master-thesis

September 5, 2023

Getting Started   We will be using TensorFlow and Keras for data augmentation and matplotlib for displaying the images.

```python
[1]: from glob import glob
     import pandas as pd
     import cv2
     from scripts.visualization import Visualization
     import matplotlib.pyplot as plt
     import numpy as np
```

Reading Data

```python
[2]: # Path to all data
     data_dir = './lgg-mri-segmentation/kaggle_3m'

     # img size
     IMG_SIZE = 512
```

```python
[3]: images_paths = []
     masks_paths = glob(f'{data_dir}/*/*_mask*')

     for i in masks_paths:
         images_paths.append(i.replace('_mask', ''))

     df = pd.DataFrame(data= {'images_paths': images_paths, 'masks_paths':␣
       ↪masks_paths})
     df.head()
```

```
[3]:                                        images_paths
     0  ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_… \
     1  ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
     2  ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
     3  ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
     4  ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…

                                         masks_paths
     0  ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
     1  ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
```

```
2    ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
3    ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
4    ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
```

[4]:
```python
def pos_neg_diagnosis(masks_paths):
    value = np.max(cv2.imread(masks_paths))
    if value > 0 :
        return 1
    else:
        return 0

df['label'] = df['masks_paths'].apply(lambda x: pos_neg_diagnosis(x))
df
```

[4]:
```
                                        images_paths
0       ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…  \
1       ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
2       ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
3       ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
4       ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…
…                                                    …
3924    ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_A60K_…
3925    ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_A60K_…
3926    ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_A60K_…
3927    ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_A60K_…
3928    ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_A60K_…

                                         masks_paths  label
0       ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…      0
1       ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…      0
2       ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…      0
3       ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…      0
4       ./lgg-mri-segmentation/kaggle_3m/TCGA_CS_6667_…      0
…                                                    …    …
3924    ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_A60K_…      0
3925    ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_A60K_…      0
3926    ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_A60K_…      0
3927    ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_A60K_…      0
3928    ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_A60K_…      0

[3929 rows x 3 columns]
```

Data Distribution

[5]:
```python
visualization = Visualization(df)
visualization.plot_distribution_grouped_by_label()
```

Distribution of Data by Label
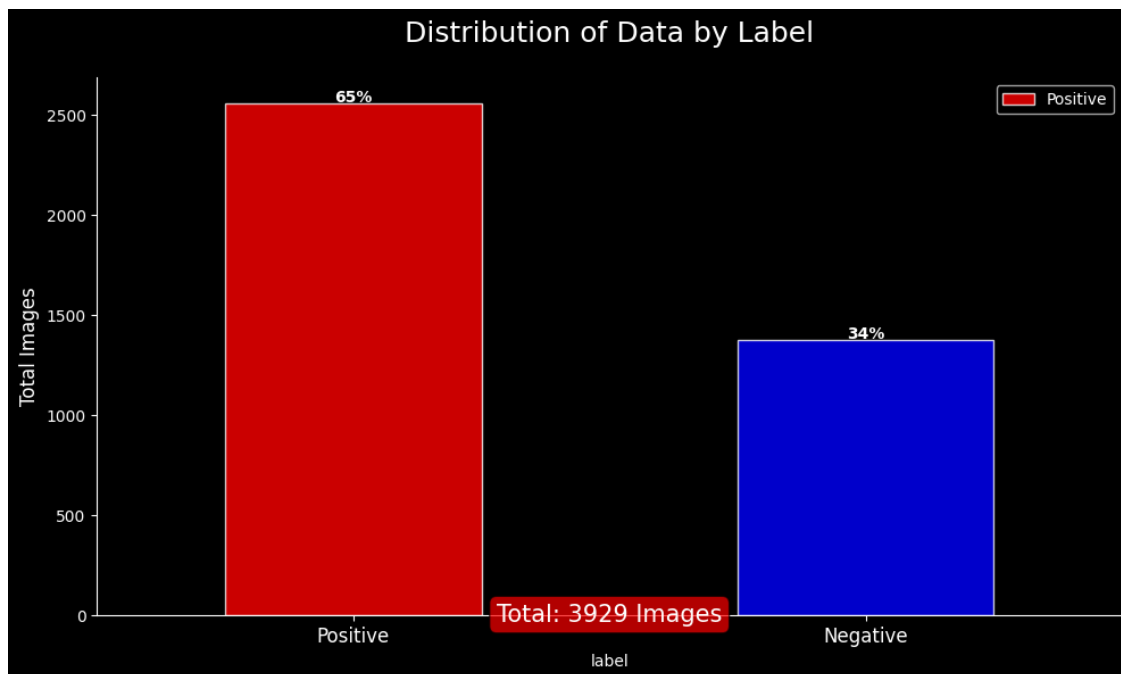
```
[6]: visualization = Visualization(df)
     visualization.plot_images_and_masks()
```
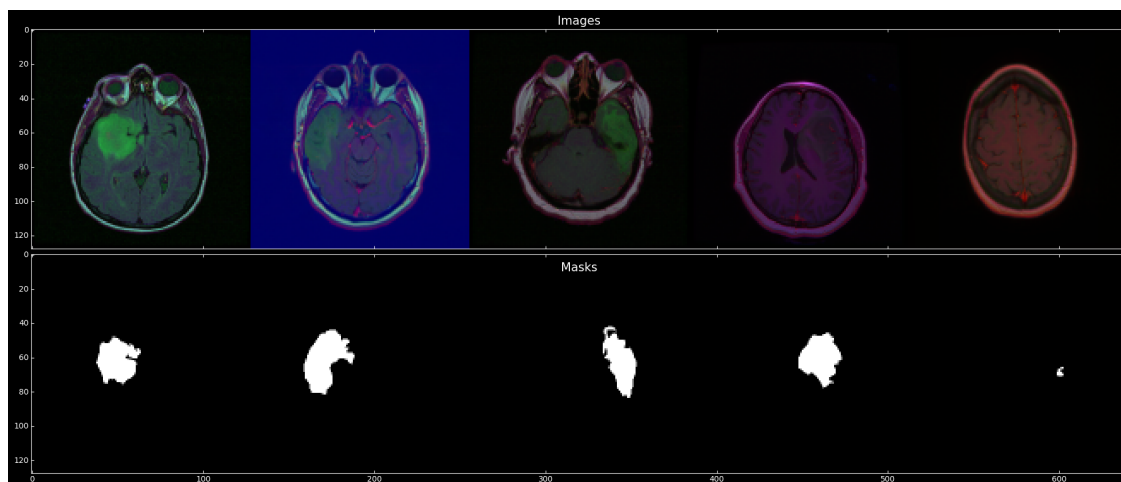

