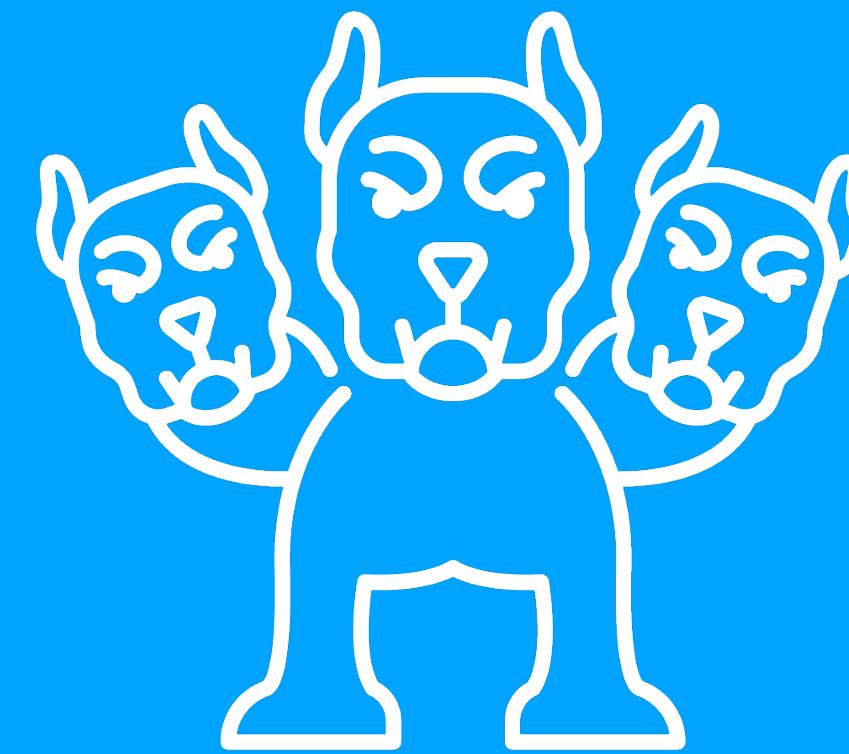
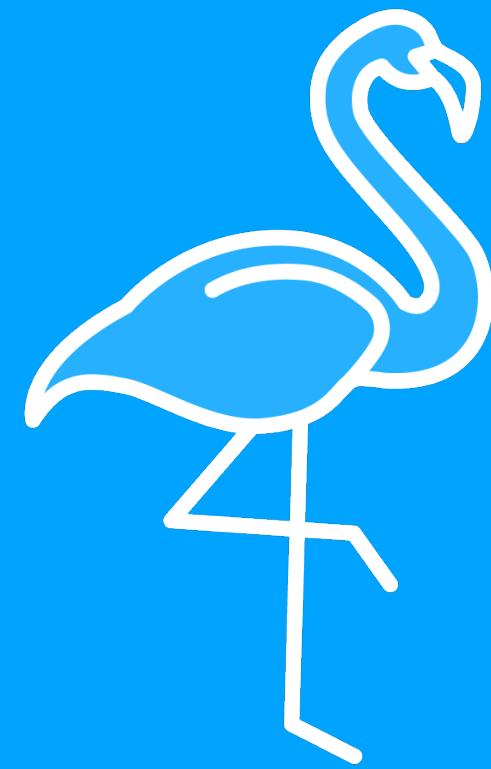
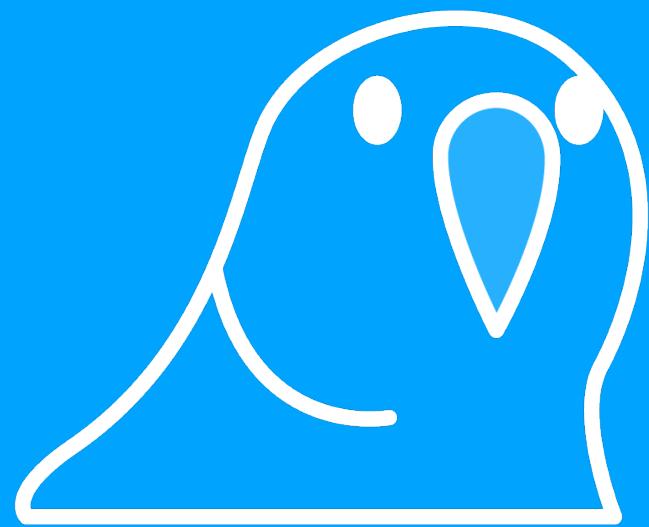
Process of categorizing or labeling items, data, or instances into predefined classes or categories based on their characteristics, attributes, or features.



