

```
pip install diffusers transformers accelerate scipy safetensors
```

```
Requirement already satisfied: diffusers in  
/usr/local/lib/python3.11/dist-packages (0.32.2)  
Requirement already satisfied: transformers in  
/usr/local/lib/python3.11/dist-packages (4.50.3)  
Requirement already satisfied: accelerate in  
/usr/local/lib/python3.11/dist-packages (1.5.2)  
Requirement already satisfied: scipy in  
/usr/local/lib/python3.11/dist-packages (1.14.1)  
Requirement already satisfied: safetensors in  
/usr/local/lib/python3.11/dist-packages (0.5.3)  
Requirement already satisfied: importlib-metadata in  
/usr/local/lib/python3.11/dist-packages (from diffusers) (8.6.1)  
Requirement already satisfied: filelock in  
/usr/local/lib/python3.11/dist-packages (from diffusers) (3.18.0)  
Requirement already satisfied: huggingface-hub>=0.23.2 in  
/usr/local/lib/python3.11/dist-packages (from diffusers) (0.30.1)  
Requirement already satisfied: numpy in  
/usr/local/lib/python3.11/dist-packages (from diffusers) (2.0.2)  
Requirement already satisfied: regex!=2019.12.17 in  
/usr/local/lib/python3.11/dist-packages (from diffusers) (2024.11.6)  
Requirement already satisfied: requests in  
/usr/local/lib/python3.11/dist-packages (from diffusers) (2.32.3)  
Requirement already satisfied: Pillow in  
/usr/local/lib/python3.11/dist-packages (from diffusers) (11.1.0)  
Requirement already satisfied: packaging>=20.0 in  
/usr/local/lib/python3.11/dist-packages (from transformers) (24.2)  
Requirement already satisfied: pyyaml>=5.1 in  
/usr/local/lib/python3.11/dist-packages (from transformers) (6.0.2)  
Requirement already satisfied: tokenizers<0.22,>=0.21 in  
/usr/local/lib/python3.11/dist-packages (from transformers) (0.21.1)  
Requirement already satisfied: tqdm>=4.27 in  
/usr/local/lib/python3.11/dist-packages (from transformers) (4.67.1)  
Requirement already satisfied: psutil in  
/usr/local/lib/python3.11/dist-packages (from accelerate) (5.9.5)  
Requirement already satisfied: torch>=2.0.0 in  
/usr/local/lib/python3.11/dist-packages (from accelerate)  
(2.6.0+cu124)  
Requirement already satisfied: fsspec>=2023.5.0 in  
/usr/local/lib/python3.11/dist-packages (from huggingface-hub>=0.23.2-  
>diffusers) (2025.3.2)  
Requirement already satisfied: typing-extensions>=3.7.4.3 in  
/usr/local/lib/python3.11/dist-packages (from huggingface-hub>=0.23.2-  
>diffusers) (4.13.0)  
Requirement already satisfied: networkx in  
/usr/local/lib/python3.11/dist-packages (from torch>=2.0.0-  
>accelerate) (3.4.2)  
Requirement already satisfied: jinja2 in  
/usr/local/lib/python3.11/dist-packages (from torch>=2.0.0-
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>accelerate) (3.1.6)
Collecting nvidia-cuda-nvrtc-cu12==12.4.127 (from torch>=2.0.0-
>accelerate)
  Downloading nvidia_cuda_nvrtc_cu12-12.4.127-py3-none-
manylinux2014_x86_64.whl.metadata (1.5 kB)
Collecting nvidia-cuda-runtime-cu12==12.4.127 (from torch>=2.0.0-
>accelerate)
  Downloading nvidia_cuda_runtime_cu12-12.4.127-py3-none-
manylinux2014_x86_64.whl.metadata (1.5 kB)
Collecting nvidia-cuda-cupti-cu12==12.4.127 (from torch>=2.0.0-
>accelerate)
  Downloading nvidia_cuda_cupti_cu12-12.4.127-py3-none-
manylinux2014_x86_64.whl.metadata (1.6 kB)
Collecting nvidia-cudnn-cu12==9.1.0.70 (from torch>=2.0.0->accelerate)
  Downloading nvidia_cudnn_cu12-9.1.0.70-py3-none-
manylinux2014_x86_64.whl.metadata (1.6 kB)
Collecting nvidia-cublas-cu12==12.4.5.8 (from torch>=2.0.0-
>accelerate)
  Downloading nvidia_cublas_cu12-12.4.5.8-py3-none-
manylinux2014_x86_64.whl.metadata (1.5 kB)
Collecting nvidia-cufft-cu12==11.2.1.3 (from torch>=2.0.0->accelerate)
  Downloading nvidia_cufft_cu12-11.2.1.3-py3-none-
manylinux2014_x86_64.whl.metadata (1.5 kB)
Collecting nvidia-curand-cu12==10.3.5.147 (from torch>=2.0.0-
>accelerate)
  Downloading nvidia_curand_cu12-10.3.5.147-py3-none-
manylinux2014_x86_64.whl.metadata (1.5 kB)
Collecting nvidia-cusolver-cu12==11.6.1.9 (from torch>=2.0.0-
>accelerate)
  Downloading nvidia_cusolver_cu12-11.6.1.9-py3-none-
manylinux2014_x86_64.whl.metadata (1.6 kB)
Collecting nvidia-cusparselt-cu12==0.6.2 (from torch>=2.0.0-
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Requirement already satisfied: nvidia-cusparselt-cu12==0.6.2 in
/usr/local/lib/python3.11/dist-packages (from torch>=2.0.0-
>accelerate) (0.6.2)
Requirement already satisfied: nvidia-nccl-cu12==2.21.5 in
/usr/local/lib/python3.11/dist-packages (from torch>=2.0.0-
>accelerate) (2.21.5)
Requirement already satisfied: nvidia-nvtx-cu12==12.4.127 in
/usr/local/lib/python3.11/dist-packages (from torch>=2.0.0-
>accelerate) (12.4.127)
Collecting nvidia-nvjitlink-cu12==12.4.127 (from torch>=2.0.0-
>accelerate)
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Requirement already satisfied: triton==3.2.0 in
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/usr/local/lib/python3.11/dist-packages (from torch>=2.0.0-
>accelerate) (3.2.0)
Requirement already satisfied: sympy==1.13.1 in
/usr/local/lib/python3.11/dist-packages (from torch>=2.0.0-
>accelerate) (1.13.1)
Requirement already satisfied: mpmath<1.4,>=1.1.0 in
/usr/local/lib/python3.11/dist-packages (from sympy==1.13.1-
>torch>=2.0.0->accelerate) (1.3.0)
Requirement already satisfied: zipp>=3.20 in
/usr/local/lib/python3.11/dist-packages (from importlib-metadata-
>diffusers) (3.21.0)
Requirement already satisfied: charset-normalizer<4,>=2 in
/usr/local/lib/python3.11/dist-packages (from requests->diffusers)
(3.4.1)
Requirement already satisfied: idna<4,>=2.5 in
/usr/local/lib/python3.11/dist-packages (from requests->diffusers)
(3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in
/usr/local/lib/python3.11/dist-packages (from requests->diffusers)
(2.3.0)
Requirement already satisfied: certifi>=2017.4.17 in