Data Loading In the code below, we have loaded 80% training, 10% validation, and a 10% test set with labels and metadata.

```
[7]: mask_df = df[df['label'] == 1]
     mask_df.shape
```

```
[7]: (1373, 3)
```

```
[8]: from sklearn.model_selection import train_test_split
     # Split df into train_df and val_df
     train_df, val_df = train_test_split(mask_df, stratify=mask_df.label,␣
       ↪test_size=0.1)
     train_df = train_df.reset_index(drop=True)
     val_df = val_df.reset_index(drop=True)

     # Split train_df into train_df and test_df
     val_df, test_df = train_test_split(val_df, stratify=val_df.label, test_size=0.3)
     val_df = val_df.reset_index(drop=True)
     test_df = test_df.reset_index(drop=True)

     # train_df = train_df[:1000]
     print(f"Train: {train_df.shape} \nVal: {val_df.shape} \nTest: {test_df.shape}")
```

```
Train: (1235, 3)
Val: (96, 3)
Test: (42, 3)
```

```
[9]: visualization = Visualization(train_df)
     visualization.plot_images_and_masks()
```
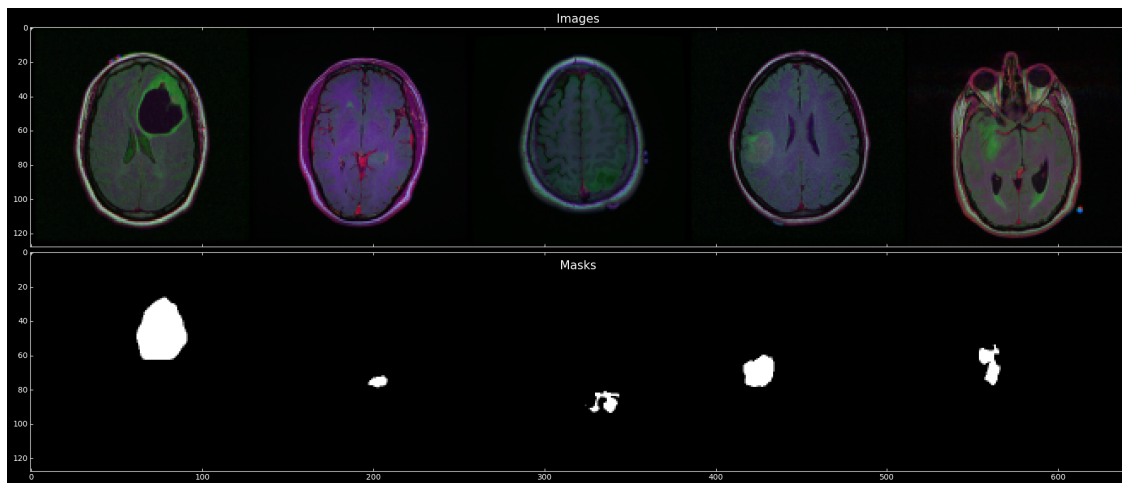

GAN

```
[10]: train_df
```

```
[10]:                                               images_paths
      0      ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_5962_…  \
      1      ./lgg-mri-segmentation/kaggle_3m/TCGA_DU_6408_…
```

```
2       ./lgg-mri-segmentation/kaggle_3m/TCGA_HT_A5RC_…
3       ./lgg-mri-segmentation/kaggle_3m/TCGA_HT_8114_…
4       ./lgg-mri-segmentation/kaggle_3m/TCGA_DU_7014_…
…                                              …
1230    ./lgg-mri-segmentation/kaggle_3m/TCGA_DU_7299_…
1231    ./lgg-mri-segmentation/kaggle_3m/TCGA_HT_7686_…
1232    ./lgg-mri-segmentation/kaggle_3m/TCGA_DU_7300_…
1233    ./lgg-mri-segmentation/kaggle_3m/TCGA_HT_8114_…
1234    ./lgg-mri-segmentation/kaggle_3m/TCGA_DU_8162_…


                                       masks_paths  label
0       ./lgg-mri-segmentation/kaggle_3m/TCGA_FG_5962_…     1
1       ./lgg-mri-segmentation/kaggle_3m/TCGA_DU_6408_…     1
2       ./lgg-mri-segmentation/kaggle_3m/TCGA_HT_A5RC_…     1
3       ./lgg-mri-segmentation/kaggle_3m/TCGA_HT_8114_…     1
4       ./lgg-mri-segmentation/kaggle_3m/TCGA_DU_7014_…     1
…                                              …      …
1230    ./lgg-mri-segmentation/kaggle_3m/TCGA_DU_7299_…     1
1231    ./lgg-mri-segmentation/kaggle_3m/TCGA_HT_7686_…     1
1232    ./lgg-mri-segmentation/kaggle_3m/TCGA_DU_7300_…     1
1233    ./lgg-mri-segmentation/kaggle_3m/TCGA_HT_8114_…     1
1234    ./lgg-mri-segmentation/kaggle_3m/TCGA_DU_8162_…     1

[1235 rows x 3 columns]
```

[11]:
```python
from scripts.brain_mri_dataset import BrainMriDataset
from torch.utils.data import DataLoader
IMG_SIZE = 64
BATCH_SIZE = 26

# train
train_dataset = BrainMriDataset(df=train_df, img_size=IMG_SIZE)
train_dataloader = DataLoader(train_dataset, batch_size=BATCH_SIZE,
  ↪num_workers=4, shuffle=True)

# val
val_dataset = BrainMriDataset(df=val_df, img_size=IMG_SIZE)
val_dataloader = DataLoader(val_dataset, batch_size=BATCH_SIZE, num_workers=4,
  ↪shuffle=True)

#test
test_dataset = BrainMriDataset(df=test_df, img_size=IMG_SIZE)
test_dataloader = DataLoader(test_dataset, batch_size=BATCH_SIZE,
  ↪num_workers=4, shuffle=True)
```

[12]:
```python
images, masks, labels = next(iter(train_dataloader))
```

```
[13]: print(images.shape, masks.shape)
```

torch.Size([26, 64, 64, 3]) torch.Size([26, 64, 64, 3])

```
[14]: print(images[0].shape, masks[0].shape)
```