Classification

Goal of classification is to assign each item to the correct category or class, allowing for effective organization, analysis, and decision-making.







Dog



Bird

Machine Learning with Python - Practical Application

by Xavier Morera

Many problems are solved using Machine Learning. This course will teach you how to pick the ML algorithm that can help you create the right ML model to solve the problem at hand.

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```
In [120]: model = keras.Sequential(
    [
        layers.Flatten(input_shape=(1,)),
        layers.Dense(1, activation="linear"),
    ]
)
optimizer = keras.optimizers.SGD(learning_rate=0.1)
model.compile(loss='mse', optimizer=optimizer, metrics=['accuracy'])
history = model.fit(x_width, y_weight, epochs=10, verbose=1, validation_split=0.1, shuffle=False)
y_pred = model.predict(x_width)

Epoch 1/10
5/5 [=====] - 0s 26ms/step - loss: 0.1850 - accuracy: 0.0000e+00 - val_loss: 1.5773 - val_accuracy: 0.0000e+00
Epoch 2/10
5/5 [=====] - 0s 4ms/step - loss: 0.1162 - accuracy: 0.0000e+00 - val_loss: 1.3276 - val_accuracy: 0.0000e+00
Epoch 3/10
5/5 [=====] - 0s 4ms/step - loss: 0.1036 - accuracy: 0.0000e+00 - val_loss: 1.2344 - val_accuracy: 0.0000e+00
Epoch 4/10
5/5 [=====] - 0s 4ms/step - loss: 0.0980 - accuracy: 0.0000e+00 - val_loss: 1.1780 - val_accuracy: 0.0000e+00
Epoch 5/10
5/5 [=====] - 0s 4ms/step - loss: 0.0916 - accuracy: 0.0000e+00 - val_loss: 1.1360 - val_accuracy: 0.0000e+00
Epoch 6/10
5/5 [=====] - 0s 4ms/step - loss: 0.0852 - accuracy: 0.0000e+00 - val_loss: 1.0980 - val_accuracy: 0.0000e+00
Epoch 7/10
5/5 [=====] - 0s 4ms/step - loss: 0.0788 - accuracy: 0.0000e+00 - val_loss: 1.0640 - val_accuracy: 0.0000e+00
Epoch 8/10
5/5 [=====] - 0s 4ms/step - loss: 0.0724 - accuracy: 0.0000e+00 - val_loss: 1.0340 - val_accuracy: 0.0000e+00
Epoch 9/10
5/5 [=====] - 0s 4ms/step - loss: 0.0659 - accuracy: 0.0000e+00 - val_loss: 1.0080 - val_accuracy: 0.0000e+00
Epoch 10/10
5/5 [=====] - 0s 4ms/step - loss: 0.0605 - accuracy: 0.0000e+00 - val_loss: 0.9850 - val_accuracy: 0.0000e+00
```

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Getting Your Hands Dirty with Machine Learning	14m 49s	
Regression	22m 1s	
Classification	40m 32s	
Dimensionality Reduction	13m 12s	
Clustering	16m 47s	
Understanding Other Types of ML Problems	7m 23s	

Course author



Xavier Morera

Xavier is very passionate about teaching, helping others understand search and Big Data. He is also an entrepreneur, project manager, technical author, trainer, and holds a few certifications with...

