

```
In [6]: # exclude warning
import warnings
warnings.filterwarnings("ignore", message="Consider using IPython.display.IFrame instead")

# import library
from IPython.display import HTML

# embed video
HTML('<iframe width="560" height="315" src="https://www.youtube.com/embed/SVcsDDABEkM" title=
```

Out[6]:

```
In [7]: # Install required libraries
!pip install --upgrade git+https://github.com/huggingface/diffusers.git transformers accelera
```

Defaulting to user installation because normal site-packages is not writeable

Collecting git+https://github.com/huggingface/diffusers.git

Cloning https://github.com/huggingface/diffusers.git to c:\users\aryan\appdata\local\temp\pip-req-build-ku0_r2of

Resolved https://github.com/huggingface/diffusers.git to commit e1bdcc7af38ff9d1d8fdbc223aa7b306b19bdfdf

Installing build dependencies: started

Installing build dependencies: finished with status 'done'

Getting requirements to build wheel: started

Getting requirements to build wheel: finished with status 'done'

Preparing metadata (pyproject.toml): started

Preparing metadata (pyproject.toml): finished with status 'done'

Requirement already satisfied: transformers in c:\users\aryan\appdata\roaming\python\python39\site-packages (4.37.2)

Requirement already satisfied: accelerate in c:\users\aryan\appdata\roaming\python\python39\site-packages (0.27.0)

Requirement already satisfied: scipy in c:\users\aryan\appdata\roaming\python\python39\site-packages (1.12.0)

Requirement already satisfied: importlib-metadata in c:\programdata\anaconda3\lib\site-packages (from diffusers==0.27.0.dev0) (4.11.3)

Requirement already satisfied: requests in c:\programdata\anaconda3\lib\site-packages (from diffusers==0.27.0.dev0) (2.28.1)

Requirement already satisfied: huggingface-hub>=0.20.2 in c:\users\aryan\appdata\roaming\python\python39\site-packages (from diffusers==0.27.0.dev0) (0.20.3)

Requirement already satisfied: safetensors>=0.3.1 in c:\users\aryan\appdata\roaming\python\python39\site-packages (from diffusers==0.27.0.dev0) (0.4.2)

Requirement already satisfied: numpy in c:\users\aryan\appdata\roaming\python\python39\site-packages (from diffusers==0.27.0.dev0) (1.26.3)

Requirement already satisfied: filelock in c:\programdata\anaconda3\lib\site-packages (from diffusers==0.27.0.dev0) (3.6.0)

Requirement already satisfied: regex!=2019.12.17 in c:\programdata\anaconda3\lib\site-packages (from diffusers==0.27.0.dev0) (2022.7.9)

Requirement already satisfied: Pillow in c:\programdata\anaconda3\lib\site-packages (from diffusers==0.27.0.dev0) (9.2.0)

Requirement already satisfied: tqdm>=4.27 in c:\programdata\anaconda3\lib\site-packages (from transformers) (4.64.1)

Requirement already satisfied: packaging>=20.0 in c:\programdata\anaconda3\lib\site-packages (from transformers) (21.3)

Requirement already satisfied: tokenizers<0.19,>=0.14 in c:\users\aryan\appdata\roaming\python\python39\site-packages (from transformers) (0.15.1)

Requirement already satisfied: pyyaml>=5.1 in c:\programdata\anaconda3\lib\site-packages (from transformers) (6.0)

Requirement already satisfied: torch>=1.10.0 in c:\users\aryan\appdata\roaming\python\python39\site-packages (from accelerate) (2.2.0)

Requirement already satisfied: psutil in c:\programdata\anaconda3\lib\site-packages (from accelerate) (5.9.0)

Requirement already satisfied: typing-extensions>=3.7.4.3 in c:\users\aryan\appdata\roaming\python\python39\site-packages (from huggingface-hub>=0.20.2->diffusers==0.27.0.dev0) (4.9.0)

Requirement already satisfied: fsspec>=2023.5.0 in c:\users\aryan\appdata\roaming\python\python39\site-packages (from huggingface-hub>=0.20.2->diffusers==0.27.0.dev0) (2024.2.0)

Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in c:\programdata\anaconda3\lib\site-packages (from packaging>=20.0->transformers) (3.0.9)

Requirement already satisfied: networkx in c:\programdata\anaconda3\lib\site-packages (from torch>=1.10.0->accelerate) (2.8.4)

Requirement already satisfied: jinja2 in c:\programdata\anaconda3\lib\site-packages (from torch>=1.10.0->accelerate) (2.11.3)

Requirement already satisfied: sympy in c:\programdata\anaconda3\lib\site-packages (from torch>=1.10.0->accelerate) (1.10.1)

Requirement already satisfied: colorama in c:\programdata\anaconda3\lib\site-packages (from tqdm>=4.27->transformers) (0.4.5)

Requirement already satisfied: zipp>=0.5 in c:\programdata\anaconda3\lib\site-packages (from importlib-metadata->diffusers==0.27.0.dev0) (3.8.0)

Requirement already satisfied: idna<4,>=2.5 in c:\programdata\anaconda3\lib\site-packages (from requests->diffusers==0.27.0.dev0) (3.3)

Requirement already satisfied: charset-normalizer<3,>=2 in c:\programdata\anaconda3\lib\site-packages (from requests->diffusers==0.27.0.dev0) (2.0.4)

Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\programdata\anaconda3\lib\site-packages (from requests->diffusers==0.27.0.dev0) (1.26.11)

Requirement already satisfied: certifi>=2017.4.17 in c:\programdata\anaconda3\lib\site-packages

```
es (from requests->diffusers==0.27.0.dev0) (2022.9.14)
Requirement already satisfied: MarkupSafe>=0.23 in c:\programdata\anaconda3\lib\site-packages
(from jinja2->torch>=1.10.0->accelerate) (2.0.1)
Requirement already satisfied: mpmath>=0.19 in c:\programdata\anaconda3\lib\site-packages (fr
om sympy->torch>=1.10.0->accelerate) (1.2.1)
```

```
Running command git clone --filter=blob:none --quiet https://github.com/huggingface/diffuse
rs.git 'C:\Users\aryan\AppData\Local\Temp\pip-req-build-ku0_r2of'
```

```
In [9]: from diffusers import StableDiffusionPipeline, EulerDiscreteScheduler
import torch
from torch import autocast
```

```
In [10]: # Set up GPU environment
device = "cuda" if torch.cuda.is_available() else "cpu"
torch_device = torch.device(device)
```

```
In [11]: # Set up pipeline with Stable Diffusion model and scheduler
model_id = "stabilityai/stable-diffusion-2"
```

```
In [12]: # Load scheduler
scheduler = EulerDiscreteScheduler.from_pretrained(model_id, subfolder="scheduler")
```

```
In [13]: # Load Stable Diffusion pipeline
pipe = StableDiffusionPipeline.from_pretrained(model_id, scheduler=scheduler, revision="fp16")
pipe = pipe.to(torch_device)
```

```
C:\Users\aryan\AppData\Roaming\Python\Python39\site-packages\diffusers\pipelines\pipeline_util
s.py:270: FutureWarning: You are loading the variant fp16 from stabilityai/stable-diffusion-
2 via `revision='fp16'` even though you can load it via `variant='fp16'`. Loading model varian
ts via `revision='fp16'` is deprecated and will be removed in diffusers v1. Please use `varia
nt='fp16'` instead.
```

```
warnings.warn(
  unet\diffusion_pytorch_model.safetensors not found
```

```
Loading pipeline components...: 0%|          | 0/5 [00:00<?, ?it/s]
```

```
C:\Users\aryan\AppData\Roaming\Python\Python39\site-packages\diffusers\models\lora.py:384: Fu
tureWarning: `LoRACompatibleLinear` is deprecated and will be removed in version 1.0.0. Use o
f `LoRACompatibleLinear` is deprecated. Please switch to PEFT backend by installing PEFT: `pi
p install peft`.
```

```
deprecate("LoRACompatibleLinear", "1.0.0", deprecation_message)
```

```
C:\Users\aryan\AppData\Roaming\Python\Python39\site-packages\diffusers\models\lora.py:300: Fu
tureWarning: `LoRACompatibleConv` is deprecated and will be removed in version 1.0.0. Use of
`LoRACompatibleConv` is deprecated. Please switch to PEFT backend by installing PEFT: `pip in
stall peft`.
```

```
deprecate("LoRACompatibleConv", "1.0.0", deprecation_message)
```

```
Pipelines loaded with `dtype=torch.float16` cannot run with `cpu` device. It is not recommend
ed to move them to `cpu` as running them will fail. Please make sure to use an accelerator to
run the pipeline in inference, due to the lack of support for `float16` operations on this dev
ice in PyTorch. Please, remove the `torch_dtype=torch.float16` argument, or use another devic
e for inference.
```

```
Pipelines loaded with `dtype=torch.float16` cannot run with `cpu` device. It is not recommend
ed to move them to `cpu` as running them will fail. Please make sure to use an accelerator to
run the pipeline in inference, due to the lack of support for `float16` operations on this dev
ice in PyTorch. Please, remove the `torch_dtype=torch.float16` argument, or use another devic
e for inference.
```

```
Pipelines loaded with `dtype=torch.float16` cannot run with `cpu` device. It is not recommend
ed to move them to `cpu` as running them will fail. Please make sure to use an accelerator to
run the pipeline in inference, due to the lack of support for `float16` operations on this dev
ice in PyTorch. Please, remove the `torch_dtype=torch.float16` argument, or use another devic
e for inference.
```

```
In [16]: # Ensure torch is using float32
torch.set_default_dtype(torch.float32)
```

```
In [17]: # Set up pipeline with Stable Diffusion model and scheduler
model_id = "stabilityai/stable-diffusion-2"
```

```
In [18]: # Load scheduler
scheduler = EulerDiscreteScheduler.from_pretrained(model_id, subfolder="scheduler")
```

```
In [19]: # Load Stable Diffusion pipeline
pipe = StableDiffusionPipeline.from_pretrained(model_id, scheduler=scheduler, revision="fp16")
pipe = pipe.to(torch_device)
```

```
unet\diffusion_pytorch_model.safetensors not found
Loading pipeline components...: 0%|          | 0/5 [00:00<?, ?it/s]
```

```
In [20]: # Prompt
prompt = 'A steampunk woman reading a book with her cat at the bar'
```

```
# Inference
image = pipe(prompt, height=768, width=768).images[0]
image
```

```
0%|          | 0/50 [00:00<?, ?it/s]
```