torch.Size([64, 64, 3]) torch.Size([64, 64, 3])

```
[15]: visualization = Visualization(train_df)
      visualization.plot_images(images)
```
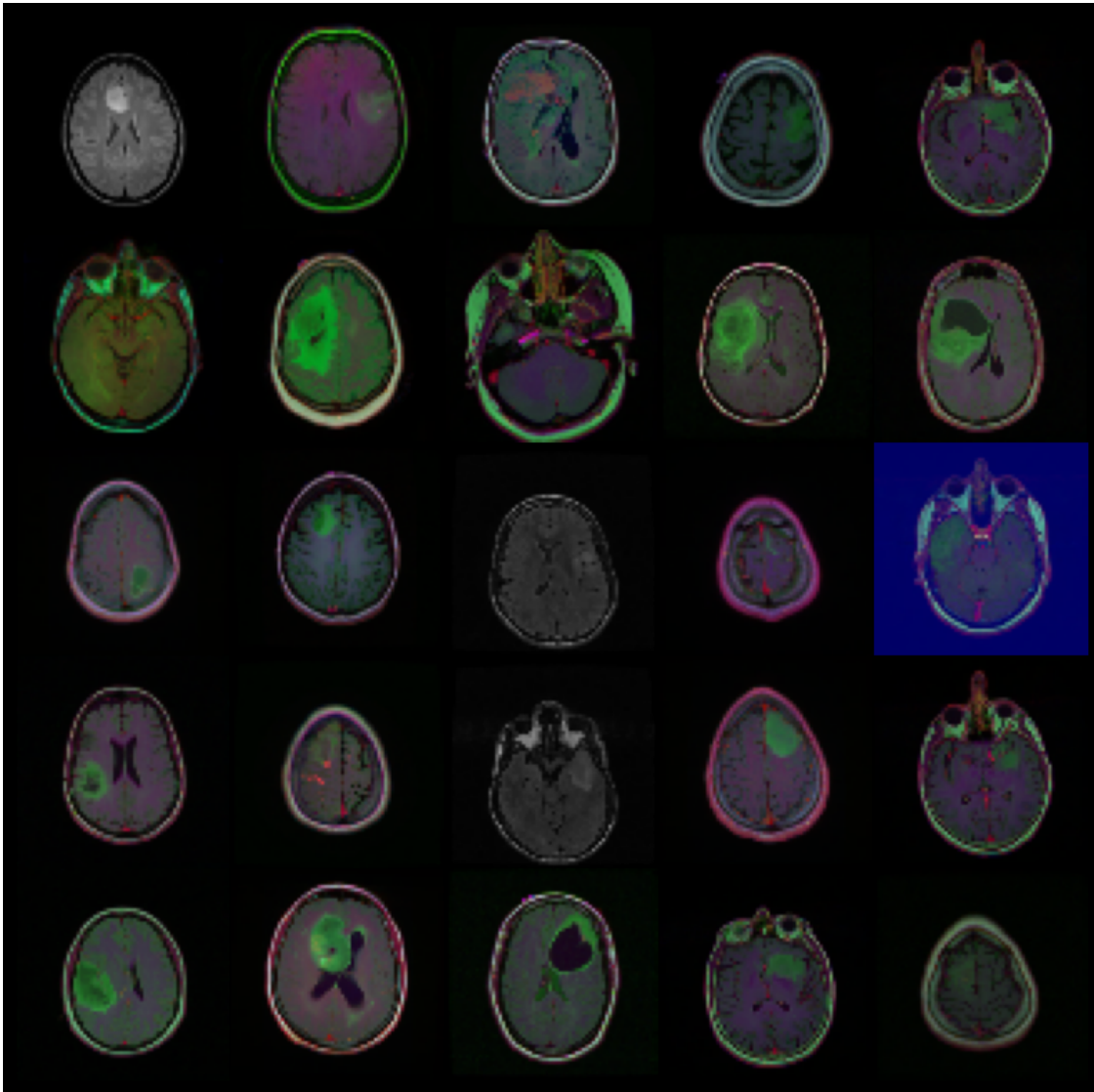


```
[16]: visualization.plot_images(masks)
```
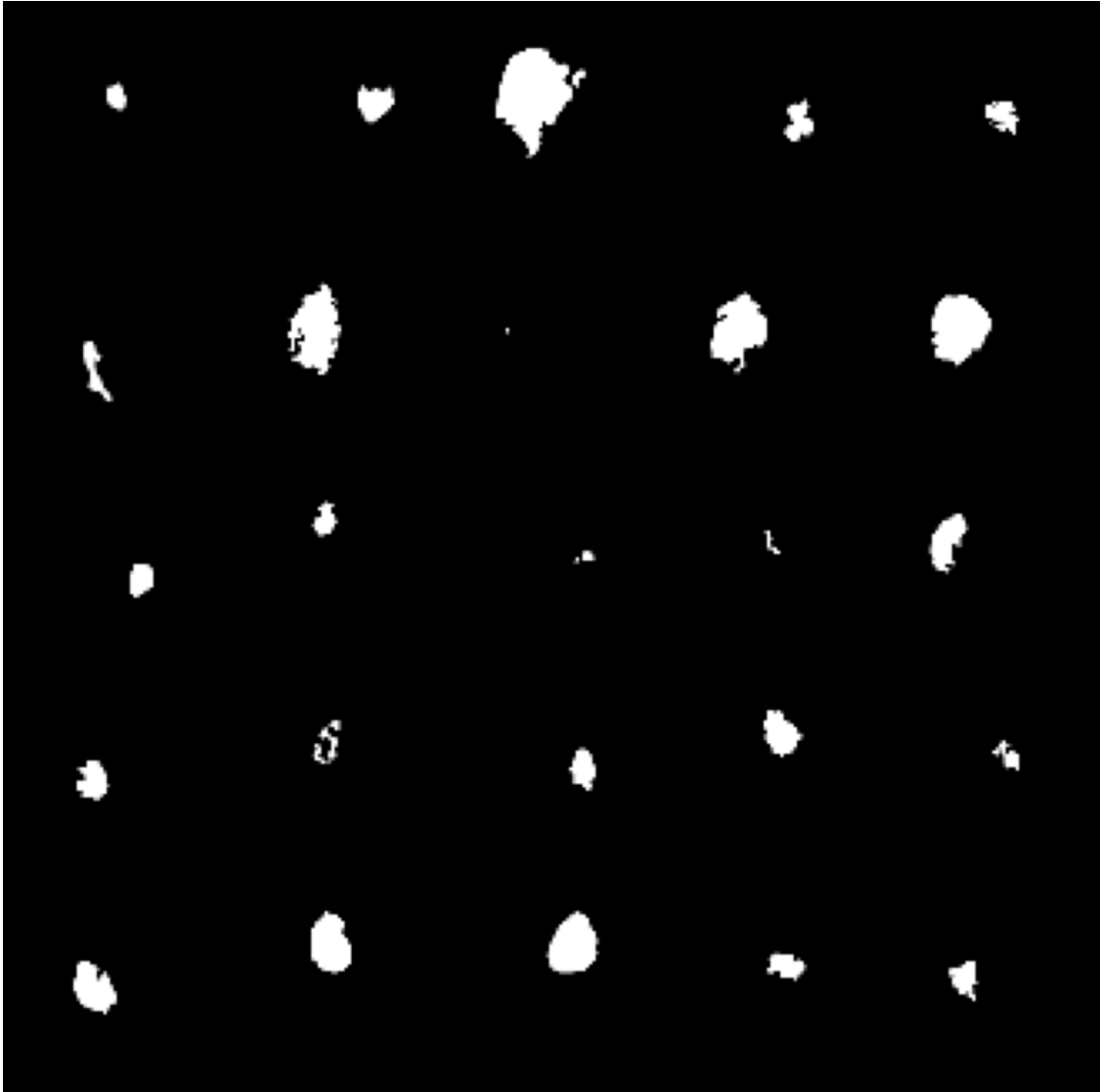
```
from scripts.gan import SimpleGAN

# Instantiate and train the GAN
gan = SimpleGAN(img_size=IMG_SIZE)
```

```
Metal device set to: Apple M1 Pro
Model: "Discriminator"

_____
 Layer (type)              Output Shape              Param #
=================================================================
 Discriminator-Hidden-Layer-  (None, 32, 32, 64)        3136
 1 (Conv2D)
```

```
Discriminator-Hidden-Layer-     (None, 32, 32, 64)        0
Activation-1 (LeakyReLU)

Discriminator-Hidden-Layer-     (None, 16, 16, 128)       131200
2 (Conv2D)

Discriminator-Hidden-Layer-     (None, 16, 16, 128)       0
Activation-2 (LeakyReLU)

Discriminator-Hidden-Layer-     (None, 8, 8, 256)         524544
3 (Conv2D)

Discriminator-Hidden-Layer-     (None, 8, 8, 256)         0
Activation-3 (LeakyReLU)

Discriminator-Flatten-Layer     (None, 16384)             0
 (Flatten)

Discriminator-Flatten-Layer     (None, 16384)             0
-Dropout (Dropout)

Discriminator-Output-Layer      (None, 1)                 16385
(Dense)

=================================================================
Total params: 675,265
Trainable params: 0
Non-trainable params: 675,265

_____
Model: "Generator"

_____
 Layer (type)                Output Shape              Param #
=================================================================
 Generator-Hidden-Layer-1 (D  (None, 8192)             827392
 ense)

 Generator-Hidden-Layer-Resh  (None, 8, 8, 128)        0
 ape-1 (Reshape)

 Generator-Hidden-Layer-2 (C  (None, 16, 16, 128)      262272
 onv2DTranspose)

 Generator-Hidden-Layer-Acti  (None, 16, 16, 128)      0
 vation-2 (ReLU)

 Generator-Hidden-Layer-3 (C  (None, 32, 32, 256)      524544
 onv2DTranspose)
```

```
Generator-Hidden-Layer-Acti   (None, 32, 32, 256)       0
vation-3 (ReLU)

Generator-Hidden-Layer-4 (C   (None, 64, 64, 512)       2097664
onv2DTranspose)

Generator-Hidden-Layer-Acti   (None, 64, 64, 512)       0
vation-4 (ReLU)

Generator-Output-Layer (Con   (None, 64, 64, 3)         38403
v2D)

=================================================================
Total params: 3,750,275
Trainable params: 3,750,275
Non-trainable params: 0

_____
```

