

Code:

```
import torch
import torchvision.transforms as transforms
from torchvision.utils import save_image
from torch.utils.data import DataLoader
from torchvision.datasets import CelebA
from torch.autograd import Variable
import numpy as np
import os
import imageio

# Mount Google Drive to access files
from google.colab import drive
drive.mount('/content/drive')

# Device configuration
device = torch.device('cuda' if torch.cuda.is_available() else 'cpu')

# Hyperparameters
latent_size = 100
batch_size = 64
num_epochs = 10
sample_dir = '/content/drive/My Drive/generated_images'
video_file = '/content/drive/My Drive/generated_video.mp4'

# Create directories if not exists
if not os.path.exists(sample_dir):
    os.makedirs(sample_dir)

# CelebA dataset
transform = transforms.Compose([
    transforms.Resize((64, 64)),
    transforms.ToTensor(),
    transforms.Normalize((0.5, 0.5, 0.5), (0.5, 0.5, 0.5))
])

celeba_dataset = CelebA(root='/content/data',
                        split='all',
                        transform=transform,
                        download=True)

# Data loader
data_loader = DataLoader(dataset=celeba_dataset,
                        batch_size=batch_size,
```

```
shuffle=True)
```

```
# Generator model
```

```
class Generator(torch.nn.Module):
```

```
    def __init__(self):
```

```
        super(Generator, self).__init__()
```

```
        self.main = torch.nn.Sequential(
```

```
            torch.nn.ConvTranspose2d(latent_size, 512, 4, 1, 0, bias=False),
```

```
            torch.nn.BatchNorm2d(512),
```

```
            torch.nn.ReLU(True),
```

```
            torch.nn.ConvTranspose2d(512, 256, 4, 2, 1, bias=False),
```

```
            torch.nn.BatchNorm2d(256),
```

```
            torch.nn.ReLU(True),
```

```
            torch.nn.ConvTranspose2d(256, 128, 4, 2, 1, bias=False),
```

```
            torch.nn.BatchNorm2d(128),
```

```
            torch.nn.ReLU(True),
```

```
            torch.nn.ConvTranspose2d(128, 64, 4, 2, 1, bias=False),
```

```
            torch.nn.BatchNorm2d(64),
```

```
            torch.nn.ReLU(True),
```

```
            torch.nn.ConvTranspose2d(64, 3, 4, 2, 1, bias=False),
```

```
            torch.nn.Tanh()
```

```
        )
```

```
    def forward(self, x):
```

```
        return self.main(x)
```

```
# Create generator
```

```
generator = Generator().to(device)
```

```
# Load pretrained model
```

```
generator.load_state_dict(torch.load('/content/drive/My Drive/generator.pth',
```

```
map_location=torch.device(device)))
```

```
generator.eval()
```

```
# Generate video frames
```

```
images = []
```

```
with torch.no_grad():
```

```
    for i in range(100): # Generate 100 frames
```

```
        noise = Variable(torch.randn(batch_size, latent_size, 1, 1)).to(device)
```

```
        fake_images = generator(noise)
```

```
        images.append(fake_images)
```

```
# Combine images into video
```

```
with imageio.get_writer(video_file, mode='l') as writer:
```

```
for image in images:  
    for img in image:  
        img = img.cpu().numpy()  
        img = np.transpose(img, (1, 2, 0))  
        img = ((img + 1) * 255 / 2).astype(np.uint8)  
        writer.append_data(img)
```

```
print("Video generation completed!")
```

Output:

