

jsoma.github.io/2023-abraji-ai-workshop
investigate.ai
normalai.org



An introduction to AI tools

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AI Tools for Journalism

jsoma.github.io/2023-abraji-ai-workshop/

Update

AI Tools for Journalism

Jonathan Soma / js4571@columbia.edu / [@dangerscarf](#)

Abraji Conference 2023

Auto-generated Portuguese translation can be found here: [Versão em português](#)

GitHub repo can be found at <https://github.com/jsoma/2023-abraji-ai-workshop>

Run this notebook as a live programming exercise [here on Google Colab](#). Use `shift+enter` or the ► button to run the code.

This web page was made from a Jupyter notebook! To see how I made it, [see this tutorial about Quarto](#).

Introduction

Welcome to the page for my 2023 Abraji Data Sunday session!

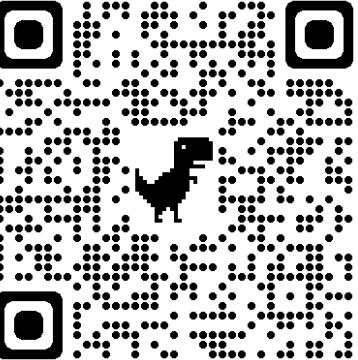
This talk hopes to be as an introduction to a few key concepts to understanding artificial intelligence and machine learning. The biggest lessons to take away from this is what does AI people mean when they talk about “models,” and what are some things these models might be able to do? We focus on journalism, but I throw in a few options, too.

On this page you can find:

- Working code snippets for everything in my talk

Table of contents

- Introduction
- Models
- Classification
- Named Entity Recognition
- Document search and similarity
- Summarization
- Limitations of large language models
- Image-based models
- Audio models
- Finding more models and expanding your skills
- Contact me





```
Abraji AI tools website.ipynb - +  
colab.research.google.com/github/jsoma/2023-abraji-ai-workshop/blob/main/docs/Abr  
Abraji AI tools website.ipynb  
File Edit View Insert Runtime Tools Help  
+ Code + Text Copy to Drive  
Let's try sentiment analysis! Here is a small example, using the distilbert-base-uncased-finetuned-sst-2-english.  
  
# First we'll install the "transformers" library from Hugging Face  
!pip install -q --upgrade transformers  
  
[notice] A new release of pip available: 22.3.1 -> 23.1.2  
[notice] To update, run: python -m pip install --upgrade pip  
  
from transformers import pipeline  
  
sentiment_pipeline = pipeline("sentiment-analysis",  
                             model="distilbert-base-uncased-finetuned-sst-2-english")  
data = ["I enjoyed eating the sandwich"]  
  
sentiment_pipeline(data)  
  
Downloading config.json: 0% | 0.00/629 [00:00<?, ?B/s]  
Downloading pytorch_model.bin: 0% | 0.00/255M [00:00<?, ?B/s]  
Downloading tokenizer_config.json: 0% | 0.00/48.0 [00:00<?, ?B/s]  
Downloading vocab.txt: 0% | 0.00/226k [00:00<?, ?B/s]  
[{"label": "POSITIVE", "score": 0.9996883869171143}]
```

Shift+enter

STEP ZERO

The roadmap

What is a “model?”

Sentiment analysis + text classification

Training and fine-tuning models

Large language models (and limitations)

Beyond text models

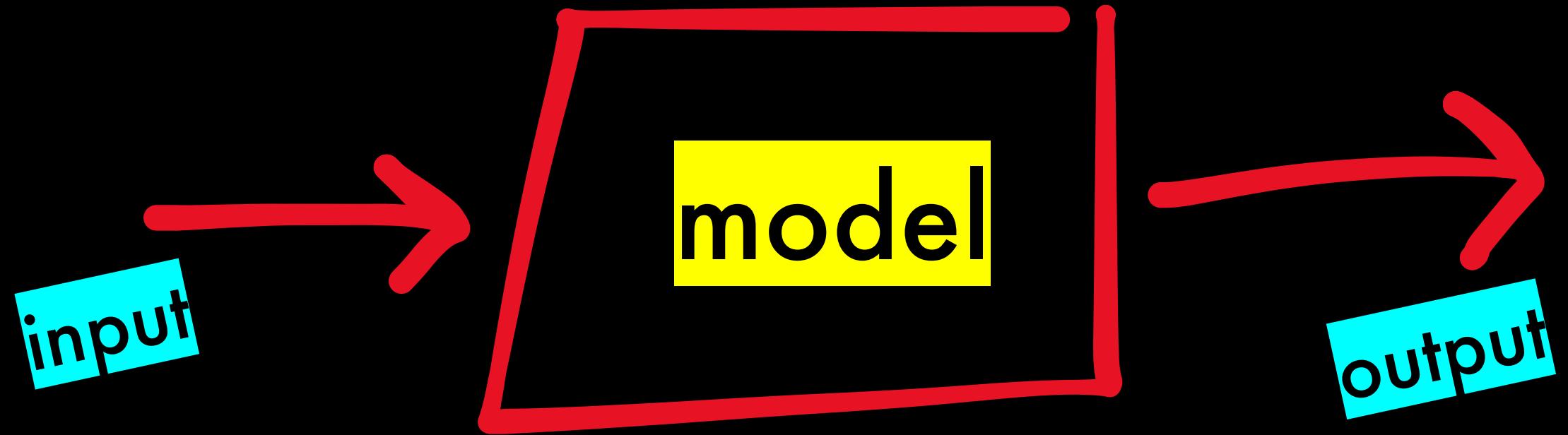
STEP ONE

What is a “model?”

Words you may have heard

GPT-2, GPT-3, GPT-3.5-turbo, GPT-4,
Bard, Claude, LLaMa, Stable Diffusion,
Midjourney, DALL-E 2, Imagen