[18]: `gan.train(images, epochs=5000, batch_size=128)`

```
tensor(-1.)
tensor(0.6980)
1/4 [======>…] - ETA: 0s

2023-09-05 01:14:41.018528: W
tensorflow/tsl/platform/profile_utils/cpu_utils.cc:128] Failed to get CPU
frequency: 0 Hz

4/4 [==============================] - 1s 242ms/step
0/5000 [D loss: 0.6838, acc.: 35.94%] [G loss: 0.6919]
WARNING:tensorflow:Compiled the loaded model, but the compiled metrics have yet
to be built. `model.compile_metrics` will be empty until you train or evaluate
the model.
Models and loss histories saved.
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 242ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 241ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
100/5000 [D loss: 0.6199, acc.: 63.28%] [G loss: 1.0117]
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 263ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 266ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 267ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
200/5000 [D loss: 0.7171, acc.: 44.53%] [G loss: 0.6525]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 263ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
300/5000 [D loss: 0.6426, acc.: 50.00%] [G loss: 0.6940]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
400/5000 [D loss: 0.6230, acc.: 48.83%] [G loss: 0.8689]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 247ms/step
500/5000 [D loss: 0.6857, acc.: 36.33%] [G loss: 1.1184]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
600/5000 [D loss: 0.4199, acc.: 91.41%] [G loss: 1.6324]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 242ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
700/5000 [D loss: 0.3958, acc.: 85.16%] [G loss: 1.7069]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 265ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
800/5000 [D loss: 0.2530, acc.: 97.66%] [G loss: 2.6723]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [=============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [=============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
900/5000 [D loss: 0.3409, acc.: 89.45%] [G loss: 2.8724]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 265ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
1000/5000 [D loss: 0.3279, acc.: 96.09%] [G loss: 2.9459]
WARNING:tensorflow:Compiled the loaded model, but the compiled metrics have yet
to be built. `model.compile_metrics` will be empty until you train or evaluate
the model.
Models and loss histories saved.
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 242ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 263ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
1100/5000 [D loss: 0.2569, acc.: 89.84%] [G loss: 4.3864]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
```

```
1200/5000 [D loss: 0.1404, acc.: 98.05%] [G loss: 2.8005]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 242ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
1300/5000 [D loss: 0.1436, acc.: 95.31%] [G loss: 2.9697]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [============================] - 1s 245ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
1400/5000 [D loss: 2.5861, acc.: 7.81%] [G loss: 1.5071]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 265ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 265ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 242ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 264ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
1500/5000 [D loss: 0.1618, acc.: 94.14%] [G loss: 3.4377]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
1600/5000 [D loss: 0.0700, acc.: 98.83%] [G loss: 3.9009]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
1700/5000 [D loss: 0.1004, acc.: 96.88%] [G loss: 3.7667]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
1800/5000 [D loss: 0.0844, acc.: 96.88%] [G loss: 4.0164]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
1900/5000 [D loss: 0.0984, acc.: 98.83%] [G loss: 3.3164]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 266ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
2000/5000 [D loss: 0.1383, acc.: 94.14%] [G loss: 3.3282]
WARNING:tensorflow:Compiled the loaded model, but the compiled metrics have yet
to be built. `model.compile_metrics` will be empty until you train or evaluate
the model.
Models and loss histories saved.
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
2100/5000 [D loss: 0.1264, acc.: 96.88%] [G loss: 4.1862]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
2200/5000 [D loss: 0.0988, acc.: 95.70%] [G loss: 4.1003]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
2300/5000 [D loss: 0.1995, acc.: 96.09%] [G loss: 4.6510]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
2400/5000 [D loss: 0.0965, acc.: 98.05%] [G loss: 4.2656]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
2500/5000 [D loss: 0.1264, acc.: 97.27%] [G loss: 4.3803]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 271ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
2600/5000 [D loss: 0.1143, acc.: 97.66%] [G loss: 3.7786]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 265ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 242ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
2700/5000 [D loss: 0.1406, acc.: 96.88%] [G loss: 3.8371]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 266ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 263ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
2800/5000 [D loss: 0.0610, acc.: 98.83%] [G loss: 4.0796]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 264ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
2900/5000 [D loss: 0.1110, acc.: 97.66%] [G loss: 3.8128]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 264ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 264ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
3000/5000 [D loss: 0.1694, acc.: 96.88%] [G loss: 3.7277]
WARNING:tensorflow:Compiled the loaded model, but the compiled metrics have yet
```

```
to be built. `model.compile_metrics` will be empty until you train or evaluate
the model.
Models and loss histories saved.
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 263ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
3100/5000 [D loss: 0.1090, acc.: 97.66%] [G loss: 3.8716]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
3200/5000 [D loss: 0.1596, acc.: 96.48%] [G loss: 3.5976]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 244ms/step
3300/5000 [D loss: 0.1866, acc.: 96.48%] [G loss: 3.9101]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 263ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 263ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
3400/5000 [D loss: 0.0616, acc.: 98.83%] [G loss: 4.2730]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
3500/5000 [D loss: 0.0657, acc.: 98.44%] [G loss: 4.1654]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
3600/5000 [D loss: 0.0733, acc.: 98.44%] [G loss: 4.2410]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
3700/5000 [D loss: 0.0737, acc.: 98.44%] [G loss: 4.1949]
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
3800/5000 [D loss: 0.0981, acc.: 98.05%] [G loss: 3.7794]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
3900/5000 [D loss: 0.0557, acc.: 98.83%] [G loss: 4.0827]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
4000/5000 [D loss: 0.0593, acc.: 98.83%] [G loss: 3.9662]
WARNING:tensorflow:Compiled the loaded model, but the compiled metrics have yet
to be built. `model.compile_metrics` will be empty until you train or evaluate
the model.
Models and loss histories saved.
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
4100/5000 [D loss: 0.1251, acc.: 97.27%] [G loss: 3.4600]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
4200/5000 [D loss: 0.1455, acc.: 96.88%] [G loss: 3.4808]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 267ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 266ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 262ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
4300/5000 [D loss: 0.1433, acc.: 96.88%] [G loss: 3.5852]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
4400/5000 [D loss: 0.0895, acc.: 98.05%] [G loss: 3.7571]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 252ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
4500/5000 [D loss: 0.0742, acc.: 98.44%] [G loss: 4.0061]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 265ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
4600/5000 [D loss: 0.0580, acc.: 98.83%] [G loss: 4.1264]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
4700/5000 [D loss: 0.0737, acc.: 98.44%] [G loss: 3.9778]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 259ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 242ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 263ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 261ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 242ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
```

```
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6922)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
```

```
4800/5000 [D loss: 0.0571, acc.: 98.83%] [G loss: 3.9327]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 250ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 247ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 263ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 242ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
```

```
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
4900/5000 [D loss: 0.0466, acc.: 99.22%] [G loss: 3.9790]
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 264ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 251ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 249ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 248ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 258ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 256ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 260ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 255ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 253ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 257ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 244ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 245ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
```

```
tensor(0.6980)
4/4 [==============================] - 1s 265ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 254ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 252ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 243ms/step
tensor(-1.)
tensor(0.6980)
4/4 [==============================] - 1s 246ms/step
WARNING:tensorflow:Compiled the loaded model, but the compiled metrics have yet
to be built. `model.compile_metrics` will be empty until you train or evaluate
the model.
Models and loss histories saved.
```