/usr/local/lib/python3.11/dist-packages (from requests->diffusers)
(2025.1.31)
Requirement already satisfied: MarkupSafe>=2.0 in
/usr/local/lib/python3.11/dist-packages (from jinja2->torch>=2.0.0-
>accelerate) (3.0.2)
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manylinux2014_x86_64.whl (363.4 MB)
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e-cu12, nvidia-cuda-nvrtc-cu12, nvidia-cuda-cupti-cu12, nvidia-cublas-
cu12, nvidia-cusparse-cu12, nvidia-cudnn-cu12, nvidia-cusolver-cu12
Attempting uninstall: nvidia-nvjitlink-cu12
Found existing installation: nvidia-nvjitlink-cu12 12.5.82
Uninstalling nvidia-nvjitlink-cu12-12.5.82:
Successfully uninstalled nvidia-nvjitlink-cu12-12.5.82
Attempting uninstall: nvidia-curand-cu12
Found existing installation: nvidia-curand-cu12 10.3.6.82
Uninstalling nvidia-curand-cu12-10.3.6.82:
Successfully uninstalled nvidia-curand-cu12-10.3.6.82
Attempting uninstall: nvidia-cufft-cu12
Found existing installation: nvidia-cufft-cu12 11.2.3.61
Uninstalling nvidia-cufft-cu12-11.2.3.61:
Successfully uninstalled nvidia-cufft-cu12-11.2.3.61
Attempting uninstall: nvidia-cuda-runtime-cu12
Found existing installation: nvidia-cuda-runtime-cu12 12.5.82
Uninstalling nvidia-cuda-runtime-cu12-12.5.82:
Successfully uninstalled nvidia-cuda-runtime-cu12-12.5.82
Attempting uninstall: nvidia-cuda-nvrtc-cu12
Found existing installation: nvidia-cuda-nvrtc-cu12 12.5.82
Uninstalling nvidia-cuda-nvrtc-cu12-12.5.82:
Successfully uninstalled nvidia-cuda-nvrtc-cu12-12.5.82
Attempting uninstall: nvidia-cuda-cupti-cu12
Found existing installation: nvidia-cuda-cupti-cu12 12.5.82
Uninstalling nvidia-cuda-cupti-cu12-12.5.82:
Successfully uninstalled nvidia-cuda-cupti-cu12-12.5.82
Attempting uninstall: nvidia-cublas-cu12
Found existing installation: nvidia-cublas-cu12 12.5.3.2
Uninstalling nvidia-cublas-cu12-12.5.3.2:
Successfully uninstalled nvidia-cublas-cu12-12.5.3.2
Attempting uninstall: nvidia-cusparse-cu12
Found existing installation: nvidia-cusparse-cu12 12.5.1.3
Uninstalling nvidia-cusparse-cu12-12.5.1.3:
Successfully uninstalled nvidia-cusparse-cu12-12.5.1.3
Attempting uninstall: nvidia-cudnn-cu12
Found existing installation: nvidia-cudnn-cu12 9.3.0.75
Uninstalling nvidia-cudnn-cu12-9.3.0.75:
Successfully uninstalled nvidia-cudnn-cu12-9.3.0.75
Attempting uninstall: nvidia-cusolver-cu12
Found existing installation: nvidia-cusolver-cu12 11.6.3.83
Uninstalling nvidia-cusolver-cu12-11.6.3.83:
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Successfully uninstalled nvidia-cusolver-cu12-11.6.3.83
Successfully installed nvidia-cublas-cu12-12.4.5.8 nvidia-cuda-cupti-cu12-12.4.127 nvidia-cuda-nvrtc-cu12-12.4.127 nvidia-cuda-runtime-cu12-12.4.127 nvidia-cudnn-cu12-9.1.0.70 nvidia-cufft-cu12-11.2.1.3 nvidia-curand-cu12-10.3.5.147 nvidia-cusolver-cu12-11.6.1.9 nvidia-cuspars-cu12-12.3.1.170 nvidia-nvjitlink-cu12-12.4.127