Let's learn what they mean

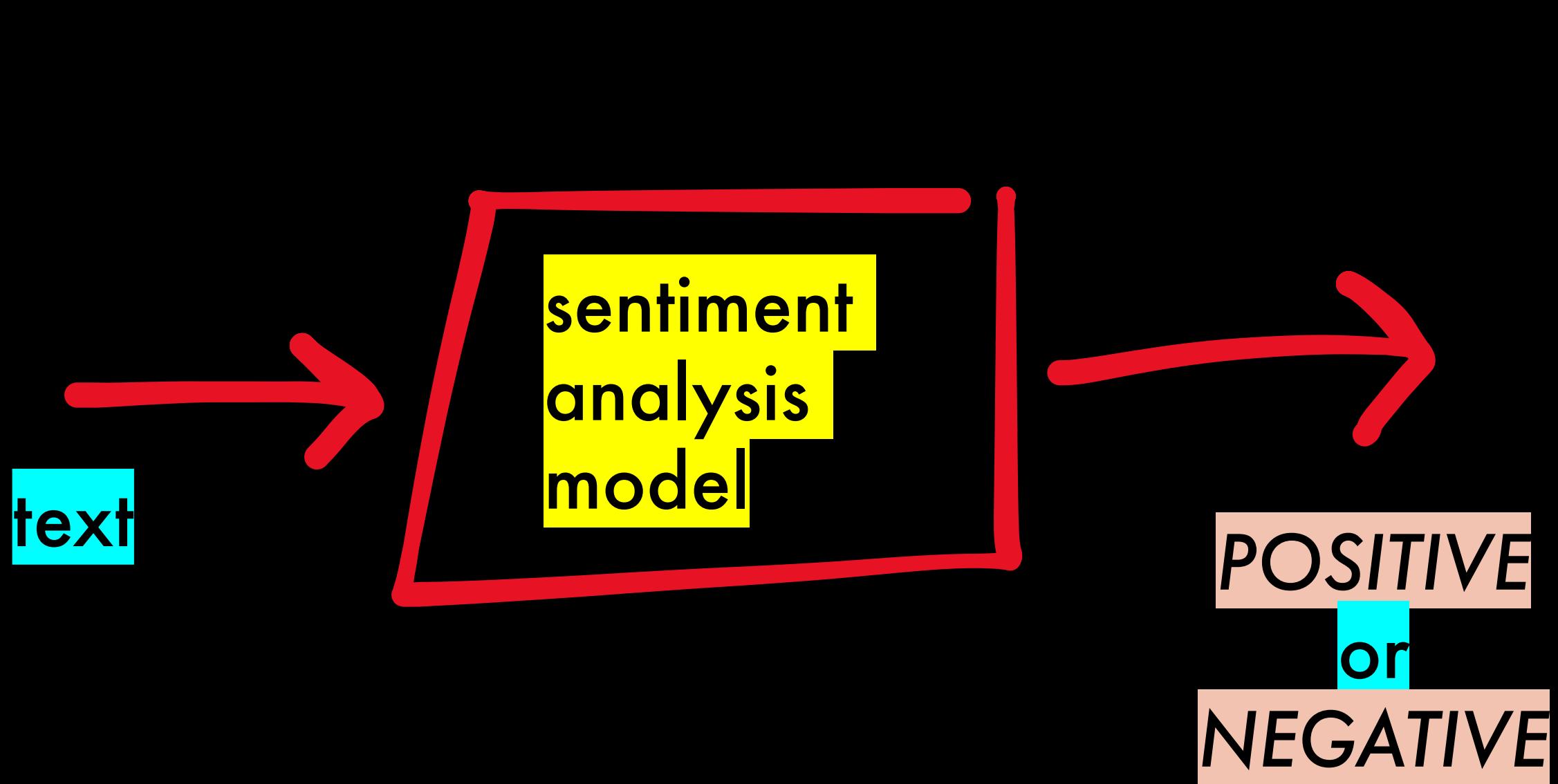


STEP ONE, PART ONE

Sentiment analysis

I love to eat cookies is **POSITIVE**

I hate when it rains is **NEGATIVE**



sentiment analysis python - Google

https://towardsdatascience.com/a-beginners-guide-to-sentiment-analysis-with-python

A Beginner's Guide to Sentiment Analysis with Python

Sep 12, 2020 — Sentiment analysis is a technique of classifying text. It is the process of classifying a piece of text. It is the process of classifying Step 1: Read The Dataframe · Step 2: Data Preprocessing

https://www.analyticsvidhya.com/blog/2020/09/sentiment-analysis-using-python/

Sentiment Analysis Using Python

Jul 7, 2022 — Sentiment Analysis is a useful technique that can be used to analyze text. It comes under the category of text classification.

https://huggingface.co/blog/sentiment-analysis-python

Getting Started with Sentiment Analysis using Python

Feb 2, 2022 — Sentiment analysis is the process of classifying text into overall positive, negative and neutral categories. 1. What Is Sentiment Analysis? · 2. How To Use It

https://realpython.com/python-nltk-sentiment-analysis/

Sentiment Analysis: First Steps

Sentiment analysis is the practice of classifying text into overall positive and negative categories. Getting Started With NLP: Sentiment Analysis

sentiment analysis python

Getting Started with Sentiment Analysis using Python

huggingface.co/blog/sentiment-analysis-python

Hugging Face

Search models, datasets, users...

Models Datasets Spaces Docs Solutions Pricing

← Back to blog

Getting Started with Sentiment Analysis using Python

Published February 2, 2022.

Update on GitHub

 federicopascual
Federico Pascual

Sentiment analysis is the automated process of tagging data according to their sentiment, such as positive, negative and neutral. Sentiment analysis allows companies to analyze data at scale, detect insights and automate processes.

There are more than [215 sentiment analysis models](#) publicly available on the Hub and integrating them with Python just takes 5 lines of code:

```
pip install -q transformers
from transformers import pipeline
sentiment_pipeline = pipeline("sentiment-analysis")
data = ["I love you", "I hate you"]
sentiment_pipeline(data)
```

This code snippet uses the [pipeline class](#) to make predictions from models available in the Hub. It uses the [default model for sentiment analysis](#) to analyze the list of texts data and it outputs the following results:

```
[{'label': 'POSITIVE', 'score': 0.9998},
 {'label': 'NEGATIVE', 'score': 0.9991}]
```

```
[3] sentiment_pipeline = pipeline("sentiment-analysis",
                                model="distilbert-base-uncased-finetuned-sst-2-english")
data = ["I enjoyed eating the sandwich"]
sentiment_pipeline(data)
```

Downloading (...)lve/main/config.json: 100%  629/629 [00:00<00:00, 18.1kB/s]

Downloading model.safetensors: 100%  268M/268M [00:01<00:00, 244MB/s]

Downloading (...)okenizer_config.json: 100%  48.0/48.0 [00:00<00:00, 815B/s]

Downloading (...)solve/main/vocab.txt: 100%  232k/232k [00:00<00:00, 5.74MB/s]

[{'label': 'POSITIVE', 'score': 0.9996883869171143}]

[{
 'label': 'POSITIVE',
 'score': 0.999688386171143
}]

```
[3] sentiment_pipeline = pipeline("sentiment-analysis",
                                model="distilbert-base-uncased-finetuned-sst-2-english")
data = ["I enjoyed eating the sandwich"]
sentiment_pipeline(data)
```

Downloading (...)lve/main/config.json: 100% 629/629 [00:00<00:00, 18.1kB/s]

Downloading model.safetensors: 100% 268M/268M [00:01<00:00, 244MB/s]

Downloading (...)okenizer_config.json: 100% 48.0/48.0 [00:00<00:00, 815B/s]

Downloading (...)solve/main/vocab.txt: 100% 232k/232k [00:00<00:00, 5.74MB/s]

[{'label': 'POSITIVE', 'score': 0.9996883869171143}]



"model"!!!

```
[ ] sentiment_pipeline = pipeline("sentiment-analysis",
                                model="distilbert-base-uncased-finetuned-sst-2-english")
data = ["Gostei de comer o sanduíche"]
sentiment_pipeline(data)

[{'label': 'POSITIVE', 'score': 0.5782409310340881}]
```

distilbert-base-uncased-finetuned-sst-2-english

```
[{
    "label": "POSITIVE",
    "score": 0.5782409210340881
}]
```

distilbert-base-uncased-finetuned-sst-2-english

“english”

Hugging Face

Search models, datasets, users...

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hf-maintainers/distilbert-base-uncased-finetuned-sst-2-english

162 like

Text Classification PyTorch TensorFlow Rust Safetensors Transformers sst2 glue English doi:10.57967/hf/0181 distilbert Eval Results

License: apache-2.0

Model card Files and versions Community 17 Edit model card

DistilBERT base uncased finetuned SST-2

Downloads last month 2,867,730

huggingface.co (where all the models live)

Model Details

Model Description: This model is a fine-tune checkpoint of DistilBERT-base-uncased, fine-tuned on SST-2. This model reaches an accuracy of 91.3 on the dev set (for

POSITIVE 1.000
NEGATIVE 0.000

JSON Output Maximize



Search models, datasets, users...

Models

Datasets

Spaces

Docs

Solutions

Pricing



Tasks 1 Libraries Datasets Languages
Licenses Other

Filter Tasks by name

Reset Tasks

Multimodal

Feature Extraction Text-to-Image
Image-to-Text Visual Question Answering
Document Question Answering
Graph Machine Learning

Computer Vision

Depth Estimation Image Classification
Object Detection Image Segmentation
Image-to-Image
Unconditional Image Generation
Video Classification
Zero-Shot Image Classification

<https://huggingface.co/finiteautomata/beto-sentiment-analysis>

Models 990

sentiment

new Full-text search

↑ Sort: Most Downloads

cardiffnlp/twitter-xlm-roberta-base-sentiment

Updated Nov 28, 2022 · 2.01M · 61

cardiffnlp/twitter-roberta-base-sentiment

Updated Jan 20 · 1.78M · 139

cardiffnlp/twitter-roberta-base-sentiment-latest

Updated Jan 13 · 772k · 101

Seethal/sentiment_analysis_generic_dataset

Updated Apr 19, 2022 · 565k · 8

finiteautomata/beto-sentiment-analysis

Updated 6 days ago · 345k · 17

finiteautomata/bertweet-base-sentiment-analysis

Updated 15 days ago · 261k · 51

Hugging Face

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cardiffnlp/twitter-xlm-roberta-base-sentiment

like 117

Text Classification PyTorch TensorFlow Transformers multilingual xlm-roberta arxiv:2104.12250