[19]:
```python
# Generate synthetic images
num_images = 16
generated_images = gan.generate_images(num_images)
```

```
1/1 [==============================] - 0s 135ms/step
```

[20]:
```python
def display_images(images):
    fig, axs = plt.subplots(4,4)
    count = 0
    for i in range(4):
        for j in range(4):
            axs[i, j].imshow((images[count] * 0.5) + 0.5)
            axs[i, j].axis('off')
            count += 1
    plt.show()
```

[21]:
```python
# Display a few samples from the dataset
```

```
[22]:  # Display the generated images
       display_images(generated_images)
```
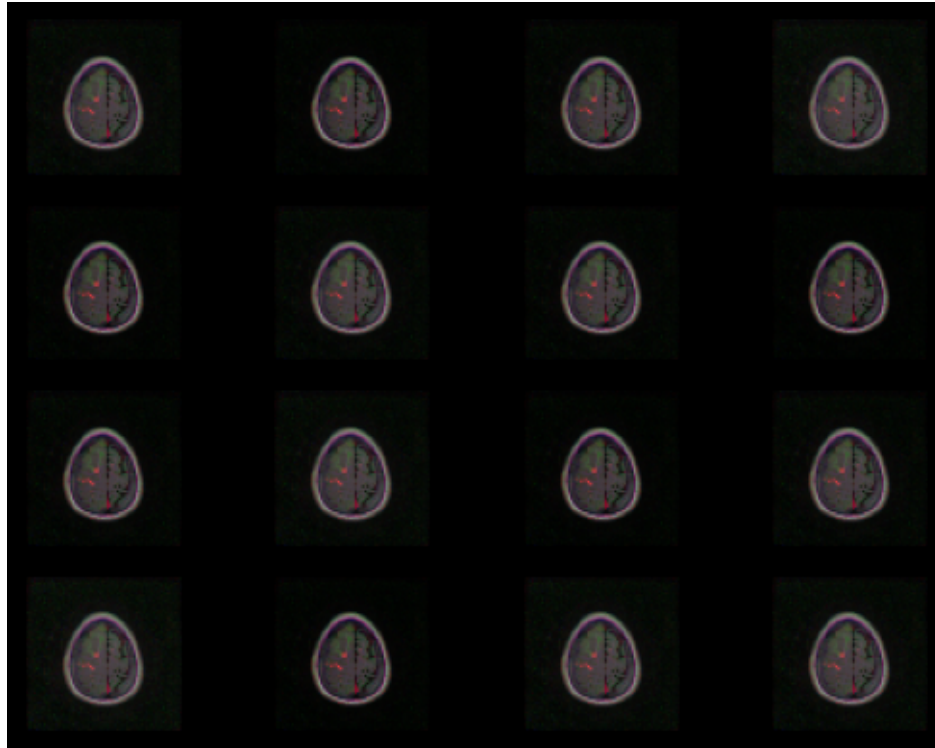


```
[23]:  print(generated_images.shape)
```

```
(16, 64, 64, 3)
```

```
[24]:  test_images, test_masks, test_labels = next(iter(test_dataloader))
```

