

!nvidia-smi

Sun Jul 27 09:40:35 2025

NVIDIA-SMI 550.54.15				Driver Version: 550.54.15		CUDA Version: 12.4	
GPU	Name	Perf	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	0
N/A	66C	P0	31W / 70W	6310MiB / 15360MiB		0%	Default
							N/A

Processes:							
GPU	GI	CI	PID	Type	Process name	GPU Memory	
ID	ID					Usage	

## #1- TEXT GENERATION MODEL(Model- GPT2)

```
#1- TEXT GENERATION MODEL(Model- GPT2)
from transformers import pipeline
generator= pipeline('text-generation', model='gpt2')
response=generator('What is python',max_length=40, num_return_sequences=1)
print(response[0]['generated_text'])
```

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 python?

Py is a programming language that takes advantage of the Python API to process and display information.

You can use Python's built-in functions to write Python code, but it is very easy to learn.

Pipelines

Pipelines are a set of Python APIs that are used in conjunction with Python's built-in functions to create and test Python programs,

Pipelines are compiled using the default Python compiler, and are not statically linked.

Python programs do not have to be compiled by hand to work.

Pipelines are built from scratch, and are used to:

Display information about the current program

Send a message to the program running on the system

Communicate with the program running on the system

Read the output of the program

Pipeline methods are written in Python, and are only used to:

Read a program's output

Read and write data to a file or directory

Read and write and emit data to a file or directory

Pipelines are often compiled into a Python program and used as a template, for example.

Pipelines are written in C or C++ code,

## 2-NER(NAMED ENTITY RECOGNITION)

```
from transformers import pipeline
ner= pipeline('ner',grouped_entities=True)
entities=ner('Hugging face is basedon 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/dbmdz/bert-large-cased-finetuned-conll03-english>)  
 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 BertForToken  
 - 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': 'LOC', 'score': np.float32(0.99860436), 'word': 'NYC', 'start': 24, 'end': 27}, {'entity_group': 'ORG', 'score': r
/usr/local/lib/python3.11/dist-packages/transformers/pipelines/token_classification.py:186: UserWarning: `grouped_entities` is depre
warnings.warn(
/usr/local/lib/python3.11/dist-packages/torch/nn/modules/module.py:1750: FutureWarning: `encoder_attention_mask` is deprecated and v
return forward_call(*args, **kwargs)
```

```
from transformers import pipeline
ner= pipeline('ner',grouped_entities=True)
entities=ner('My name is sejla from NIT')
print(entities)
```

➡ No model was supplied, defaulted to dbmdz/bert-large-cased-finetuned-conll03-english and revision 4c53496 (<https://huggingface.co/dbmdz/bert-large-cased-finetuned-conll03-english>)  
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 BertForTokenClassification  
- This IS expected if you are initializing BertForTokenClassification from the checkpoint of a model trained on another task or with a different architecture  
- 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(0.97931606), 'word': 'sejla', 'start': 11, 'end': 16}, {'entity\_group': 'ORG', 'score': 0.99860436, 'word': 'NIT', 'start': 24, 'end': 27}]