Model card Files Community 8 Edit model card

Downloads last month 533,463

Hosted inference API Examples

Compute

The model is loaded and running on Intel Xeon 3rd Gen Scalable CPU

JSON Output Maximize

Text Classification Examples

Compute

The model is loaded and running on Intel Xeon 3rd Gen Scalable CPU

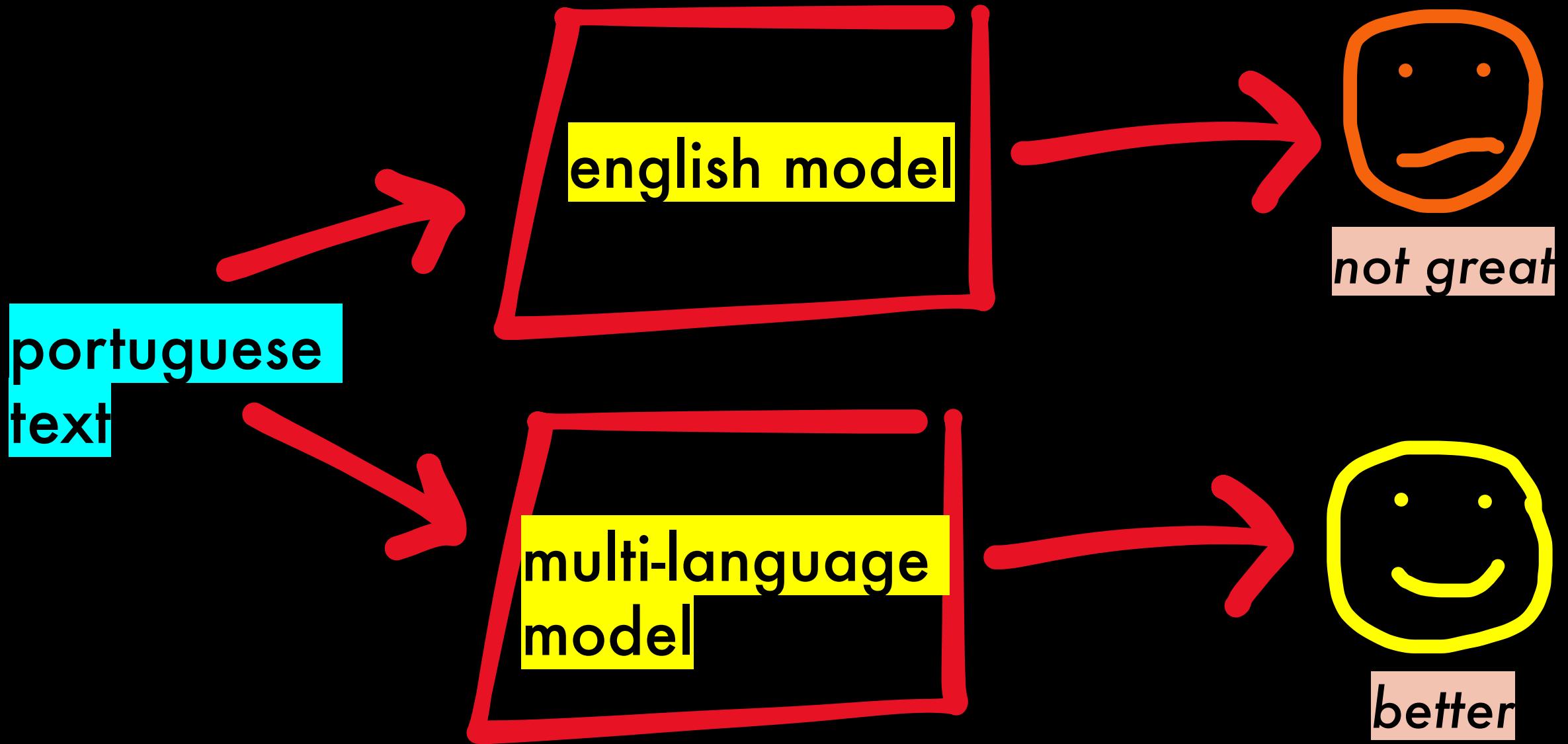
JSON Output Maximize

This model has been integrated into the [TweetNLP library](#).

```
[8] sentiment_pipeline = pipeline("sentiment-analysis",
                                model="cardiffnlp/twitter-xlm-roberta-base-sentiment")
data = ["Gostei de comer o sanduíche"]
sentiment_pipeline(data)

[{'label': 'positive', 'score': 0.841505229473114}]
```

```
[{
    'label': 'POSITIVE',
    'score': 0.841505229473114
}]
```



There isn't just one “sentiment analysis” – different models give different results!

Different models might perform better or worse at different tasks or languages

But why?? How?? Where do they come from??

 cardiffnlp/twitter-xlm-roberta- x +

huggingface.co/cardiffnlp/twitter-xlm-roberta-base-sentiment



twitter-XLM-roBERTa-base for Sentiment Analysis

This is a multilingual XLM-roBERTa-base model trained on ~198M tweets and finetuned for sentiment analysis. The sentiment fine-tuning was done on 8 languages (Ar, En, Fr, De, Hi, It, Sp, Pt) but it can be used for more languages (see paper for details).

Compute

The model is loaded and running on Intel Xeon 3rd Gen Scalable CPU

</> JSON Output Maximize

- Git Repo: [XLM-T official repository](#).

This model has been integrated into the [TweetNLP library](#).

