```
!nvidia-smi
```

```
Sun Jul 27 05:39:39 2025
+-----------------------------------------------------------------------------------------+
| NVIDIA-SMI 550.54.15              Driver Version: 550.54.15      CUDA Version: 12.4     |
|-----------------------------------------+------------------------+----------------------+
| GPU  Name                 Persistence-M | Bus-Id          Disp.A | Volatile Uncorr. ECC |
| Fan  Temp   Perf          Pwr:Usage/Cap |           Memory-Usage | GPU-Util  Compute M. |
|                                         |                        |               MIG M. |
|=========================================+========================+======================|
|   0  Tesla T4                       Off |   00000000:00:04.0 Off |                    0 |
| N/A   53C    P8             10W /   70W |       0MiB /  15360MiB |      0%      Default |
|                                         |                        |                  N/A |
+-----------------------------------------+------------------------+----------------------+

+-----------------------------------------------------------------------------------------+
| Processes:                                                                              |
|  GPU   GI   CI        PID   Type   Process name                              GPU Memory |
|        ID   ID                                                               Usage      |
|=========================================================================================|
|  No running processes found                                                             |
+-----------------------------------------------------------------------------------------+
```

Text Generation Model using (HF Transformer + GPT2 Model)

```
from transformers import pipeline

generator = pipeline("text-generation", model= 'gpt2')
response = generator("What is Hugging Face", max_length = 40, num_return_sequences=1)
print(response[0]['generated_text'])
```

```
model.safetensors: 100%                                   548M/548M [00:12<00:00, 81.4MB/s]

generation_config.json: 100%                              124/124 [00:00<00:00, 10.6kB/s]

tokenizer_config.json: 100%                               26.0/26.0 [00:00<00:00, 2.67kB/s]

vocab.json: 100%                                      1.04M/1.04M [00:00<00:00, 25.6MB/s]

merges.txt: 100%                                      456k/456k [00:00<00:00, 25.0MB/s]

tokenizer.json: 100%                                   1.36M/1.36M [00:00<00:00, 46.7MB/s]
Device set to use cuda:0
Truncation was not explicitly activated but `max_length` is provided a specific value, please use `truncation=True` to explicitly tr
Setting `pad_token_id` to `eos_token_id`:50256 for open-end generation.
Both `max_new_tokens` (=256) and `max_length`(=40) seem to have been set. `max_new_tokens` will take precedence. Please refer to the
What is Hugging Face?"

"I'm not kidding, I love Hugging Face. I'm here for you."

"I love Hugging Face too, I think. All right, I'll come with you."

"Alright, I'm sure you'll find yourself here soon enough. I'm quite excited."

The two of them headed to a place where the two of them had been waiting.

When the entrance to the room was opened, the two of them were greeted by the two of them.

"Houji-san!"

The two of them were startled by the appearance of Hugging Face and were surprised to see it.

The two of them were at the entrance of the room where the two are waiting.

The two of them were surprised by the look of one of the two of them and were surprised to see the two of them in a hug.

The two of them were shocked by the appearance of Hugging Face and were surprised to see it.

As expected, Hugging Face has a cute face with a cute face.

However, it is quite troublesome for the two of them.

"Ah, I heard you're coming."

"……"
```