### 3-SENTIMENT ANALYSIS

```
!pip install transformers dataset
```

➡ Requirement already satisfied: transformers in /usr/local/lib/python3.11/dist-packages (4.54.0)  
Requirement already satisfied: dataset in /usr/local/lib/python3.11/dist-packages (1.6.2)  
Requirement already satisfied: filelock in /usr/local/lib/python3.11/dist-packages (from transformers) (3.18.0)  
Requirement already satisfied: huggingface-hub<1.0, >=0.34.0 in /usr/local/lib/python3.11/dist-packages (from transformers) (0.34.1)  
Requirement already satisfied: numpy>=1.17 in /usr/local/lib/python3.11/dist-packages (from transformers) (2.0.2)  
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.11/dist-packages (from transformers) (25.0)  
Requirement already satisfied: pyyaml>=5.1 in /usr/local/lib/python3.11/dist-packages (from transformers) (6.0.2)  
Requirement already satisfied: regex!=2019.12.17 in /usr/local/lib/python3.11/dist-packages (from transformers) (2024.11.6)  
Requirement already satisfied: requests in /usr/local/lib/python3.11/dist-packages (from transformers) (2.32.3)  
Requirement already satisfied: tokenizers<0.22, >=0.21 in /usr/local/lib/python3.11/dist-packages (from transformers) (0.21.2)  
Requirement already satisfied: safetensors>=0.4.3 in /usr/local/lib/python3.11/dist-packages (from transformers) (0.5.3)  
Requirement already satisfied: tqdm>=4.27 in /usr/local/lib/python3.11/dist-packages (from transformers) (4.67.1)  
Requirement already satisfied: sqlalchemy<2.0.0, >=1.3.2 in /usr/local/lib/python3.11/dist-packages (from dataset) (1.4.54)  
Requirement already satisfied: alembic>=0.6.2 in /usr/local/lib/python3.11/dist-packages (from dataset) (1.16.4)  
Requirement already satisfied: banal>=1.0.1 in /usr/local/lib/python3.11/dist-packages (from dataset) (1.0.6)  
Requirement already satisfied: Mako in /usr/local/lib/python3.11/dist-packages (from alembic>=0.6.2->dataset) (1.1.3)  
Requirement already satisfied: typing-extensions>=4.12 in /usr/local/lib/python3.11/dist-packages (from alembic>=0.6.2->dataset) (4.12.0)  
Requirement already satisfied: fsspec>=2023.5.0 in /usr/local/lib/python3.11/dist-packages (from huggingface-hub<1.0, >=0.34.0->transformers) (2024.10.0)  
Requirement already satisfied: hf-xet<2.0.0, >=1.1.3 in /usr/local/lib/python3.11/dist-packages (from huggingface-hub<1.0, >=0.34.0->transformers) (1.1.3)  
Requirement already satisfied: greenlet!=0.4.17 in /usr/local/lib/python3.11/dist-packages (from sqlalchemy<2.0.0, >=1.3.2->dataset) (3.1.1)  
Requirement already satisfied: charset-normalizer<4, >=2 in /usr/local/lib/python3.11/dist-packages (from requests->transformers) (3.4.0)  
Requirement already satisfied: idna<4, >=2.5 in /usr/local/lib/python3.11/dist-packages (from requests->transformers) (3.10)  
Requirement already satisfied: urllib3<3, >=1.21.1 in /usr/local/lib/python3.11/dist-packages (from requests->transformers) (2.5.0)  
Requirement already satisfied: certifi<2025.4.26, >=2017.4.17 in /usr/local/lib/python3.11/dist-packages (from requests->transformers) (2025.7.11)

```
from transformers import pipeline
classifier=pipeline('sentiment-analysis')
result=classifier('The food is not tasty')
print('result')
```

➡ No model was supplied, defaulted to distilbert/distilbert-base-uncased-finetuned-sst-2-english and revision 714eb0f (<https://huggingface.co/distilbert/distilbert-base-uncased-finetuned-sst-2-english>)  
Using a pipeline without specifying a model name and revision in production is not recommended.  
Device set to use cuda:0  
result

```
from transformers import pipeline
classifier=pipeline('sentiment-analysis')
result=classifier('I love hugging face')
print('result')
```

➡ No model was supplied, defaulted to distilbert/distilbert-base-uncased-finetuned-sst-2-english and revision 714eb0f (<https://huggingface.co/distilbert/distilbert-base-uncased-finetuned-sst-2-english>)  
Using a pipeline without specifying a model name and revision in production is not recommended.  
Device set to use cuda:0  
result

```
!pip install gradio
```

➡ Requirement already satisfied: gradio in /usr/local/lib/python3.11/dist-packages (5.38.1)  
Requirement already satisfied: aiofiles<25.0, >=22.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (24.1.0)  
Requirement already satisfied: anyio<5.0, >=3.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (4.9.0)  
Requirement already satisfied: brotli>=1.1.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (1.1.0)  
Requirement already satisfied: fastapi<1.0, >=0.115.2 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.116.1)  
Requirement already satisfied: ffmpy in /usr/local/lib/python3.11/dist-packages (from gradio) (0.6.1)

```


Requirement already satisfied: gradio-client==1.11.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (1.11.0)
Requirement already satisfied: groovyn~=0.1 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.1.2)
Requirement already satisfied: httpx<1.0,>=0.24.1 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.28.1)
Requirement already satisfied: huggingface-hub>=0.28.1 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.34.1)
Requirement already satisfied: jinaja2<4.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (3.1.6)
Requirement already satisfied: markupsafe<4.0,>=2.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (3.0.2)
Requirement already satisfied: numpy<3.0,>=1.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (2.0.2)
Requirement already satisfied: orjson~=3.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (3.11.0)
Requirement already satisfied: packaging in /usr/local/lib/python3.11/dist-packages (from gradio) (25.0)
Requirement already satisfied: pandas<3.0,>=1.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (2.2.2)
Requirement already satisfied: pillow<12.0,>=8.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (11.3.0)
Requirement already satisfied: pydantic<2.12,>=2.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (2.11.7)
Requirement already satisfied: pydub in /usr/local/lib/python3.11/dist-packages (from gradio) (0.25.1)
Requirement already satisfied: python-multipart>=0.0.18 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.0.20)
Requirement already satisfied: pyyaml<7.0,>=5.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (6.0.2)
Requirement already satisfied: ruff>=0.9.3 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.12.4)
Requirement already satisfied: safehttpx<0.2.0,>=0.1.6 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.1.6)
Requirement already satisfied: semantic-version~=2.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (2.10.0)
Requirement already satisfied: starlette<1.0,>=0.40.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.47.2)
Requirement already satisfied: tomlkit<0.14.0,>=0.12.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.13.3)
Requirement already satisfied: typer<1.0,>=0.12 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.16.0)
Requirement already satisfied: typing-extensions~=4.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (4.14.1)
Requirement already satisfied: uvicorn>=0.14.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.35.0)
Requirement already satisfied: fsspec in /usr/local/lib/python3.11/dist-packages (from gradio-client==1.11.0->gradio) (2025.3.0)
Requirement already satisfied: websockets<16.0,>=10.0 in /usr/local/lib/python3.11/dist-packages (from gradio-client==1.11.0->gradio) (13.1)
Requirement already satisfied: idna>=2.8 in /usr/local/lib/python3.11/dist-packages (from anyio<5.0,>=3.0->gradio) (3.10)
Requirement already satisfied: sniffio>=1.1 in /usr/local/lib/python3.11/dist-packages (from anyio<5.0,>=3.0->gradio) (1.3.1)
Requirement already satisfied: certifi in /usr/local/lib/python3.11/dist-packages (from httpx<1.0,>=0.24.1->gradio) (2025.7.14)
Requirement already satisfied: httpcore==1.* in /usr/local/lib/python3.11/dist-packages (from httpx<1.0,>=0.24.1->gradio) (1.0.9)
Requirement already satisfied: h11>=0.16 in /usr/local/lib/python3.11/dist-packages (from httpcore==1.*->httpx<1.0,>=0.24.1->gradio) (0.14.0)
Requirement already satisfied: filelock in /usr/local/lib/python3.11/dist-packages (from huggingface-hub>=0.28.1->gradio) (3.18.0)
Requirement already satisfied: requests in /usr/local/lib/python3.11/dist-packages (from huggingface-hub>=0.28.1->gradio) (2.32.3)
Requirement already satisfied: tqdm>=4.42.1 in /usr/local/lib/python3.11/dist-packages (from huggingface-hub>=0.28.1->gradio) (4.67)
Requirement already satisfied: hf-xet<2.0.0,>=1.1.3 in /usr/local/lib/python3.11/dist-packages (from huggingface-hub>=0.28.1->gradio) (1.1.3)
Requirement already satisfied: python-dateutil>=2.8.2 in /usr/local/lib/python3.11/dist-packages (from pandas<3.0,>=1.0->gradio) (2.9.0)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.11/dist-packages (from pandas<3.0,>=1.0->gradio) (2025.2)
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.11/dist-packages (from pandas<3.0,>=1.0->gradio) (2025.2)
Requirement already satisfied: annotated-types>=0.6.0 in /usr/local/lib/python3.11/dist-packages (from pydantic<2.12,>=2.0->gradio) (0.7.0)
Requirement already satisfied: pydantic-core==2.33.2 in /usr/local/lib/python3.11/dist-packages (from pydantic<2.12,>=2.0->gradio) (2.33.2)
Requirement already satisfied: typing-inspection>=0.4.0 in /usr/local/lib/python3.11/dist-packages (from pydantic<2.12,>=2.0->gradio) (0.4.0)
Requirement already satisfied: click>=8.0.0 in /usr/local/lib/python3.11/dist-packages (from typer<1.0,>=0.12->gradio) (8.2.1)
Requirement already satisfied: shellingham>=1.3.0 in /usr/local/lib/python3.11/dist-packages (from typer<1.0,>=0.12->gradio) (1.5.4)
Requirement already satisfied: rich>=10.11.0 in /usr/local/lib/python3.11/dist-packages (from typer<1.0,>=0.12->gradio) (13.9.4)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.11/dist-packages (from python-dateutil>=2.8.2->pandas<3.0,>=1.0->gradio) (1.17.0)
Requirement already satisfied: markdown-it-py>=2.2.0 in /usr/local/lib/python3.11/dist-packages (from rich>=10.11.0->typer<1.0,>=0.12->gradio) (3.0.0)
Requirement already satisfied: pygments<3.0.0,>=2.13.0 in /usr/local/lib/python3.11/dist-packages (from rich>=10.11.0->typer<1.0,>=0.12->gradio) (2.19.0)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.11/dist-packages (from requests->huggingface-hub>=0.28.1->gradio) (3.4.0)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11/dist-packages (from requests->huggingface-hub>=0.28.1->gradio) (2.3.0)
Requirement already satisfied: mdurl~=0.1 in /usr/local/lib/python3.11/dist-packages (from markdown-it-py>=2.2.0->rich>=10.11.0->typer<1.0,>=0.12->gradio) (0.1.2)