```
!huggingface-cli login
```

```
To log in, `huggingface_hub` requires a token generated from
https://huggingface.co/settings/tokens .
Enter your token (input will not be visible):
Add token as git credential? (Y/n)
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
Invalid input. Must be one of ('y', 'yes', '1', 'n', 'no', '0', '')
Add token as git credential? (Y/n)
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
Invalid input. Must be one of ('y', 'yes', '1', 'n', 'no', '0', '')
Add token as git credential? (Y/n) y
Token is valid (permission: fineGrained).
The token `stable diffusion tokens` has been saved to
/root/.cache/huggingface/stored_tokens
Cannot authenticate through git-credential as no helper is defined on
your machine.
You might have to re-authenticate when pushing to the Hugging Face
Hub.
Run the following command in your terminal in case you want to set the
'store' credential helper as default.
```

```
git config --global credential.helper store
```

```
Read https://git-scm.com/book/en/v2/Git-Tools-Credential-Storage for
more details.
Token has not been saved to git credential helper.
Your token has been saved to /root/.cache/huggingface/token
Login successful.
The current active token is: `stable diffusion tokens`
```

```

from diffusers import StableDiffusionPipeline, EulerDiscreteScheduler
import torch

model_id = "stabilityai/stable-diffusion-2-1-base"

scheduler = EulerDiscreteScheduler.from_pretrained(model_id,
subfolder="scheduler")
pipe = StableDiffusionPipeline.from_pretrained(model_id,
scheduler=scheduler, 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_id":"1d148849290a41b2a35239e8e1975228","version_major":2,"version_minor":0}

{"model_id":"6d733d6f8beb4c6c8eb4f03df2415f16","version_major":2,"version_minor":0}

import gradio as gr
from diffusers import StableDiffusionPipeline, EulerDiscreteScheduler
import torch
model_id = "stabilityai/stable-diffusion-2-1-base"
scheduler = EulerDiscreteScheduler.from_pretrained(model_id,
subfolder="scheduler")
pipe = StableDiffusionPipeline.from_pretrained(model_id,
scheduler=scheduler, torch_dtype=torch.float16)
pipe = pipe.to("cuda")
def generated_image(prompt):
    image = pipe(prompt).image[0]
    return image
gr.Interface(
    fn = generated_image,
    inputs = gr.Textbox(label = "Enter your prompt"),
    outputs = gr.Image(type="pil"),
    title="Stable Diffusion 2.1 - MANOJ IMAGE GENERATOR APP",
    description="Enter text prompt and see the generated image"
).launch()

{"model_id":"f1db7bb31166472fb3b20f9f2ae30bc9","version_major":2,"version_minor":0}

```

Running Gradio in a Colab notebook requires sharing enabled.
Automatically setting `share=True` (you can turn this off by setting
`share=False` in `launch()` explicitly).

Colab notebook detected. To show errors in colab notebook, set

```
debug=True in launch()
* Running on public URL: https://01414a4cbd90486b48.gradio.live
```

This share link expires in 72 hours. For free permanent hosting and GPU upgrades, run `gradio deploy` from the terminal in the working directory to deploy to Hugging Face Spaces (<https://huggingface.co/spaces>)

<IPython.core.display.HTML object>

```
import gradio as gr
from diffusers import StableDiffusionPipeline, EulerDiscreteScheduler
import torch
model_id = "stabilityai/stable-diffusion-2-1-base"
scheduler = EulerDiscreteScheduler.from_pretrained(model_id,
subfolder="scheduler")
pipe = StableDiffusionPipeline.from_pretrained(model_id,
scheduler=scheduler, torch_dtype=torch.float16)
pipe = pipe.to("cuda")
def generated_image(prompt):
    image = pipe(prompt).images[0]
    return image
gr.Interface(
    fn=generated_image,
    inputs=gr.Textbox(label="Enter your prompt"),
    outputs=gr.Image(type="pil"),
    title="Stable Diffusion 2.1 - Manoj IMAGE GENERATOR APP",
    description="Enter text prompt and see the generated image"
).launch()

{"model_id":"227426d5503f4822945f2ebc4f55ea51","version_major":2,"version_minor":0}
```

Running Gradio in a Colab notebook requires sharing enabled. Automatically setting `share=True` (you can turn this off by setting `share=False` in `launch()` explicitly).

Colab notebook detected. To show errors in colab notebook, set debug=True in launch()
* Running on public URL: <https://bd465267a2ddaf1d64.gradio.live>

This share link expires in 72 hours. For free permanent hosting and GPU upgrades, run `gradio deploy` from the terminal in the working directory to deploy to Hugging Face Spaces (<https://huggingface.co/spaces>)

<IPython.core.display.HTML object>