STEP TWO

Training

I love to eat cookies is **POSITIVE**

I hate when it rains is **NEGATIVE**

I'm feeling sick is **NEGATIVE**

Dogs are cool animals is **POSITIVE**

..... is

..... is

... is

TRAINING

MODEL

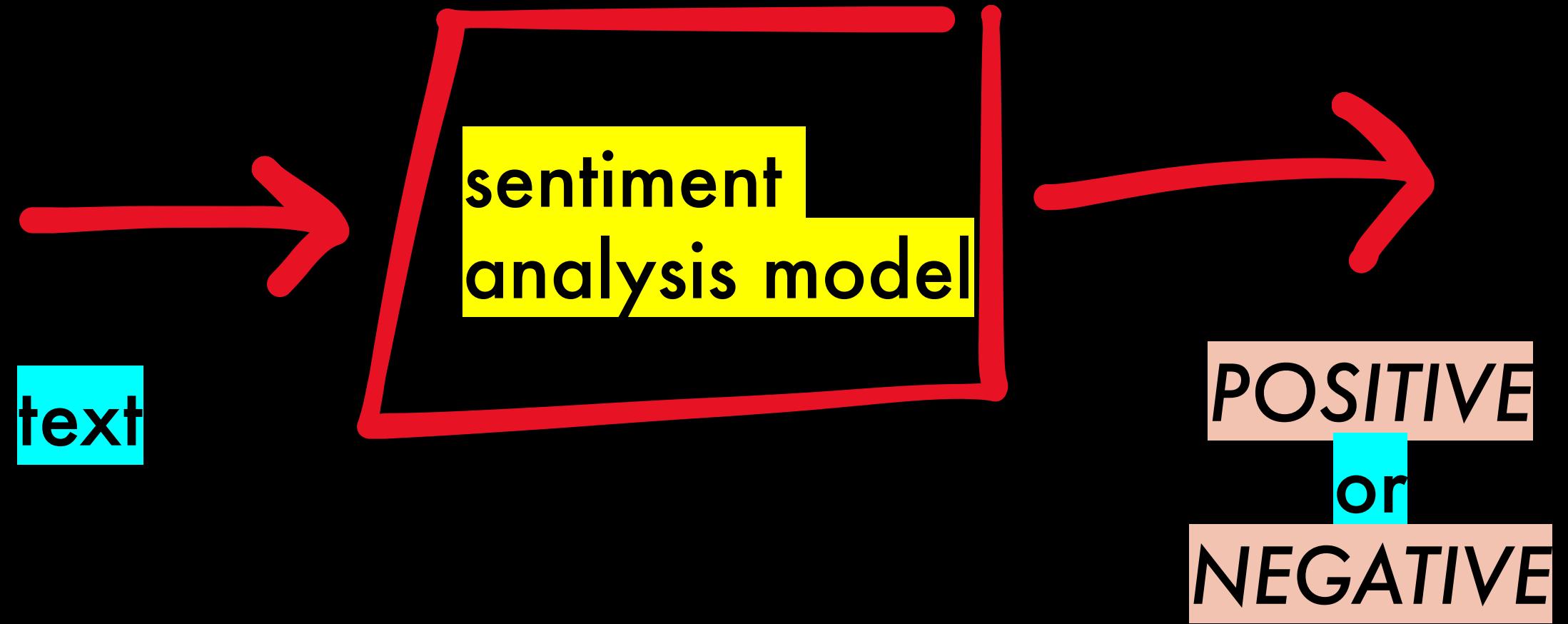
1	polarity	text
2	0	@kconsidder You never tweet
3	0	Sick today coding from the couch.
4	1	@ChargerJenn Thx for answering so quick,I was afraid I was gonna crash twitter with my question
5	1	Wii fit says I've lost 10 pounds since last time
6	0	@MrKinetik Not a thing!!! I don't really have a life.....
7	1	and its pretty cool I never thought I would ever get to this point...
8	0	finallly! twitter wouldnt let me in! x
9	1	Just took a shower, i feel so refreshed now
10	0	Love the show! You and Jasmine got me watching! Every mtv web exclusive has me
11	1	I have a story to tell you... its my birthday tomorrow!! yes thats right tomorrow is the 20th....Lauren is a TOOL face... HAPPY EOFYS!!
12	1	That came out wrong. I heart @danielradcliffe just as much.
13	0	Just got done with the Fam celebratin Jun bdays, it's sad to see my grandma getting so forgetful, couldn't remember who had bdays n June
14	0	dissapointed about missing the VIP chance on NIN in Chicago.
15	1	@i_am_girlfriday aw, i'm sure you were absolutely cute with those bangs
16	1	@Jefner Thanks for the welcome I hope it does too, it should be fine but I gotta speak on it too
17	1	@iamdiddy I'm here for diddy!
18	1	Fact #1: Between 70% and 90% of the world's water comes from groundwater. This is because groundwater is more abundant than surface water and is less expensive to extract. It is also more reliable than surface water, which can be affected by seasonal fluctuations in rainfall and evaporation. Groundwater is also more sustainable than surface water, as it is constantly being replenished by precipitation and infiltration through the soil and rock layers. This makes it a valuable resource for agriculture, industry, and domestic use.
19	0	Going to bed now. no one rings, then great, if not i'll just be sleeping.
20	1	ohhhhhh im so ready
21	1	http://www.flickr.com/photos/bugekgek/ Thy new gallery.
22	0	is up to no good. has to leave for camping in 10 hours ! .. and cannot sleep
23	0	@SaintBastard dude. I'm a Caps fan at heart. 0 cups. Many a heartbreaking game though. I'm not a fan of the team but I do like the city. So.. yeah.
24	1	happy birthday mother
25	1	@Edwin808 there u go u see RE and Bodysnatching in hand - beautiful spot to be in either or both actually
26	1	@mrsjackbauer7 haha omg it works now
27	0	About to spend an evening of unadulterated gaming. I am in bed early and the controllers are charged! If only I had a gaming buddy
28	0	I wanted to go eat with you guys but my mom made me go to Coolidge elementary to clean my old teacher's classroom
29	0	@dirty69_4ever my wife and I need 2 hrs of sleep earlier in the eve so she'll be more open to that kind of thing. We NEED our 5hrs of sleep
30	1	. @MaryRSnyder Thank you! I figured you could use the chocolate biscotti after all that shredding!
31	0	@chanicedev0nne wtf niecey r u serious.. dam yo wats happening man? that shit aint right..I dnt get it
32	0	xbox live is down for the day Oh well, gives me a chance to play Chronicles of Riddick or start a new character in Fable 2.

YOU LABEL!
IT LEARNS!

"hate"

"love"

"cry"





Jennifer Morris

★★★★★ Best cat toy ever!

Reviewed in the United States on February 26, 2023

Verified Purchase

My cat is addicted to this toy. Whenever it shuts off, she just pats at it until someone picks it up for her.

Helpful

| Report abuse



Shawn Fielding

★★★★★ Excellent plan, ok quality

Reviewed in the United States on February 26, 2023

Verified Purchase

My cats love this toy maybe a little too much. It holds a battery for a few runs, but it needs recharging somewhat quickly. I think it was supposed to turn on every hour-some for 15 minutes, but that does not happen. Maybe I don't know the trick. The laser and top are a hit. The problem is the feather that pops out. That had been pretty much pulled off by the end of day one after some, but not abnormally hard use. Good Toy. Does keep them entertained. Just wish for slightly better quality for the price.

Helpful

| Report abuse

YOU CAN TRAIN
ON ANY KIND OF
CATEGORIES!!!!



Train your own models!

Crimes!

Misinformation!

Hate speech!

washingtonpost.com/technology/2019/11/22/apple-says-its-app-store-is-safe-trusted-place-... +

The Washington Post
Democracy Dies in Darkness

Tech Help Desk Artificial Intelligence Internet Culture Space Tech Policy

TECHNOLOGY

Apple says its App Store is ‘a safe and trusted place.’ We found 1,500 reports of unwanted sexual behavior on six apps, some targeting minors.

The prevalence of unwanted sexual content raises questions about whether Apple can continue to offer a protective cocoon to its customers as its platform grows

By Reed Albergotti and Al Johri
November 22, 2019 at 7:00 a.m. EST

all this app supports is “This should be taken off the app store immediately”
hate and negativity” 

“The ones I thought were good guys turned out to be good at hiding it.”

Times Investigation: LAPD misclassified nearly 1,200 violent crimes as minor offenses

BY BEN POSTON, JOEL RUBIN

AUG. 9, 2014 6:04 PM PT

Once police had Nathan Hunter in handcuffs, they tended to his wife.

She was covered in blood. She told the officers Hunter flew into a rage that night in February 2013 because she hadn't bought him a Valentine's Day gift. He beat and choked her before stabbing her in the face with a screwdriver and throwing her down a flight of stairs at their apartment in South L.A., according to police and court records.

Hunter, 55, was convicted of felony spousal abuse and sentenced to six years in prison.

STEP THREE

There's a tiny problem

(language is bad and awkward)

- ✗ “I hate you”
- ✗ “They hate you”
- ? “He **hates** you”

same word, but different endings

fish

correr

fishes

correndo

fishing

correu

fished

correm

```
from sklearn.feature_extraction.text import TfidfVectorizer
from nltk.stem import SnowballStemmer
stemmer = SnowballStemmer('english')

class StemmedTfidfVectorizer(TfidfVectorizer):
    def build_analyzer(self):
        analyzer = super(StemmedTfidfVectorizer, self).build_analyzer()
        return lambda doc:(stemmer.stem(word) for word in analyzer(doc))

vec = StemmedTfidfVectorizer(stop_words='english', min_df=5, max_df=0.5)
X = vec.fit_transform(df.D0_NARRATIVE)
print(vec.get_feature_names()[100:200])
```

there are ways to solve it...

STEP FOUR

Fine-tuning

I love to eat cookies is **POSITIVE**

I hate when it rains is **NEGATIVE**

I'm feeling sick is **NEGATIVE**

Dogs are cool animals is **POSITIVE**

..... is

..... is

..... is

TRAINING

learn rules

A WHOLE
LOT OF TEXT

TRAINING

learn language

A WHOLE LOT OF TEXT



TRAINING
(to learn language)

I love to eat cookies is **POSITIVE**

I hate when it rains is **NEGATIVE**

I'm feeling sick is **NEGATIVE**

Dogs are cool animals is **POSITIVE**

..... is

..... is

..... is

FINE TUNING
(to learn rules)

**OKAY NOW
WE USE IT!!!!**



 cardiffnlp/twitter-xlm-roberta- x +

huggingface.co/cardiffnlp/twitter-xlm-roberta-base-sentiment



twitter-XLM-roBERTa-base for Sentiment Analysis

This is a multilingual XLM-roBERTa-base model trained on ~198M tweets and finetuned for sentiment analysis. The sentiment fine-tuning was done on 8 languages (Ar, En, Fr, De, Hi, It, Sp, Pt) but it can be used for more languages (see paper for details).

Compute

The model is loaded and running on Intel Xeon 3rd Gen Scalable CPU

</> JSON Output Maximize

- Git Repo: [XLM-T official repository](#).

This model has been integrated into the [TweetNLP library](#).

198 million
tweets



TRAINING
(to learn language)

I love to eat cookies is **POSITIVE**

I hate when it rains is **NEGATIVE**

I'm feeling sick is **NEGATIVE**

Dogs are cool animals is **POSITIVE**

..... is

..... is

..... is

FINE TUNING
(to learn rules)

OKAY NOW
WE USE IT!!!!



washingtonpost.com/technology/2019/11/22/apple-says-its-app-store-is-safe-trusted-place-we-found-reports-unwanted-sexual-content-on-six-apps/

The Washington Post

Technology

Apple says its App Store is ‘a safe and trusted place.’ We found 1,500 reports of unwanted sexual behavior on six apps, some targeting minors.

The prevalence of unwanted sexual content raises questions about whether Apple can continue to offer a safe cocoon to its customers as its platform grows

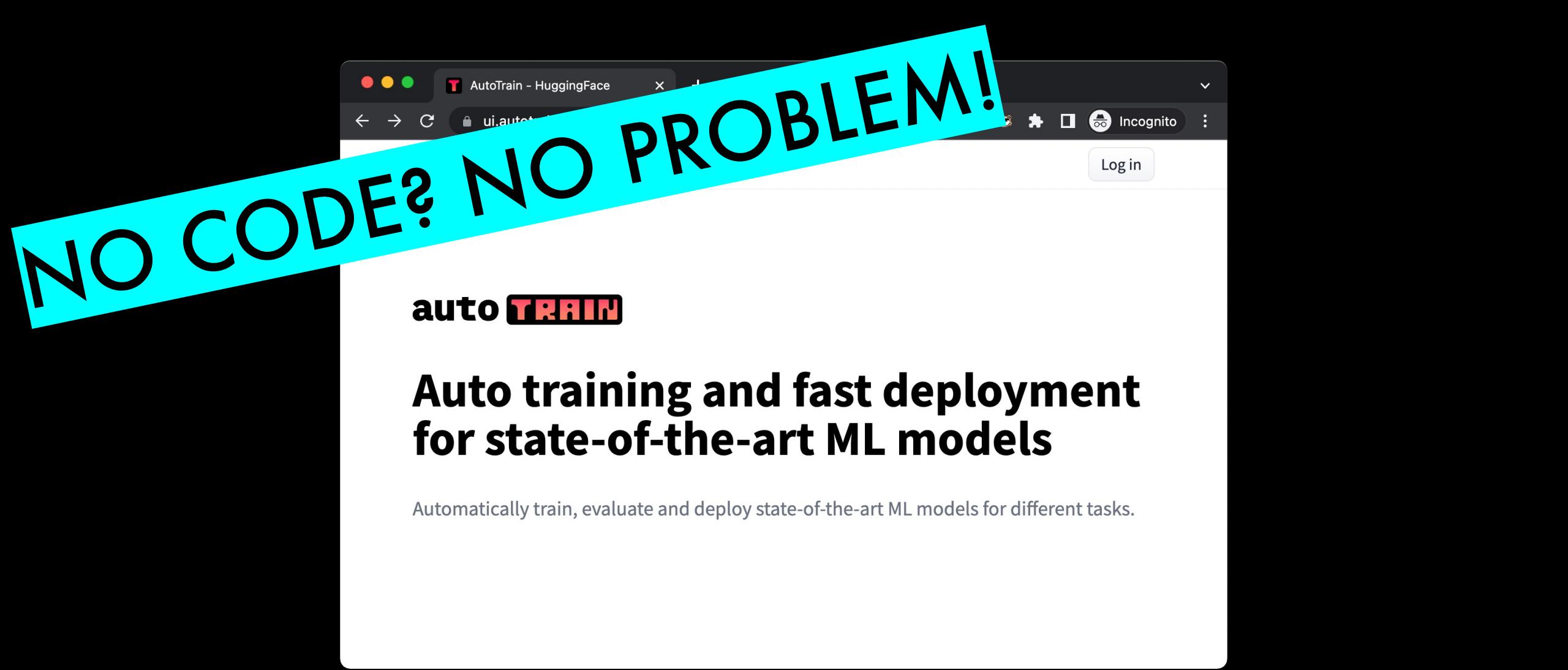
By Reed Albergotti and Al Johri
November 22, 2019 at 7:00 a.m. EST

all this app supports is hate and negativity”

“This should be taken into account when turning on the app.”

Rating	Review
1	I'm 19 years old! And I always get messages of weird guys and older men ! They send intense/bulgar/p
1	The App Makes It too Easy For Creeps To Be Creeps, If You're having a Good Time, all good Vibes and
1	The concept of the app is ok. But if you are going to use this app you have to be very careful. The very
1	The only thing people want on this app is either nudes or your kik
1	I went on there to find new friends but I can't go 3 matches without finding a creepy 30 year old or fin
1	everywhere perverts. bad quality video cannot filter without paying lame
1	this app on android is much different and rather safer than using on an iphone. you can see the pers

do it yourself



<https://ui.autotrain.huggingface.co>

New project

Select a task, language, and how many models you want to train. You will prepare data in the next step.

Project name

eg: imdb-sentiment-analy...

Task

Vision

Text

Tabular

✓ Tabular Data Classification (Binary)

Tabular Data Classification (Multi-class)

Tabular Data Classification (Multi-label)

Tabular Data Regression

Tabular Data Classification (Binary) is the task of classifying tabular data into two distinct groups.

Create project

Cancel

Rating	Review
1	I'm 19 years old! And I always get messages of weird guys and older men ! The App Makes It too Easy For Creeps To Be Creeps, If You're having a Good time, it's great!
1	The concept of the app is ok. But if you are going to use this app you have to pay for it. It's not free.
1	The only thing people want on this app is either nudes or your kik messages.
1	I went on there to find new friends but I can't go 3 matches without finding a pervert.
1	everywhere perverts. bad quality video cannot filter without paying lame
1	this app on android is much different and rather safer than using on an iphone.
1	I put looking for women interested in men in my settings (cause I'm straight).
2	I don't like how recent pictures are permanently in there if someone goes online.
1	all this app supports is hate and negativity. You can't get on this app without being harassed.

wendys-llc/autotrain-wapo-cor

huggingface.co/wendys-llc/autotrain-wapo-comments-3383392843

Hugging Face Search models, datasets, users... Models Datasets Spaces Docs Solutions Pricing

wendys-llc/autotrain-wapo-comments-3383392843 private

Text Classification PyTorch Transformers wendys-llc/autotrain-data-wapo-comments English deberta Trained with AutoTrain Carbon Emissions

Model card Files and versions Comments Settings Edit model card

Model Trained Using AutoTrain

- Problem type: Binary Classification
- Model ID: 3383392843
- CO2 Emissions (in grams): 3.3151

Validation Metrics

- Loss: 0.049
- Accuracy: 0.985
- Precision: 1.000
- Recall: 0.750
- AUC: 0.992
- F1: 0.857

Downloads last month 22

Hosted inference API

Text Classification Examples

I love AutoTrain 😊

Dataset used to train wendys-llc/autotrain-wapo-comments-338...

wendys-llc/autotrain-data-wapo-comments private Updated 22 days ago

OUR FINE-TUNED MODEL!

Computer vision

Leprosy of the land



THOUSANDS HECTARES OF LAND TURNED
INTO LUNAR LANDSCAPES DUE TO
ILLEGAL AMBER MINING. OUR MACHIN
MODEL FOUND TRACES OF SUCH ACTIV
ON SATELLITE IMAGES FOR THE AREA
70,000 SQUARE KM.



IMAGES, TOO

AutoTrain - HuggingFace ui.autotrain.huggingface.co/42327/data

auto TRAIN BETA amber-mines

Data Trainings Metrics

Prepare your data for Image Classification

AutoTrain needs example data which can be uploaded using one of the two methods below, or imported from the Hugging Face Hub.

Method 1: Pre-arranged folders

Organize your images in folders named according to their corresponding classes (for instance "dog" or "cat"). Then, upload the parent folder using the input below.

Method 2: CSV/JSONL with associated images

Upload a .csv or .jsonl file, then the associated images. Each data file should have at least 2 columns: one for `image_filepath`, and one for `target`.

File Structure:

- animals_classification/ (6.1 MB)
 - lion (30 files (1.1 MB))
 - 0001.jpg
 - 0002.jpg
 - 0003.jpg
 - shark (40 files (959 kB))
 - 0001.jpg
 - 0002.jpg
 - 0003.jpg

CSV Data:

file	image_filepath	label	target
0001.jpg		label	lion
0002.jpg		label	lion
0003.jpg		label	lion

Use pre-arranged folders (Method 1) Use a .CSV or .JSONL file (Method 2)

Drop root folder here or click to upload

Or select an existing dataset from the Hugging Face Hub

Browse datasets

STEP FIVE

LLMs have changed *everything*

198 million
tweets



TRAINING
(to learn language)

I love to eat cookies is **POSITIVE**

I hate when it rains is **NEGATIVE**

I'm feeling sick is **NEGATIVE**

Dogs are cool animals is **POSITIVE**

..... is

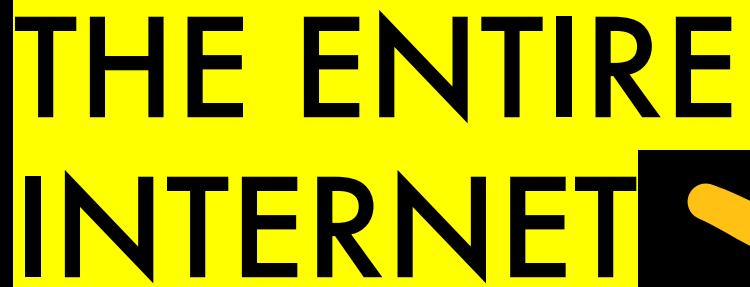
..... is

..... is

FINE TUNING
(to learn rules)

OKAY NOW
WE USE IT!!!!





THE ENTIRE
INTERNET



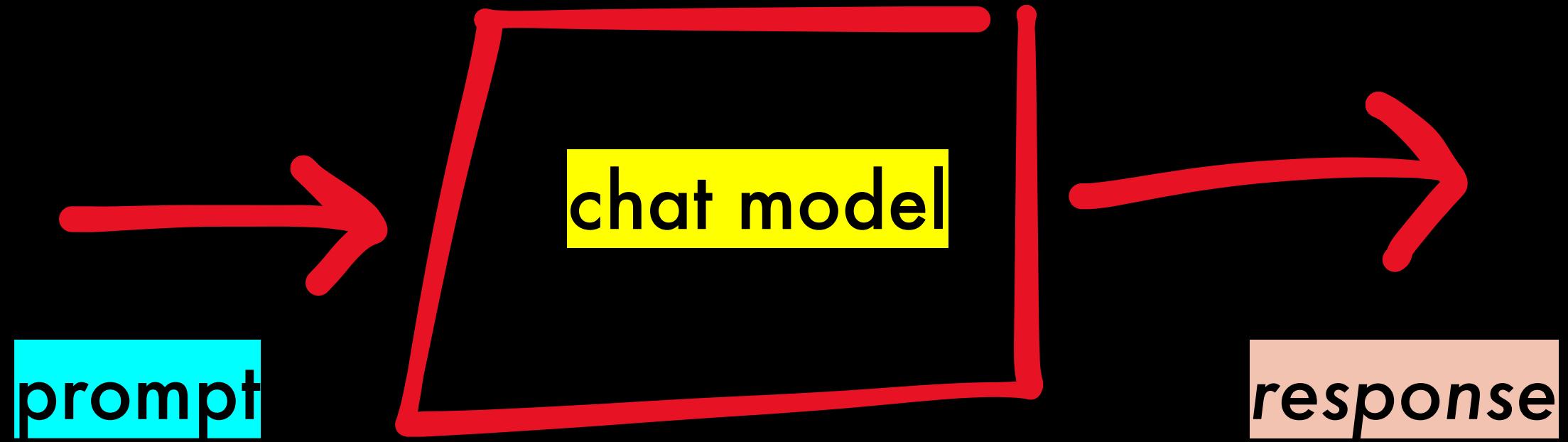
TRAINING
(to learn language)



IT ALREADY
KNOWS EVERYTHING
(maybe this is scary???)



OKAY NOW
WE USE IT!!!!



JS

Categorize the following text as about the ENVIRONMENT, GUN CONTROL, or IMMIGRATION. Respond with only the category.

Text: A Bill To Regulate The Sulfur Emissions Of Coal-Fired Energy Plants in the State of New York



ENVIRONMENT

Did I train it? NO!

Did I fine-tune it? NO!

It just did the job!

JS

Categorize the following text as about the ENVIRONMENT, GUN CONTROL, or IMMIGRATION. Respond with only the category.

To Regulate The Sulfur Emissions Of Coal-Fired Energy

zero-shot classification
(also, few-shot classification)



ENVIRONMENT

```
import spacy

nlp = spacy.load("en_core_web_md")
text = "Hi, I'm Jonathan Soma, and I'm giving this talk at the Abraji Conference in São Paulo."
doc = nlp(text)

for ent in doc.ents:
    print(ent.text, ent.label_)
```

Named entity recognition

Jonathan Soma PERSON
the Abraji Conference FAC
São Paulo GPE

```
import spacy  
  
nlp = spacy.load("pt_core_news_lg")  
text = "Olá, eu sou Jonathan Soma e estou dando esta palestra na Congresso da Abraji em São Paulo"  
doc = nlp(text)  
  
for ent in doc.ents:  
    print(ent.text, ent.label_)
```

Named entity recognition

Jonathan Soma PER
Conferência da Abraji MISC
São Paulo LOC

JS

List the named entities in the passage below. Use a comma to separate the entity and the type of entity. Valid entity types are PERSON, EVENT, ORGANIZATION and LOCATION.

Text: Hi, I'm Jonathan Soma, and I'm giving this talk at the Abraji Conference in São Paulo.



Jonathan Soma - PERSON
Abraji Conference - EVENT
São Paulo - LOCATION

JS

List the named entities in the passage below. Use a comma to separate the entity and the type of entity. Valid entity types are PERSON, EVENT, ORGANIZATION and LOCATION.

Text: Olá, eu sou Jonathan Soma e estou dando esta palestra na Congresso da Abraji em São Paulo



Jonathan Soma - PERSON

Conferência da Abraji - EVENTO

São Paulo - LOCALIDADE



JS

Relacione as entidades nomeadas no trecho abaixo. Use uma vírgula para separar a entidade e o tipo de entidade. Os tipos de entidade válidos são PERSON, EVENT, ORGANIZATION e LOCATION.

Texto: Olá, eu sou Jonathan Soma e estou dando esta palestra na Congresso da Abraji em São Paulo.



Jonathan Soma - PERSON

Congresso da Abraji - EVENTO

São Paulo - LOCALIDADE

Use case: gender equity in sources

LA NACION presenta Genie, un monitor de brecha de género, y Cómo lo Digo

Servirán especialmente para evaluar y mejorar los índices de diversidad e inclusión; estas dos innovadoras propuestas combinan tecnología, inteligencia artificial y periodismo con el objetivo de seguir avanzando en la calidad de los contenidos

26 de marzo de 2023 • 07:14

LA NACION

MENDOZA.- El peronismo se arremangó los pantalones y se metió en el barro de la **interna** para buscar una salida, en medio de la crisis económica y política argentina, pero sobre todo mirando a las elecciones 2023. Así transcurrió hoy en Mendoza una **cumbre nacional del PJ denominada “Peronismo futuro”**, en la que se escuchó a los distintos sectores y se pusieron sobre la mesa las tensiones dentro del Ejecutivo que comanda **Alberto Fernández**, pero con fuertes mensajes de apoyo a la vicepresidenta **Cristina Kirchner** y un llamado a la unidad del Frente de Todos.

STEP SEVEN

Limits of large language models

Knowledge cutoff

JS

Who led his mercenaries towards Moscow in June of 2023?



I'm sorry, but as an AI language model, I don't have access to real-time information or events that occurred after my knowledge cutoff in September 2021. Therefore, I cannot provide information about events or individuals that took place or led their mercenaries towards Moscow in June 2023. It's always a good idea to refer to reliable news sources for the most up-to-date and accurate information on current events.

...just send it the info?

JS



Please summarize this book and tell me all of the important things in it.

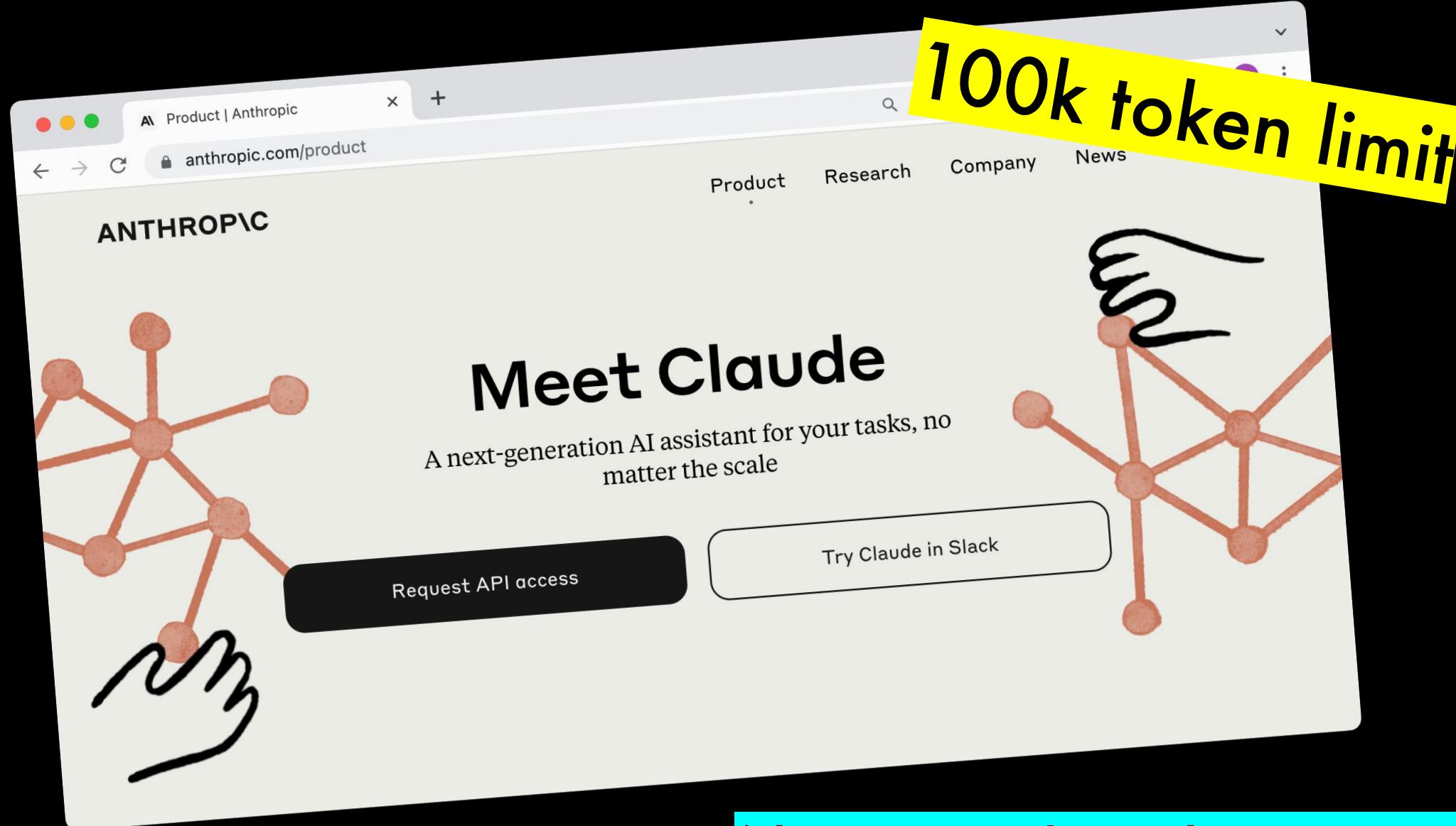


This isn't actually possible!



gpt-3.5-turbo	Most capable GPT-3.5 model and optimized for chat at 1/10th the cost of <code>text-davinci-003</code> . Will be updated with our latest model iteration 2 weeks after it is released.	4,096 tokens	Up to Sep 2021
gpt-3.5-turbo-16k	Same capabilities as the standard gpt-3.5-turbo model but with 4 times the context.	16,384 tokens	Up to Sep 2021

LATEST MODEL	DESCRIPTION	MAX TOKENS	TRAINING DATA
gpt-4	More capable than any GPT-3.5 model, able to do more complex tasks, and optimized for chat. Will be updated with our latest model iteration 2 weeks after it is released.	8,192 tokens	Up to Sep 2021
gpt-4-32k	Same capabilities as the base gpt-4 mode but with 4x the context length. Will be updated with our latest model iteration.	32,768 tokens	Up to Sep 2021



(there are also other ways around it)

Make a list of the sources in the article at

<https://www.nytimes.com/2022/12/09/nyregion/new-york-police-department-attrition.html>



Here is a list of the sources mentioned in the article "N.Y.P.D. Is Hemorrhaging Officers. Why? Money, Money, Money" published on December 9, 2022, by The New York Times:

1. Patrick Lynch, the president of the Police Benevolent Association
2. Brandon Del Pozo, a former police chief in Burlington, Vt., who now works as a consultant
3. Rashawn Ray, a professor of sociology at the University of Maryland and a fellow at the Brookings Institution
4. Ed Mullins, the president of the Sergeants Benevolent Association
5. An anonymous current NYPD officer who spoke on the condition of anonymity to protect their job
6. Mayor Eric Adams
7. Commissioner Keenan
8. Deputy Commissioner of Personnel Michael Julian



hallucinations

N.Y.P.D. Officers Leave in Droves for Better Pay in Smaller Towns

This year has seen the highest number of resignations in two decades.

Give this article



Art is more resilient to imperfections than journalism



Mitali Mukherjee
@MitaliLive

...

AI is at this moment more of a burden than an asset says Joseph Kahn, Executive Editor of NYT. The amount of time it takes the fact checking team is tedious and time-consuming. #AI #news #NYT

4:45 AM · Jun 28, 2023 · 3,811 Views

STEP SEVEN

What can models do?

Models - Hugging Face

huggingface.co/models?sort=downloads

Hugging Face Search models, datasets, users...

Natural Language Processing

Tasks Library

Filter Task

Multimodal

- Feature Extraction
- Visual Question Answering
- Document Classification

Computer Vision

- Depth Estimation
- Object Detection
- Image-to-Image
- Video Classification

Natural Language Processing

- Text Classification
- Table Question Answering
- Zero-Shot Classification
- Summarization
- Text Generation
- Sentence Similarity
- Token Classification
- Question Answering
- Translation
- Conversational
- Text2Text Generation
- Fill-Mask