1 Model evaluation

```
[25]:  gan.plot_real_vs_fake(test_images, 1000, 4)
```
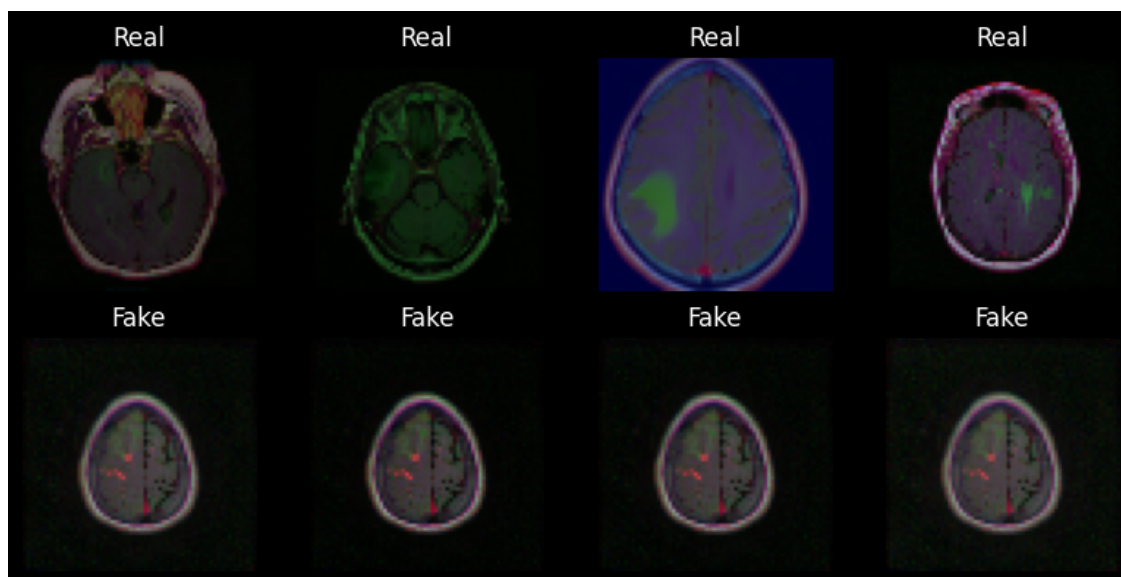
```
[26]: gan.plot_real_vs_fake(test_images, 1000, 6)
```



```
[27]: gan.plot_losses()
```
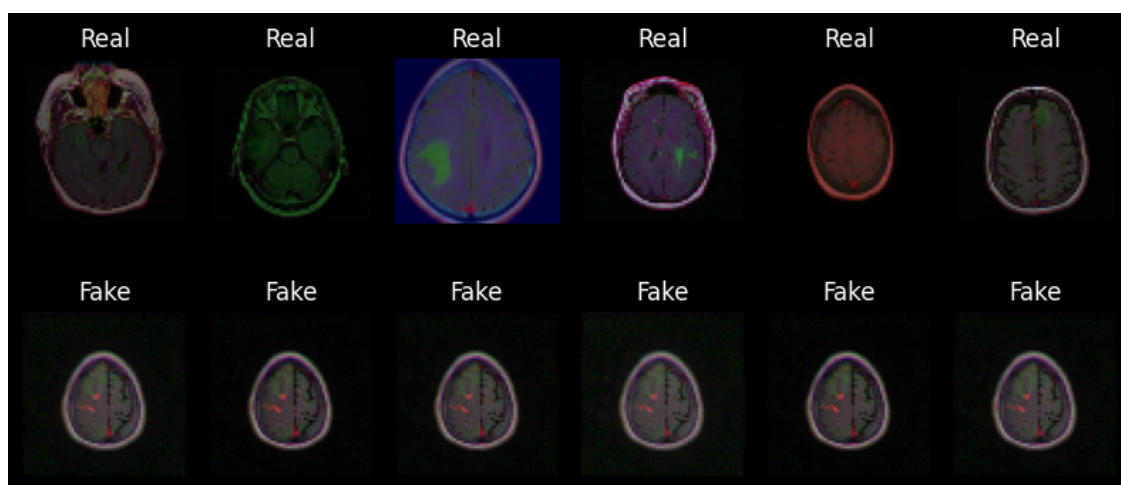
GAN Training Losses
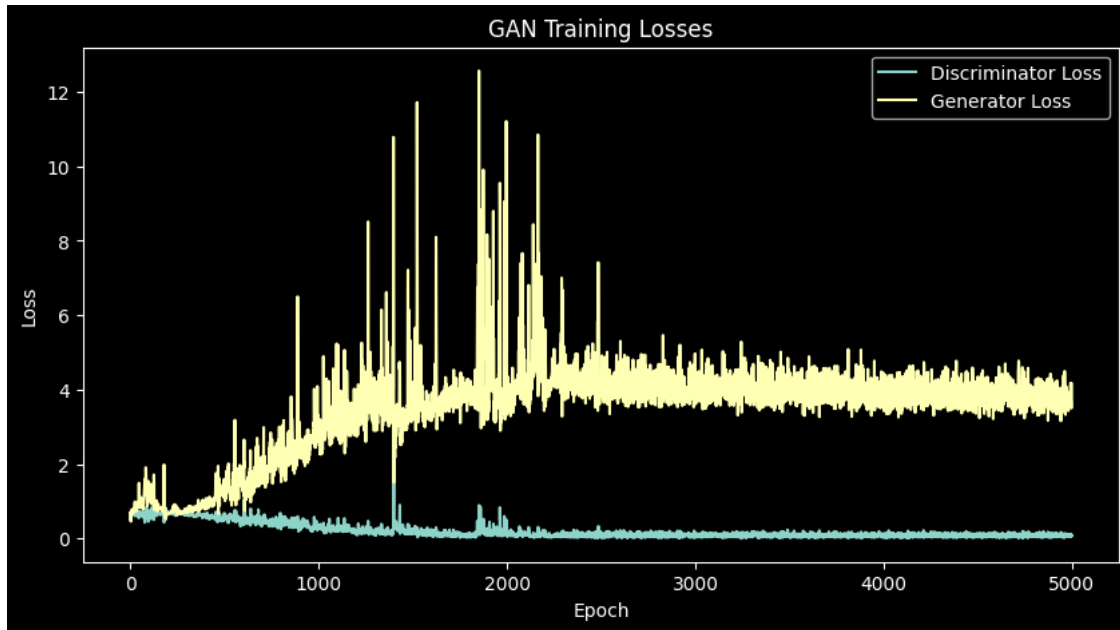
2 Brain Cancer Classifier

The fundamental idea underlying this classifier involves a two-step training process. Initially, the model is trained using authentic data, followed by a subsequent training round where both authentic and synthetic data are used. This approach aims to assess whether the classifier's performance exhibits improvement after incorporating synthetic data alongside genuine data.

```
[28]: from scripts.brain_cancer_classifier import BrainCancerClassifier
```

```
[29]: classifier = BrainCancerClassifier()
```

Based on real images

```
[30]: all_data = df
```

```
[31]: # Split df into train_df and val_df
      all_train_df, all_val_df = train_test_split(all_data, stratify=all_data.label,␣
       ↪test_size=0.1)
      all_train_df = all_train_df.reset_index(drop=True)
      all_val_df = all_val_df.reset_index(drop=True)

      # Split train_df into train_df and test_df
      all_val_df, all_test_df = train_test_split(all_val_df, stratify=all_val_df.
       ↪label, test_size=0.3)
      all_val_df = all_val_df.reset_index(drop=True)
      all_test_df = all_test_df.reset_index(drop=True)
```

```
print(f"Train: {all_train_df.shape} \nVal: {all_val_df.shape} \nTest:␣
  ↪{all_test_df.shape}")
```

```
Train: (3536, 3)
Val: (275, 3)
Test: (118, 3)
```

[32]:
```
IMG_SIZE = 64
BATCH_SIZE = 26

# train
all_train_dataset = BrainMriDataset(df=all_train_df, img_size=IMG_SIZE)
all_train_dataloader = DataLoader(all_train_dataset, batch_size=BATCH_SIZE,␣
  ↪num_workers=4, shuffle=True)

# val
all_val_dataset = BrainMriDataset(df=all_val_df, img_size=IMG_SIZE)
all_val_dataloader = DataLoader(all_val_dataset, batch_size=BATCH_SIZE,␣
  ↪num_workers=4, shuffle=True)

#test
all_test_dataset = BrainMriDataset(df=all_test_df, img_size=IMG_SIZE)
all_test_dataloader = DataLoader(all_test_dataset, batch_size=BATCH_SIZE,␣
  ↪num_workers=4, shuffle=True)
```

[33]:
```
all_train_images, all_train_masks, all_train_labels =␣
  ↪next(iter(all_train_dataloader))
```

[34]:
```
all_val_images, all_val_masks, all_val_labels = next(iter(all_val_dataloader))
```