Course info

Level	Beginner
Rating	(13)
My rating	
Duration	1h 56m
Released	21 Dec 2021
Reviewed	31 Oct 2022

Share course



Classification Uses

Sentiment
analysis

Spam
detection

Image
recognition

And more... This OpenAI API practical application deals with text





Classification



Sentiment Analysis



Sentiment Analysis

Technique used to determine and extract the emotional tone, opinion, or sentiment expressed in text data.



Sentiment Analysis

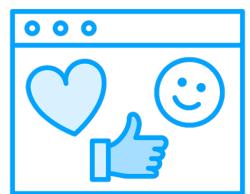
Involves analyzing a piece of text, such as a review, tweet, article, or comment.

Determine whether the expressed sentiment is positive, negative, neutral, or falls into more fine-grained categories like happiness, sadness, anger...

Applications of Sentiment Analysis



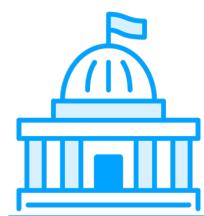
Social media



Product and service reviews



Market research



Political analysis



Brand management





Sentiment analysis



Named Entity Recognition



Named Entity Recognition

Technique that involves identifying and classifying specific named objects within a text, such as names of persons, organizations, locations, dates, and other specific types of information.



Named Entity Recognition

Primary purpose is to identify and classify named entities in the text.

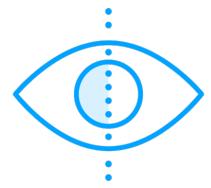
Useful for many applications like information retrieval, document organization, chatbots...

Common Types of Entities



PERSON

Names of individuals, such as "Xavier Morera"



ORGANIZATION

Names of companies, institutions, or groups, like "Pluralsight"



LOCATION

Names of places, including countries, cities, and landmarks, such as "Costa Rica"



DATE

Expressions of dates and times, such as "February 24, 2024"



EVENT

Names of events or occurrences, like "Author Summit"



An Example of NER

Xavier Morera is a Pluralsight author. He has been creating courses since October 2013. He lives in Costa Rica.



An Example of NER

Xavier Morera is a Pluralsight author. He has been creating courses since October 2013. He lives in Costa Rica.





Named entity recognition



Keyword Extraction



Keyword Extraction

Technique used for identifying the most important and relevant phrases in a text.



Keyword Extraction

Extract keywords from documents, articles, a conversation, or any other textual context.

Particularly useful for content organization, search engine optimization, and topic analysis.

Example of Keyword Extraction