Out[20]:

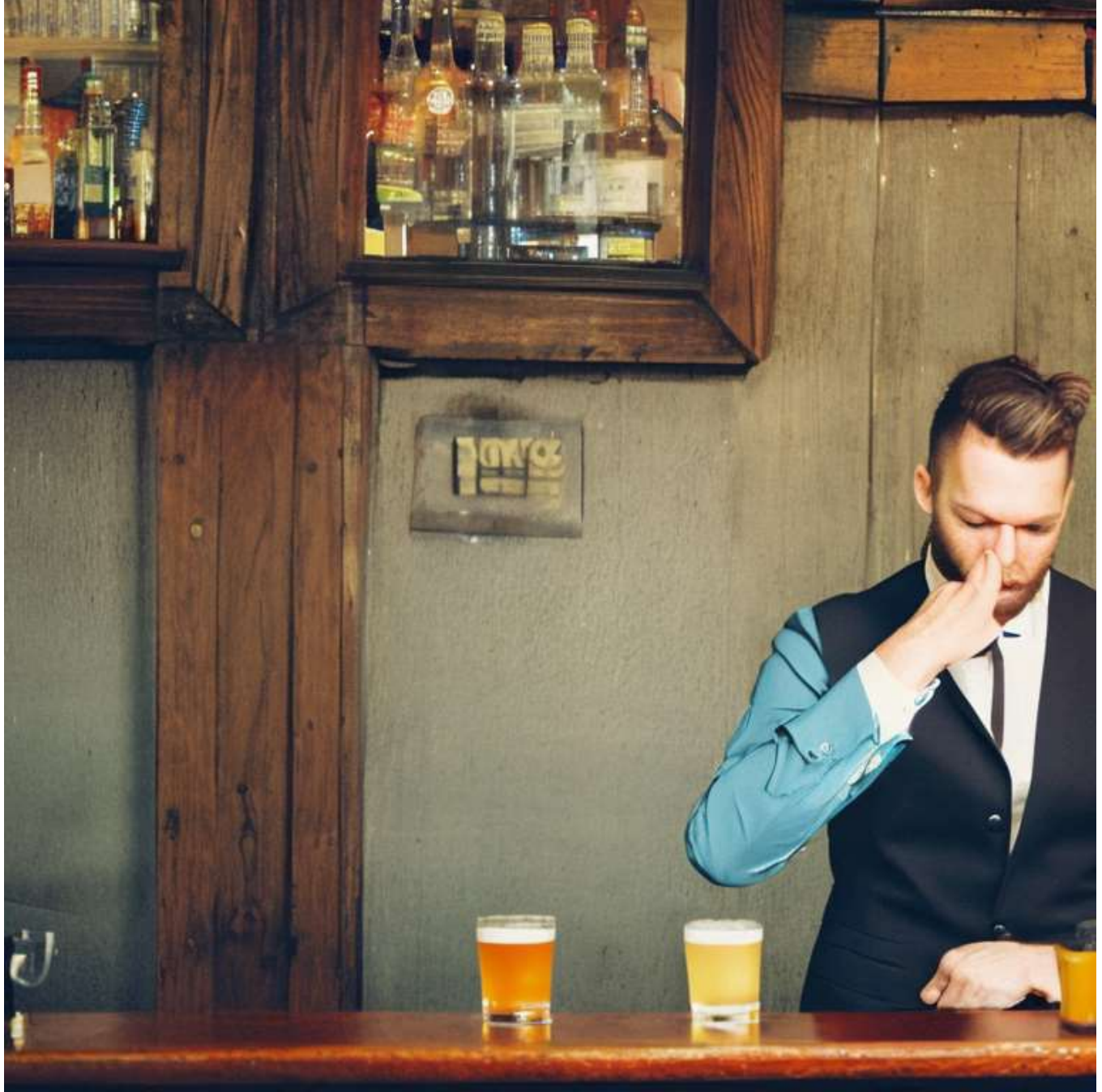


```
In [21]: # Prompt
prompt = 'A businessman at a pub'
```

```
# Inference
image = pipe(prompt, height=768, width=768).images[0]
image
```

```
0%|          | 0/50 [00:00<?, ?it/s]
```


Out[21]:



```
In [22]: # Prompt
prompt = 'Peaky Blinders'

# Inference
image = pipe(prompt, height=768, width=768).images[0]
image

0%|          | 0/50 [00:00<?, ?it/s]
```

Out[22]:



In []: