gradio: doing inference

Abubakar Abid (a12d@stanford.edu)
Ali Abdalla
Ali Abid
Dawood Khan
James Zou

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Does a **high test accuracy** == a **good model**?

Good for whom?

Machine Learning Developers

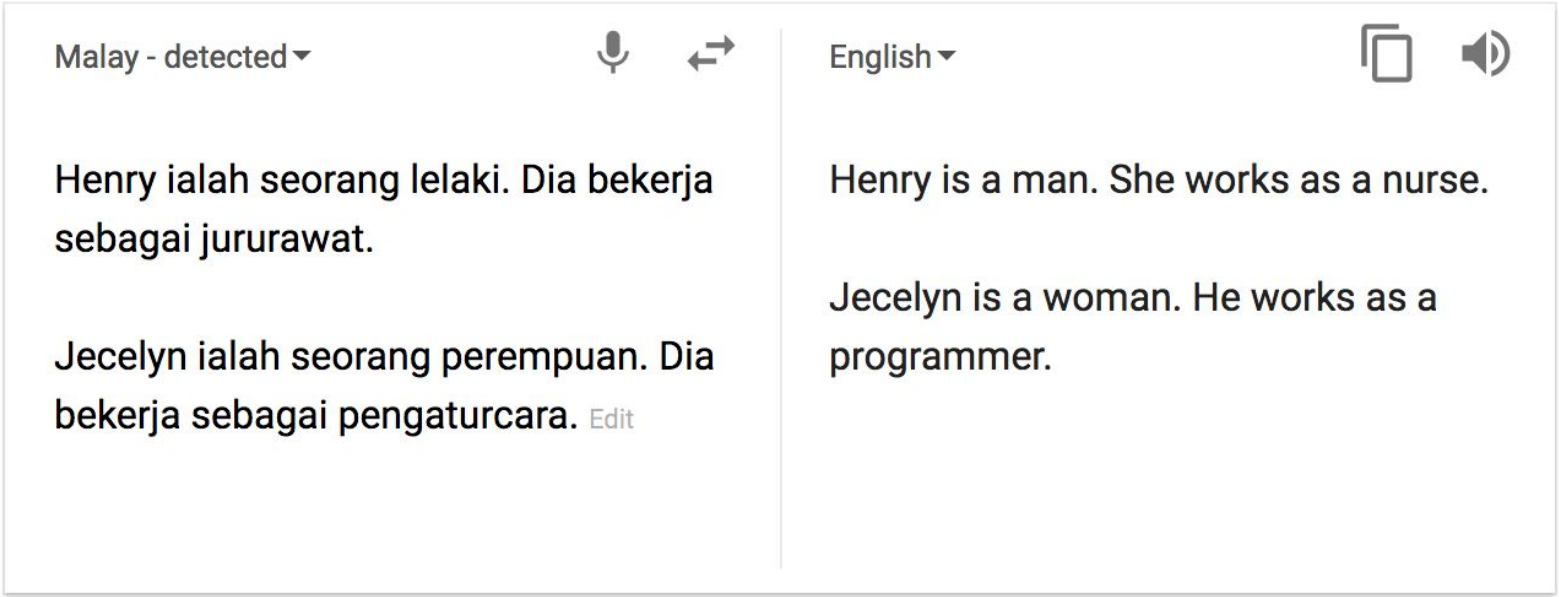
Collaborators/End Users

State of the art image classifiers trained on ImageNet:

bride, dress, woman **performance, costume**

https://www.nature.com/articles/d41586-018-05707-8

Google Translate, until recently:



https://hackernoon.com/bias-sexist-or-this-is-the-way-it-should-be-ce1f7c8c683c

The Download

What's up in emerging technology

Machine learning is contributing to a "reproducibility crisis" within science

Scientific discoveries made using machine learning cannot be automatically trusted, a statistician from Rice University has warned.

Why are many models **not reliable in the wild**?

Difficult for end users to access models

Machine Learning Developer

Collaborators/End Users

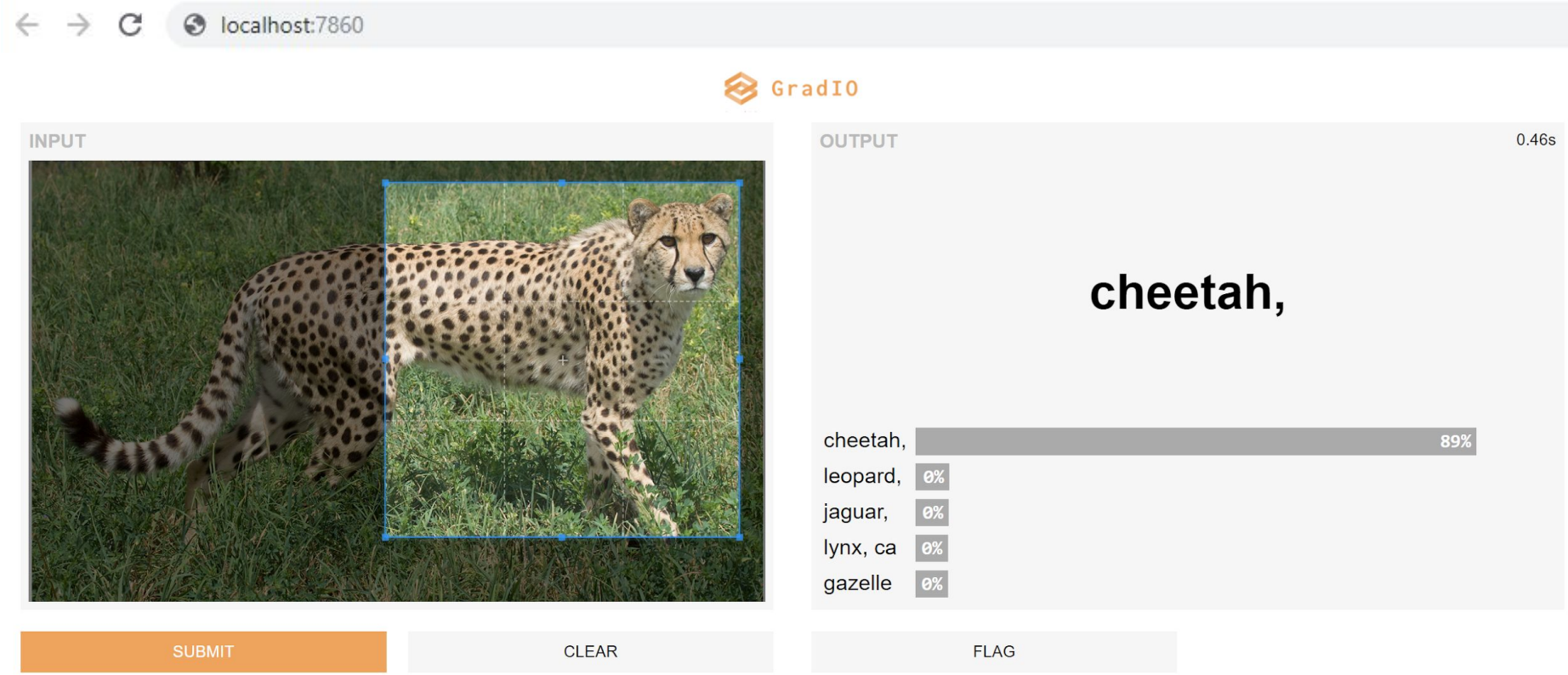
Interacting with ML models requires coding…

In [2]:
```
model = tf.keras.applications.inception_v3.InceptionV3()
```

In [3]:
```
from PIL import Image
import requests
from io import BytesIO

url = 'https://nationalzoo.si.edu/sites/default/files/animals/cheetah-004.jpg'

response = requests.get(url)
img = Image.open(BytesIO(response.content))

# resize the image into an array that the model can accept
img = np.array(img.resize((299, 299))).reshape((1, 299, 299, 3))

# scale the image and do other preprocessing
img = img/255
```

In [4]:
```
model.predict(img)
```

With gradio:


localhost:7860
GradIO
INPUT
OUTPUT
0.46s
cheetah,
cheetah, 89%
leopard, 0%
jaguar, 0%
lynx, ca 0%
gazelle 0%
SUBMIT
CLEAR
FLAG

gradio (gradient input output)

gradio allows you to:

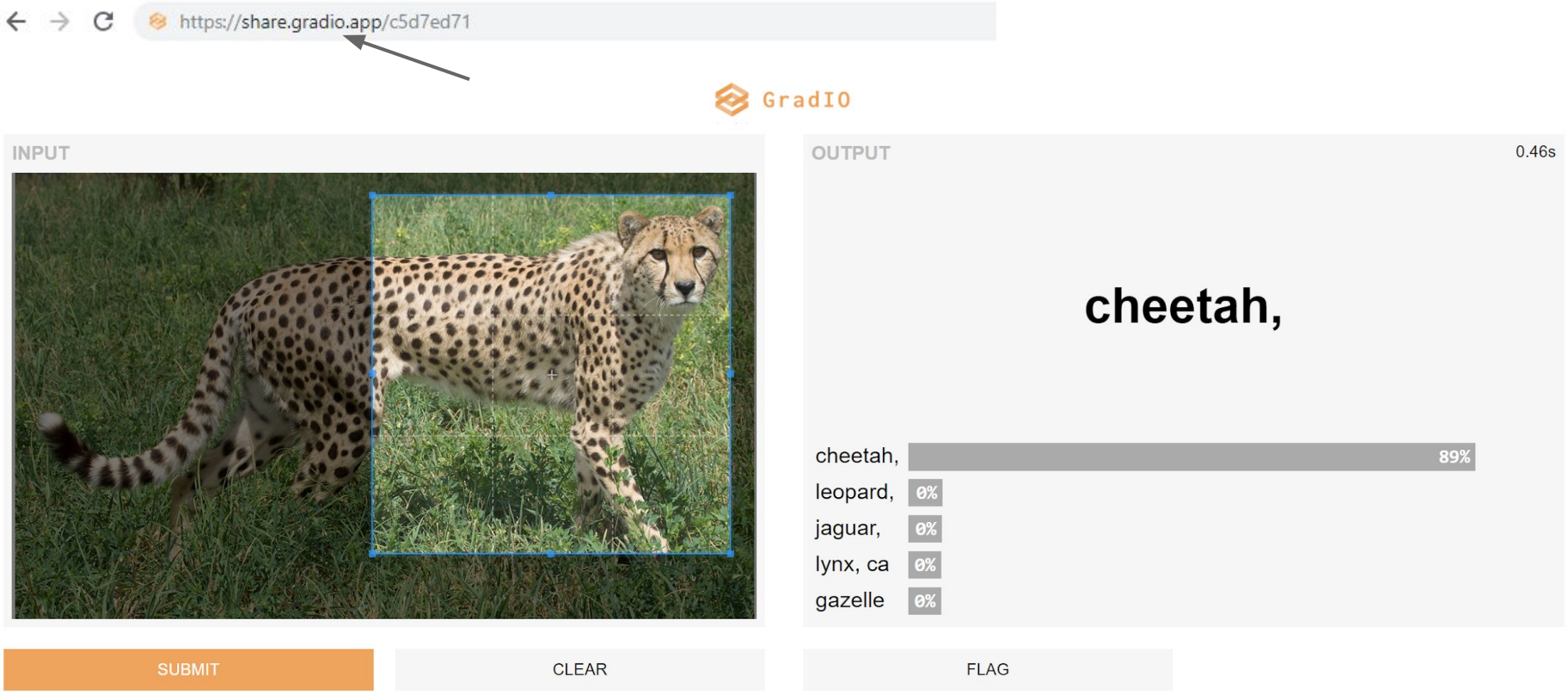
- rapidly create visual interfaces on top of your model

gradio (gradient input output)

gradio allows you to:

- rapidly create visual interfaces on top of your model
- share them with others without dealing with hosting

Example Usage



gradio (gradient input output)

gradio allows you to:

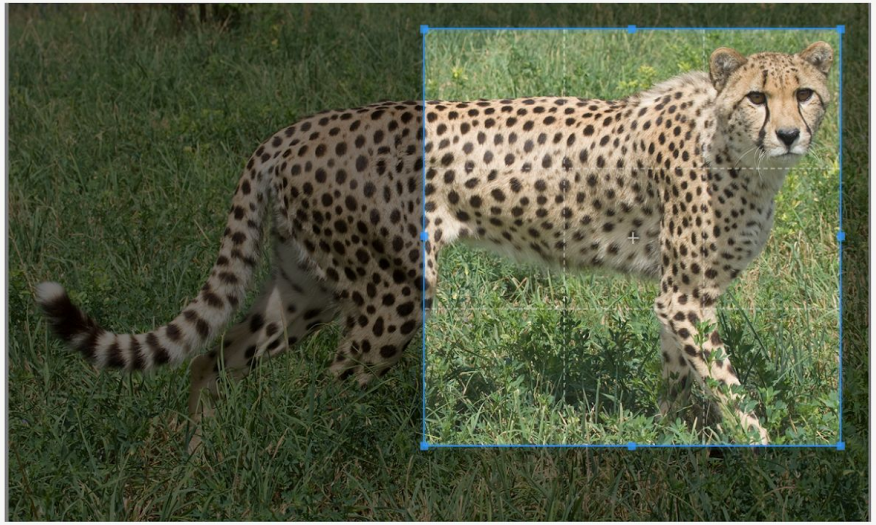
- rapidly create visual interfaces on top of your model
- share them with others without dealing with hosting
- get feedback