2- NER (Named Entity Recogniton)

```
from transformers import pipeline

ner = pipeline('ner', grouped_entities=True)
entities=ner('Hugging Face is based on NYC and partner with Google with $200 dollar price')
print(entities)
```

```
No model was supplied, defaulted to dbmdz/bert-large-cased-finetuned-conll03-english and revision 4c53496 (https://huggingface.co/db
Using a pipeline without specifying a model name and revision in production is not recommended.
Some weights of the model checkpoint at dbmdz/bert-large-cased-finetuned-conll03-english were not used when initializing BertForToke
- This IS expected if you are initializing BertForTokenClassification from the checkpoint of a model trained on another task or with
- This IS NOT expected if you are initializing BertForTokenClassification from the checkpoint of a model that you expect to be exact
Device set to use cuda:0
[{'entity_group': 'ORG', 'score': np.float32(0.6881353), 'word': 'Hugging Face', 'start': 0, 'end': 12}, {'entity_group': 'LOC', 'sc
/usr/local/lib/python3.11/dist-packages/transformers/pipelines/token_classification.py:181: UserWarning: `grouped_entities` is depre
  warnings.warn(
```

```
from transformers import pipeline

ner = pipeline('ner', grouped_entities=True)
entities=ner('My name is Prachi Singare')
print(entities)
```

```
No model was supplied, defaulted to dbmdz/bert-large-cased-finetuned-conll03-english and revision 4c53496 (https://huggingface.co/db
Using a pipeline without specifying a model name and revision in production is not recommended.
Some weights of the model checkpoint at dbmdz/bert-large-cased-finetuned-conll03-english were not used when initializing BertForToke
- This IS expected if you are initializing BertForTokenClassification from the checkpoint of a model trained on another task or with
- This IS NOT expected if you are initializing BertForTokenClassification from the checkpoint of a model that you expect to be exact
Device set to use cuda:0
[{'entity_group': 'PER', 'score': np.float32(0.9955527), 'word': 'Prachi Singare', 'start': 11, 'end': 25}]
```

3 - Sentiment Analysis

```
from transformers import pipeline

classifier = pipeline('sentiment-analysis')
result=classifier('I love hugging face library very much , it is so nice')
print(result)
```

```
No model was supplied, defaulted to distilbert/distilbert-base-uncased-finetuned-sst-2-english and revision 714eb0f (https://hugging
Using a pipeline without specifying a model name and revision in production is not recommended.
Device set to use cuda:0
[{'label': 'POSITIVE', 'score': 0.999874472618103}]
```

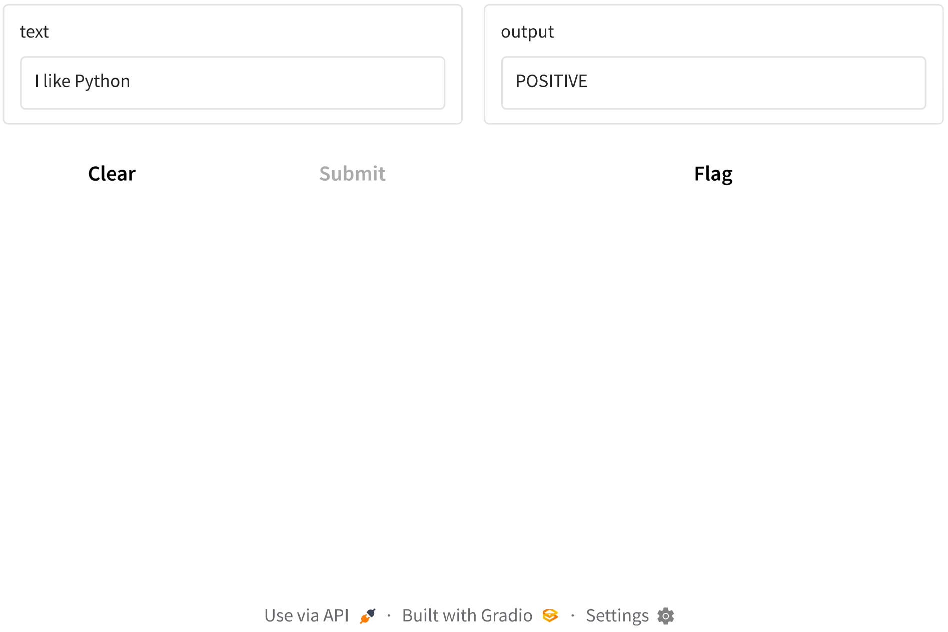
```
from transformers import pipeline

classifier = pipeline('sentiment-analysis')
result=classifier('The food in not tasty')
print(result)
```

```
No model was supplied, defaulted to distilbert/distilbert-base-uncased-finetuned-sst-2-english and revision 714eb0f (https://hugging
Using a pipeline without specifying a model name and revision in production is not recommended.
Device set to use cuda:0
[{'label': 'NEGATIVE', 'score': 0.9996969699859619}]
```

Sentiment Analysis Using GRADIO

```
import gradio as gr

from transformers import pipeline

classifier = pipeline('sentiment-analysis')

def sentiment_analysis(text):
  return classifier(text)[0]['label']

gr.Interface(fn = sentiment_analysis, inputs='text', outputs='text').launch()
```

```
No model was supplied, defaulted to distilbert/distilbert-base-uncased-finetuned-sst-2-english and revision 714eb0f (https://hugging
Using a pipeline without specifying a model name and revision in production is not recommended.
config.json: 100%                                                629/629 [00:00<00:00, 65.6kB/s]
model.safetensors: 100%                                          268M/268M [00:03<00:00, 97.2MB/s]
tokenizer_config.json: 100%                                      48.0/48.0 [00:00<00:00, 2.30kB/s]
vocab.txt:     232k/? [00:00<00:00, 7.19MB/s]
Device set to use cuda:0
It looks like you are running Gradio on a hosted Jupyter notebook, which requires `share=True`. Automatically setting `share=True` (

Colab notebook detected. To show errors in colab notebook, set debug=True in launch()
* Running on public URL: https://c13f017ef25fc668ba.gradio.live

This share link expires in 1 week. For free permanent hosting and GPU upgrades, run `gradio deploy` from the terminal in the working
```


text: I like Python

output: POSITIVE

Text to Image Model Using Diffusion Pipeline

```
from diffusers import StableDiffusionPipeline
import torch

model_id = "sd-legacy/stable-diffusion-v1-5"
pipe = StableDiffusionPipeline.from_pretrained(model_id, torch_dtype=torch.float16)
pipe = pipe.to("cuda")

prompt = "a photo of an astronaut riding a horse on mars"
image = pipe(prompt).images[0]

image.save("astronaut_rides_horse.png")
```

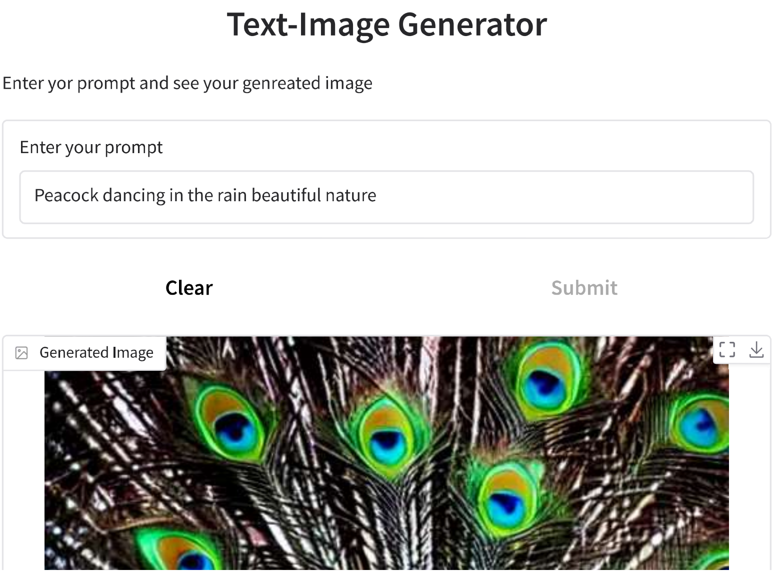
```
model_index.json: 100%                                   541/541 [00:00<00:00, 60.9kB/s]
Fetching 15 files: 100%                                  15/15 [00:26<00:00,  1.86s/it]
preprocessor_config.json: 100%                                   342/342 [00:00<00:00, 6.67kB/s]
config.json:      4.72k/? [00:00<00:00, 105kB/s]
config.json: 100%                                  617/617 [00:00<00:00, 10.6kB/s]
merges.txt:      525k/? [00:00<00:00, 6.94MB/s]
special_tokens_map.json: 100%                                   472/472 [00:00<00:00, 9.37kB/s]
model.safetensors: 100%                                   492M/492M [00:07<00:00, 85.0MB/s]
model.safetensors: 100%                                   1.22G/1.22G [00:15<00:00, 54.9MB/s]
scheduler_config.json: 100%                                   308/308 [00:00<00:00, 7.00kB/s]
tokenizer_config.json: 100%                                   806/806 [00:00<00:00, 15.5kB/s]
config.json: 100%                                  743/743 [00:00<00:00, 7.64kB/s]
config.json: 100%                                  547/547 [00:00<00:00, 16.0kB/s]
diffusion_pytorch_model.safetensors: 100%                                   3.44G/3.44G [00:25<00:00, 275MB/s]
vocab.json:      1.06M/? [00:00<00:00, 4.20MB/s]
diffusion_pytorch_model.safetensors: 100%                                   335M/335M [00:05<00:00, 64.6MB/s]
Loading pipeline components...: 100%                                   7/7 [00:23<00:00,  2.84s/it]
100%                                   50/50 [00:09<00:00,  6.07it/s]
```

```
from diffusers import StableDiffusionPipeline
import torch

model_id = "sd-legacy/stable-diffusion-v1-5"
pipe = StableDiffusionPipeline.from_pretrained(model_id, torch_dtype=torch.float16)
pipe = pipe.to("cuda")

prompt = "beautiful nature photo"
image = pipe(prompt).images[0]

image.save("nature.png")
```

```
Loading pipeline components...: 100%                                   7/7 [00:18<00:00,  2.37s/it]
100%                                   50/50 [00:08<00:00,  6.08it/s]
```

```
import gradio as gr
from diffusers import StableDiffusionPipeline
import torch

model_id = "sd-legacy/stable-diffusion-v1-5"
pipe = StableDiffusionPipeline.from_pretrained(
    model_id, torch_dtype=torch.float16,
    use_auth_token=True
)
pipe = pipe.to("cuda")

def generated_image(prompt):
  image = pipe(prompt).images[0]
  return image

# UI

gr.Interface(fn=generated_image,
             inputs=gr.Textbox(label='Enter your prompt', placeholder='e.g. Beautiful girl walking in street light with her pet dog'),
             outputs=gr.Image(type='pil',label='Generated Image'),
             title ='Text-Image Generator',
             description = ' Enter yor prompt and see your genreated image').launch()
```

```
Keyword arguments {'use_auth_token': True} are not expected by StableDiffusionPipeline and will be ignored.
 Loading pipeline components...: 100%                                          7/7 [00:25<00:00,  3.81s/it]
It looks like you are running Gradio on a hosted Jupyter notebook, which requires `share=True`. Automatically setting `share=True` (

Colab notebook detected. To show errors in colab notebook, set debug=True in launch()
* Running on public URL: https://190b6f4078a1f87682.gradio.live

This share link expires in 1 week. For free permanent hosting and GPU upgrades, run `gradio deploy` from the terminal in the working
```



Text-Image Generator

Enter yor prompt and see your genreated image

Enter your prompt

Peacock dancing in the rain beautiful nature

```
!nvidia-smi
```

```
Sun Jul 27 06:48:14 2025
+-----------------------------------------------------------------------------------------+
| NVIDIA-SMI 550.54.15              Driver Version: 550.54.15      CUDA Version: 12.4     |
|-----------------------------------------+------------------------+----------------------+
| GPU  Name                 Persistence-M | Bus-Id          Disp.A | Volatile Uncorr. ECC |
| Fan  Temp   Perf          Pwr:Usage/Cap |           Memory-Usage | GPU-Util  Compute M. |
|                                         |                        |               MIG M. |
|=========================================+========================+======================|
|   0  Tesla T4                       Off |   00000000:00:04.0 Off |                    0 |
| N/A   77C    P0             34W /   70W |    6280MiB /  15360MiB |      0%      Default |
|                                         |                        |                  N/A |
+-----------------------------------------+------------------------+----------------------+

+-----------------------------------------------------------------------------------------+
| Processes:                                                                              |
|  GPU   GI   CI        PID   Type   Process name                              GPU Memory |
|        ID   ID                                                               Usage      |
|=========================================================================================|
+-----------------------------------------------------------------------------------------+
```

Start coding or generate with AI.