```

```

import gradio as gr
from transformers import pipeline
classifier=pipeline('sentiment-analysis')
def analyze_sentiment(text):
    return classifier(text)[0]['label']
gr.Interface(fn=analyze_sentiment,inputs='text',outputs='text').launch()

```

 No model was supplied, defaulted to distilbert/distilbert-base-uncased-finetuned-sst-2-english and revision 714eb0f (<https://huggingface.co/distilbert/distilbert-base-uncased-finetuned-sst-2-english>)  
 Using a pipeline without specifying a model name and revision in production is not recommended.  
 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://535c17fbbac07bd433.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

<div>text</div> <div>a movie is good</div>	<div>output</div> <div>POSITIVE</div>
Clear	Submit
	Flag

Use via API  · Built with Gradio  · Settings 

Start coding or [generate](#) with AI.

## 4-TEXT TO IMAGE MODEL USING DIFFUSION MODE

```
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 girl walking in street light with her pet dog"
image=pipe(prompt).images[0]
image.save('beautiful girl.png')
```



Loading pipeline components...: 100%

7/7 [00:36<00:00, 3.34s/it]

100%

50/50 [00:08<00:00, 6.22it/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')
#define Gradio interface function
def generate_image(prompt):
    image=pipe(prompt).images[0]
    return image
#ui
gr.Interface(
    fn=generate_image,
    inputs=gr.Textbox(label='Enter your prompt',placeholder="e.g. peacock dancing in the rain"),
    outputs=gr.Image('type=pil',label='Generated Image'),
    title='Sejal sarve Text- Image Generator',
    description="Type a description and generate an image using stable Diffussion v1.5"
).launch()
```

Keyword arguments {'use\_auth\_token': True} are not expected by StableDiffusionPipeline and will be ignored.  
Loading pipeline components...: 100% 7/7 [00:29<00:00, 3.12s/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://5c7634fd52657ff1c9.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

## Sejal sarve Text- Image Generator

Type a description and generate an image using stable Diffussion v1.5

Enter your prompt

cat dancing in the garden

Clear

Submit