A few years ago everyone was talking about Big Data. Then the "Cloud" came and revolutionized how we work.



Example of Keyword Extraction

A few years ago everyone was talking about Big Data. Then the "Cloud" came and revolutionized how we work.





Keyword extraction



Language Translation



Language Translation

Process of converting written or spoken text from one language into another while preserving the meaning and intent of the original content.



Language Translation

Critical communication tool that allows people who speak different languages to understand each other's ideas, information, and messages.

The quick
brown fox
jumps over the
lazy dog

The quick
brown fox
jumps over the
lazy dog

The quick
brown fox
jumps over the
lazy dog

The quick
brown fox
jumps over the
lazy dog

El rápido
marrón zorro
salta sobre el
perezoso perro

The quick
brown fox
jumps over the
lazy dog

El rápido zorro
marrón salta
sobre el perro
perezoso



Language translation



Text Parsing



Text Parsing

Technique for analyzing a sentence to identify its grammatical components such as nouns, verbs...



Text Parsing

Useful for linguistic analysis and information extraction.

Text Parsing

Xavier Morera is currently working as fast as he can to create this course, because he is very close to the deadline.



Text Parsing

Subject: Xavier Morera, he

Verb: is working, is

Adverb: currently

Prepositional phrase: as fast as he can

Infinitive phrase: to create this course

Conjunction: because

Adverb: very

Adjective: close

Prepositional phrase: to the deadline





Text parsing



Paraphrasing



Paraphrasing

Technique used to rephrase a piece of text using different words while retaining its meaning.



Paraphrasing

Useful for content creation, avoiding plagiarism, and improving readability.

Original Phrase

Xavier Morera is currently working as fast as he can to create this course, because he is very close to the deadline.



Paraphrased

Xavier Morera is putting in maximum effort to develop this course promptly, as the deadline is rapidly approaching.



Other Possibilities

Xavier Morera is currently sprinting like a cheetah on roller skates to whip up this course, because the deadline is breathing down his neck like a hungry T-Rex.





Paraphrasing





Real World Applications



[Blog](#)

GPT-3 powers the next generation of apps

Over 300 applications are delivering GPT-3-powered search, conversation, text completion, and other advanced AI features through our API.

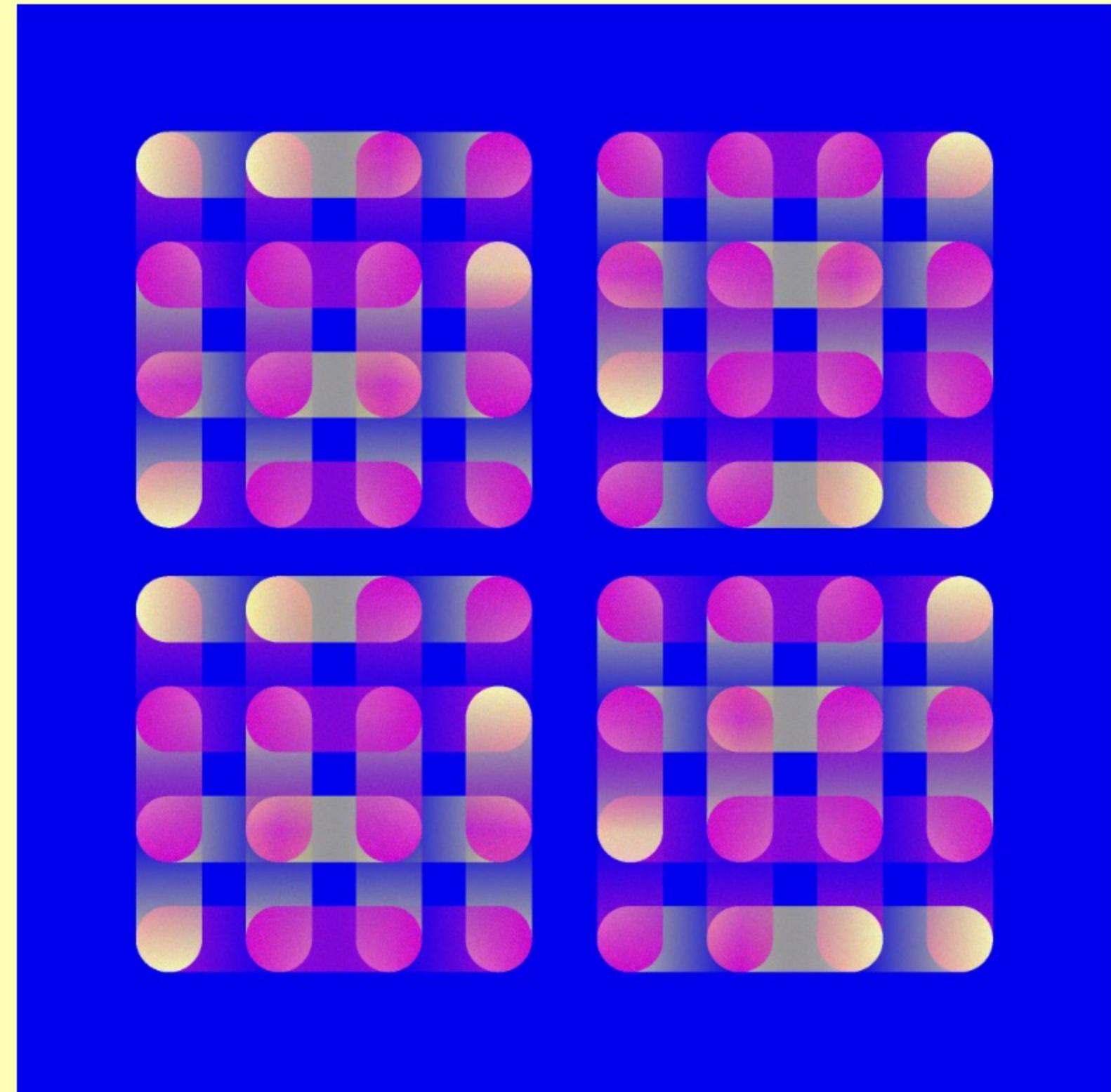


Illustration: Ruby Chen