Pricing

Sort: Most Downloads

base

compvis/stable-diffusion-v1-4
Updated 4 days ago · 4.67M · 4.64k

philschmid/bart-large-cnn-samsum
Updated Dec 23, 2022 · 3.7M · 112

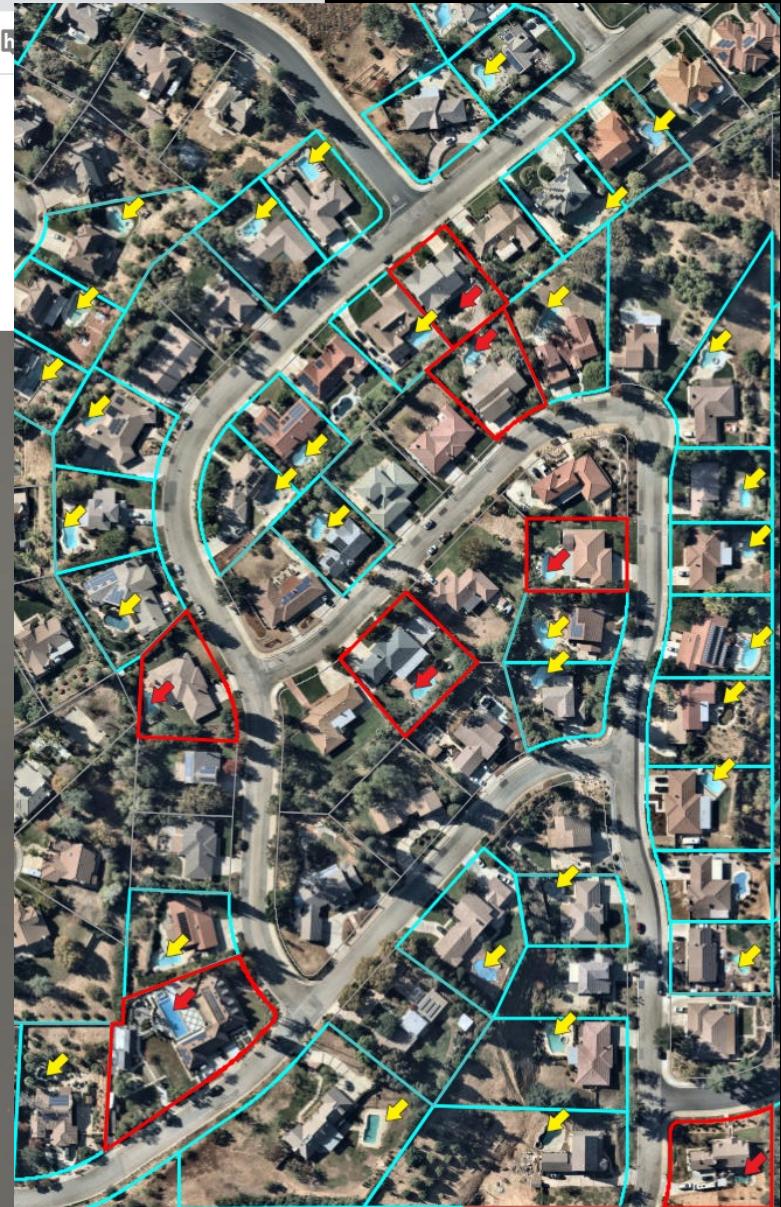
https://huggingface.co/models?pipeline_tag=unconditional-image-generation

The screenshot shows the Hugging Face website interface. A red box highlights the 'Natural Language Processing' section, which contains ten different NLP tasks: Text Classification, Table Question Answering, Zero-Shot Classification, Summarization, Text Generation, Sentence Similarity, Token Classification, Question Answering, Translation, and Conversational. Each task is represented by a card with an icon and a brief description. To the left of this section is a sidebar with categories like Multimodal, Computer Vision, and Natural Language Processing, each with its own list of sub-tasks. The top navigation bar includes a search bar, a pricing section, and a sorting option for 'Most Downloads'. At the bottom, there are links for specific model cards.

STEP EIGHT

Models for images

object detection



semantic segmentation

Maskformer (large-coco)

Using [facebook/maskformer-swin-large-coco](#) model to calculate percentage of pixels in an image that belong to vegetation.

Input Image



Vegetation



Clear

Submit

Object Label	Pixel Percent	Square Length
vegetation	39.65 %	0.63 m

<https://huggingface.co/spaces/thiagohersan/maskformer-coco-vegetation-gradio>



Practical data science for journalists (and everyone else)

If you know some Python and have dabbled in data, we're here for you! Let's add a dash of machine learning and a sprinkling of stats to your skillset.

And if you don't know Python, [take this](#) and [this](#) and call me in the morning. Or [go all-in](#), maybe?

Topic walkthroughs

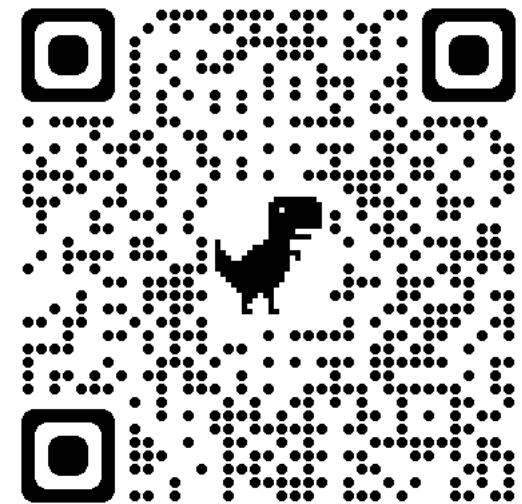
Practical, start-to-finish guides on data science concepts and tools. Not (too) boring, not (too) mathy, they're hopefully just what you're looking for.

Real-life examples

Theory on its own doesn't do much! Practice your skills by reproducing published, award-winning investigations.

Reference materials

Most of the time we spend "programming" is finding things to cut and paste from the internet. Might as well put it all in one place, right?



normalai.org

Normal AI Intro Text Images Audio Video Custom

Home

Introduction

- Welcome
- What is a model?
- Training a model

Existing models

- How to use
 - Text
 - Images
 - Audio
 - Video

Build your own

- Customization overview
- Text classifier
- Image classifier
- Exploring the possibilities
- Custom tools

Normal AI

A totally normal dictionary of modern AI and machine learning

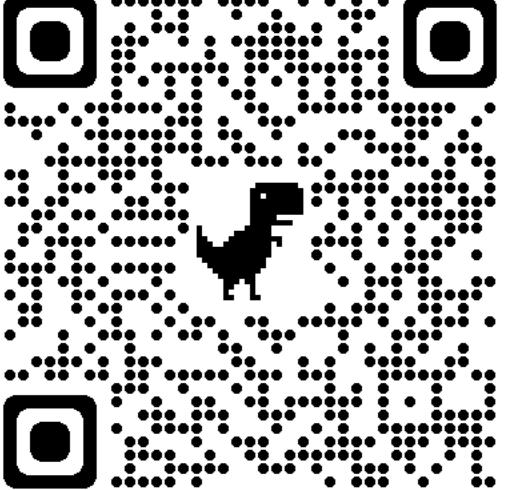
This site is an attempt at a down-to-earth explanation of modern AI and machine learning. It isn't all We're here to learn about what AI and machine learning models are, how to use them, and get a little from what's possible.

 Unfortunately "what's possible" is a moving target, so take this all as being ever-so-slightly out of date.

Where to start?

If you're looking for more background on ML and AI, I strongly recommend heading into [What is a model?](#)

If you'd like to see how to simply and easily build a custom image classifier, explore [Training a model](#). If you have no



<https://jsoma.github.io/2023-abraji-ai-workshop/>

AI Tools for Journalism

Abraji Conference 2023

Jonathan Soma

js4571@columbia.edu

[@dangerscarf](https://twitter.com/dangerscarf)

Introduction

Models are what AI and machine learning are both based on. You have probably heard of some:

- **Text models:** GPT-2, GPT-3, GPT-3.5-turbo, GPT-4, Bard, Claude, LLaMa
- **Image models:** Stable Diffusion, Midjourney, DALL-E 2, Imagen

You give them an input, they give you an output. It sounds like a silly definition, but it's true!

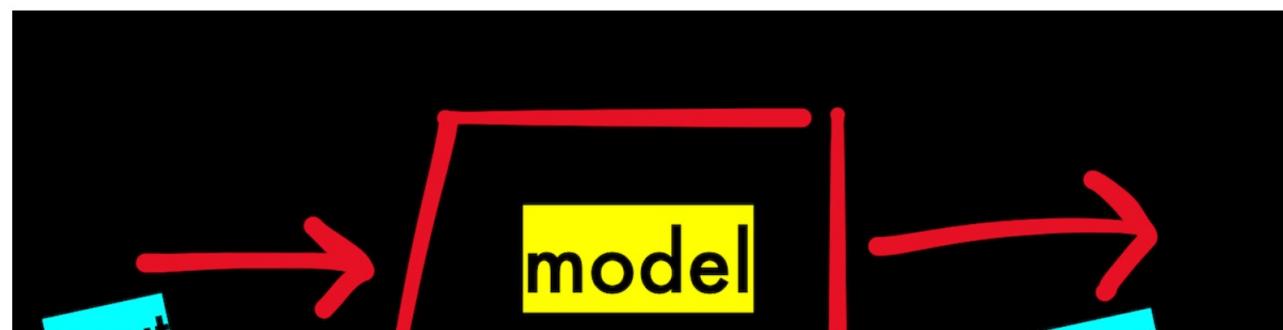


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- Introduction
- Classification
- Named Entity Recognition
- Document search and similarity
- Limitations of large models
- Image-based models



jsoma.github.io/2023-abraji-ai-workshop
investigate.ai
normalai.org



An introduction to AI tools

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