Example Usage

https://share.gradio.app/c5d7ed71

Gradio

INPUT



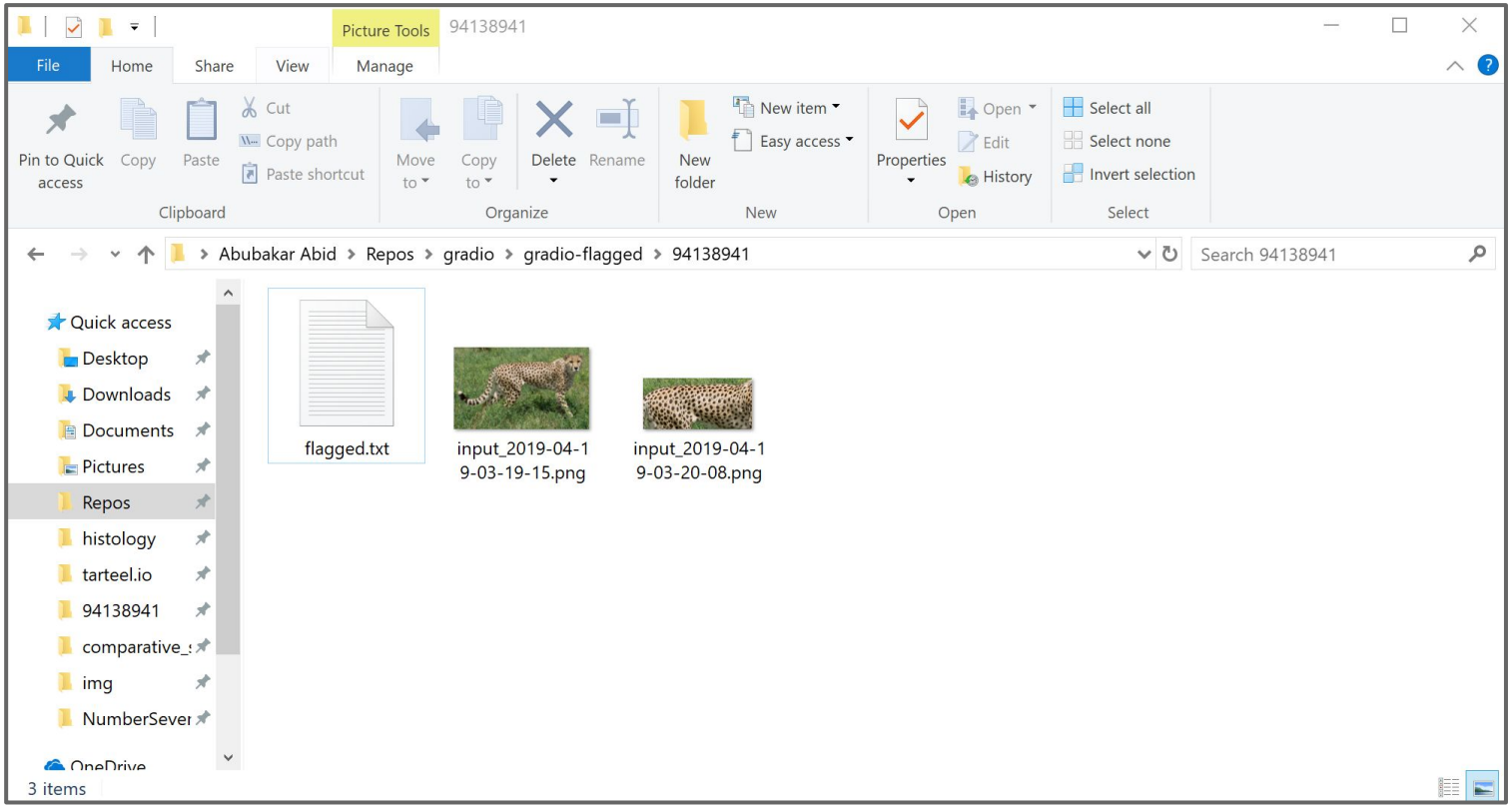
OUTPUT 0.46s

cheetah,

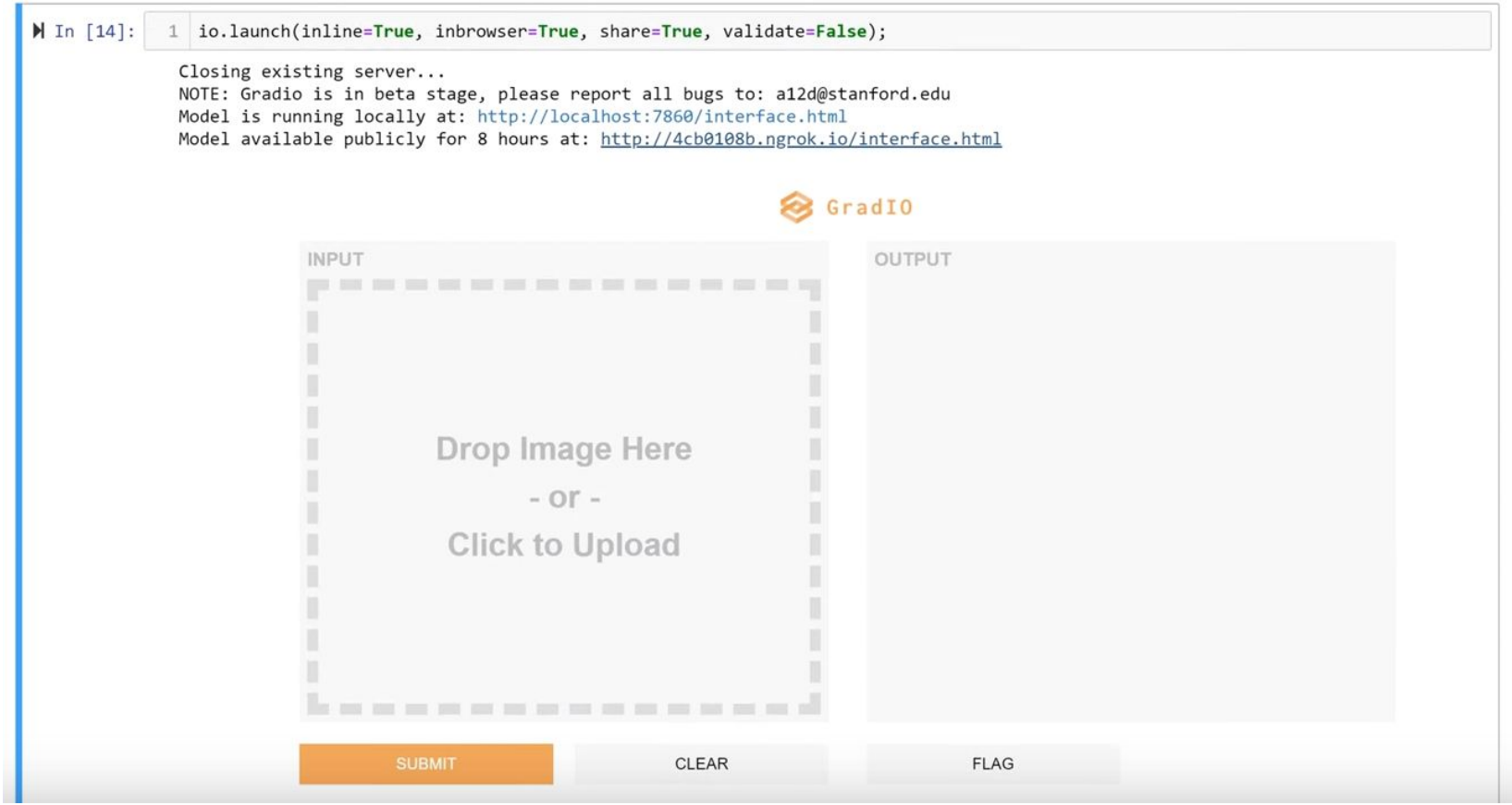
cheetah,	89%
leopard,	0%
jaguar,	0%
lynx, ca	0%
gazelle	0%

SUBMIT CLEAR FLAG

Saves the flagged input to developer's machine



Other nice features: embedding



DEMO

```
pip install gradio
```

Documentation: www.gradio.app

Takeaways

- `gradio` is library for **interacting** with trained machine learn models and **sharing** them.
- We hope it can help more **reliable** models
- To use it, simply: `pip install gradio`

www.gradio.app

(sign up for email updates)