[35]:
```
classifier.train(all_train_images, all_train_labels, all_val_images,␣
  ↪all_val_labels)
```

```
Epoch 1/1000
1/1 [==============================] - 1s 594ms/step - loss: 0.6776 - accuracy:
0.6154 - val_loss: 0.6893 - val_accuracy: 0.5000
Epoch 2/1000
1/1 [==============================] - 0s 89ms/step - loss: 0.6569 - accuracy:
0.6154 - val_loss: 0.6841 - val_accuracy: 0.5000
Epoch 3/1000
1/1 [==============================] - 0s 73ms/step - loss: 0.6831 - accuracy:
0.6923 - val_loss: 0.6681 - val_accuracy: 0.5385
Epoch 4/1000
1/1 [==============================] - 0s 70ms/step - loss: 0.6317 - accuracy:
0.5385 - val_loss: 0.6628 - val_accuracy: 0.5000
Epoch 5/1000
```

```
1/1 [==============================] - 0s 68ms/step - loss: 0.7190 - accuracy:
0.5000 - val_loss: 0.6572 - val_accuracy: 0.5000
Epoch 6/1000
1/1 [==============================] - 0s 63ms/step - loss: 0.5861 - accuracy:
0.7692 - val_loss: 0.6436 - val_accuracy: 0.7692
Epoch 7/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.6888 - accuracy:
0.5769 - val_loss: 0.6436 - val_accuracy: 0.6923
Epoch 8/1000
1/1 [==============================] - 0s 65ms/step - loss: 0.6689 - accuracy:
0.6538 - val_loss: 0.6334 - val_accuracy: 0.7308
Epoch 9/1000
1/1 [==============================] - 0s 63ms/step - loss: 0.6114 - accuracy:
0.6923 - val_loss: 0.6226 - val_accuracy: 0.7308
Epoch 10/1000
1/1 [==============================] - 0s 67ms/step - loss: 0.6154 - accuracy:
0.5769 - val_loss: 0.6093 - val_accuracy: 0.7692
Epoch 11/1000
1/1 [==============================] - 0s 71ms/step - loss: 0.5885 - accuracy:
0.7308 - val_loss: 0.6001 - val_accuracy: 0.7308
Epoch 12/1000
1/1 [==============================] - 0s 70ms/step - loss: 0.5083 - accuracy:
0.8846 - val_loss: 0.5888 - val_accuracy: 0.7692
Epoch 13/1000
1/1 [==============================] - 0s 65ms/step - loss: 0.5051 - accuracy:
0.8462 - val_loss: 0.5704 - val_accuracy: 0.8077
Epoch 14/1000
1/1 [==============================] - 0s 63ms/step - loss: 0.5043 - accuracy:
0.8077 - val_loss: 0.5436 - val_accuracy: 0.6923
Epoch 15/1000
1/1 [==============================] - 0s 66ms/step - loss: 0.4436 - accuracy:
0.8462 - val_loss: 0.5243 - val_accuracy: 0.7692
Epoch 16/1000
1/1 [==============================] - 0s 65ms/step - loss: 0.4635 - accuracy:
0.8462 - val_loss: 0.5139 - val_accuracy: 0.7692
Epoch 17/1000
1/1 [==============================] - 0s 71ms/step - loss: 0.3752 - accuracy:
0.8077 - val_loss: 0.4966 - val_accuracy: 0.7692
Epoch 18/1000
1/1 [==============================] - 0s 66ms/step - loss: 0.3884 - accuracy:
0.8462 - val_loss: 0.4812 - val_accuracy: 0.7692
Epoch 19/1000
1/1 [==============================] - 0s 65ms/step - loss: 0.3140 - accuracy:
0.8846 - val_loss: 0.4685 - val_accuracy: 0.8077
Epoch 20/1000
1/1 [==============================] - 0s 68ms/step - loss: 0.2759 - accuracy:
0.8846 - val_loss: 0.4621 - val_accuracy: 0.7308
Epoch 21/1000
```

```
1/1 [==============================] - 0s 69ms/step - loss: 0.4125 - accuracy:
0.8077 - val_loss: 0.4617 - val_accuracy: 0.7692
Epoch 22/1000
1/1 [==============================] - 0s 61ms/step - loss: 0.2970 - accuracy:
0.8077 - val_loss: 0.4356 - val_accuracy: 0.7308
Epoch 23/1000
1/1 [==============================] - 0s 40ms/step - loss: 0.1936 - accuracy:
1.0000 - val_loss: 0.4572 - val_accuracy: 0.8077
Epoch 24/1000
1/1 [==============================] - 0s 60ms/step - loss: 0.3093 - accuracy:
0.8462 - val_loss: 0.4212 - val_accuracy: 0.7308
Epoch 25/1000
1/1 [==============================] - 0s 42ms/step - loss: 0.2293 - accuracy:
0.8846 - val_loss: 0.4256 - val_accuracy: 0.7692
Epoch 26/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.1605 - accuracy:
1.0000 - val_loss: 0.4409 - val_accuracy: 0.7692
Epoch 27/1000
1/1 [==============================] - 0s 41ms/step - loss: 0.1590 - accuracy:
0.9615 - val_loss: 0.5216 - val_accuracy: 0.7692
Epoch 28/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.2235 - accuracy:
0.9231 - val_loss: 0.4364 - val_accuracy: 0.7308
Epoch 29/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.2000 - accuracy:
0.9231 - val_loss: 0.4545 - val_accuracy: 0.6923
Epoch 30/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.2052 - accuracy:
0.9231 - val_loss: 0.4448 - val_accuracy: 0.7692
Epoch 31/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.1190 - accuracy:
1.0000 - val_loss: 0.4964 - val_accuracy: 0.7692
Epoch 32/1000
1/1 [==============================] - 0s 39ms/step - loss: 0.1436 - accuracy:
0.9231 - val_loss: 0.5190 - val_accuracy: 0.7692
Epoch 33/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.0943 - accuracy:
1.0000 - val_loss: 0.4853 - val_accuracy: 0.7692
Epoch 34/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0981 - accuracy:
1.0000 - val_loss: 0.4638 - val_accuracy: 0.7692
Epoch 35/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.0940 - accuracy:
1.0000 - val_loss: 0.4641 - val_accuracy: 0.7692
Epoch 36/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0699 - accuracy:
1.0000 - val_loss: 0.4899 - val_accuracy: 0.7692
Epoch 37/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 0.0650 - accuracy:
1.0000 - val_loss: 0.5441 - val_accuracy: 0.7692
Epoch 38/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0535 - accuracy:
1.0000 - val_loss: 0.5893 - val_accuracy: 0.7692
Epoch 39/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0596 - accuracy:
1.0000 - val_loss: 0.5938 - val_accuracy: 0.7692
Epoch 40/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0371 - accuracy:
1.0000 - val_loss: 0.6079 - val_accuracy: 0.7692
Epoch 41/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0568 - accuracy:
0.9615 - val_loss: 0.5564 - val_accuracy: 0.7692
Epoch 42/1000
1/1 [==============================] - 0s 39ms/step - loss: 0.0458 - accuracy:
1.0000 - val_loss: 0.5700 - val_accuracy: 0.7692
Epoch 43/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.0288 - accuracy:
1.0000 - val_loss: 0.6359 - val_accuracy: 0.7692
Epoch 44/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0191 - accuracy:
1.0000 - val_loss: 0.7169 - val_accuracy: 0.8077
Epoch 45/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0117 - accuracy:
1.0000 - val_loss: 0.8043 - val_accuracy: 0.8077
Epoch 46/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0207 - accuracy:
1.0000 - val_loss: 0.8418 - val_accuracy: 0.8077
Epoch 47/1000
1/1 [==============================] - 0s 41ms/step - loss: 0.0209 - accuracy:
1.0000 - val_loss: 0.8089 - val_accuracy: 0.8077
Epoch 48/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.0132 - accuracy:
1.0000 - val_loss: 0.7693 - val_accuracy: 0.7692
Epoch 49/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0107 - accuracy:
1.0000 - val_loss: 0.7350 - val_accuracy: 0.7692
Epoch 50/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.0052 - accuracy:
1.0000 - val_loss: 0.7192 - val_accuracy: 0.7692
Epoch 51/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0050 - accuracy:
1.0000 - val_loss: 0.7244 - val_accuracy: 0.7692
Epoch 52/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0086 - accuracy:
1.0000 - val_loss: 0.7855 - val_accuracy: 0.7692
Epoch 53/1000
```

```
1/1 [==============================] - 0s 39ms/step - loss: 0.0078 - accuracy:
1.0000 - val_loss: 0.8942 - val_accuracy: 0.7692
Epoch 54/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.0038 - accuracy:
1.0000 - val_loss: 0.9959 - val_accuracy: 0.7692
Epoch 55/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0032 - accuracy:
1.0000 - val_loss: 1.0679 - val_accuracy: 0.7692
Epoch 56/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0013 - accuracy:
1.0000 - val_loss: 1.1327 - val_accuracy: 0.7692
Epoch 57/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0049 - accuracy:
1.0000 - val_loss: 1.1696 - val_accuracy: 0.7692
Epoch 58/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0012 - accuracy:
1.0000 - val_loss: 1.1988 - val_accuracy: 0.7692
Epoch 59/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0023 - accuracy:
1.0000 - val_loss: 1.2103 - val_accuracy: 0.7692
Epoch 60/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0015 - accuracy:
1.0000 - val_loss: 1.2178 - val_accuracy: 0.7692
Epoch 61/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.0032 - accuracy:
1.0000 - val_loss: 1.1887 - val_accuracy: 0.7692
Epoch 62/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0016 - accuracy:
1.0000 - val_loss: 1.1758 - val_accuracy: 0.7692
Epoch 63/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.0040 - accuracy:
1.0000 - val_loss: 1.1930 - val_accuracy: 0.7692
Epoch 64/1000
1/1 [==============================] - 0s 41ms/step - loss: 0.0019 - accuracy:
1.0000 - val_loss: 1.2225 - val_accuracy: 0.7692
Epoch 65/1000
1/1 [==============================] - 0s 30ms/step - loss: 0.0028 - accuracy:
1.0000 - val_loss: 1.2772 - val_accuracy: 0.7692
Epoch 66/1000
1/1 [==============================] - 0s 33ms/step - loss: 9.5855e-04 -
accuracy: 1.0000 - val_loss: 1.3251 - val_accuracy: 0.7692
Epoch 67/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0013 - accuracy:
1.0000 - val_loss: 1.3794 - val_accuracy: 0.8077
Epoch 68/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.2092e-04 -
accuracy: 1.0000 - val_loss: 1.4271 - val_accuracy: 0.8077
Epoch 69/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 6.4770e-04 -
accuracy: 1.0000 - val_loss: 1.4635 - val_accuracy: 0.8077
Epoch 70/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0025 - accuracy:
1.0000 - val_loss: 1.5061 - val_accuracy: 0.8077
Epoch 71/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.0033 - accuracy:
1.0000 - val_loss: 1.4869 - val_accuracy: 0.8077
Epoch 72/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0012 - accuracy:
1.0000 - val_loss: 1.4789 - val_accuracy: 0.8077
Epoch 73/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.4648e-04 -
accuracy: 1.0000 - val_loss: 1.4697 - val_accuracy: 0.8077
Epoch 74/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.6984e-04 -
accuracy: 1.0000 - val_loss: 1.4490 - val_accuracy: 0.8077
Epoch 75/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.3205e-04 -
accuracy: 1.0000 - val_loss: 1.4336 - val_accuracy: 0.8077
Epoch 76/1000
1/1 [==============================] - 0s 31ms/step - loss: 9.8028e-04 -
accuracy: 1.0000 - val_loss: 1.4281 - val_accuracy: 0.8077
Epoch 77/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.4397e-04 -
accuracy: 1.0000 - val_loss: 1.4237 - val_accuracy: 0.8077
Epoch 78/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0013 - accuracy:
1.0000 - val_loss: 1.4308 - val_accuracy: 0.8077
Epoch 79/1000
1/1 [==============================] - 0s 32ms/step - loss: 8.3039e-04 -
accuracy: 1.0000 - val_loss: 1.4360 - val_accuracy: 0.8077
Epoch 80/1000
1/1 [==============================] - 0s 39ms/step - loss: 7.4596e-04 -
accuracy: 1.0000 - val_loss: 1.4509 - val_accuracy: 0.8077
Epoch 81/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.1178e-04 -
accuracy: 1.0000 - val_loss: 1.4576 - val_accuracy: 0.8077
Epoch 82/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.7095e-04 -
accuracy: 1.0000 - val_loss: 1.4615 - val_accuracy: 0.8077
Epoch 83/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.8758e-04 -
accuracy: 1.0000 - val_loss: 1.4645 - val_accuracy: 0.8077
Epoch 84/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.3464e-04 -
accuracy: 1.0000 - val_loss: 1.4743 - val_accuracy: 0.8077
Epoch 85/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 6.0207e-04 -
accuracy: 1.0000 - val_loss: 1.4699 - val_accuracy: 0.8077
Epoch 86/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.3740e-04 -
accuracy: 1.0000 - val_loss: 1.4686 - val_accuracy: 0.8077
Epoch 87/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.4320e-04 -
accuracy: 1.0000 - val_loss: 1.4680 - val_accuracy: 0.8077
Epoch 88/1000
1/1 [==============================] - 0s 31ms/step - loss: 5.1126e-04 -
accuracy: 1.0000 - val_loss: 1.4602 - val_accuracy: 0.8077
Epoch 89/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.8680e-04 -
accuracy: 1.0000 - val_loss: 1.4508 - val_accuracy: 0.8077
Epoch 90/1000
1/1 [==============================] - 0s 38ms/step - loss: 2.8810e-04 -
accuracy: 1.0000 - val_loss: 1.4465 - val_accuracy: 0.8077
Epoch 91/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.4465e-04 -
accuracy: 1.0000 - val_loss: 1.4471 - val_accuracy: 0.8077
Epoch 92/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.4214e-04 -
accuracy: 1.0000 - val_loss: 1.4535 - val_accuracy: 0.8077
Epoch 93/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.0295e-04 -
accuracy: 1.0000 - val_loss: 1.4593 - val_accuracy: 0.8077
Epoch 94/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.3894e-04 -
accuracy: 1.0000 - val_loss: 1.4605 - val_accuracy: 0.8077
Epoch 95/1000
1/1 [==============================] - 0s 51ms/step - loss: 3.1784e-04 -
accuracy: 1.0000 - val_loss: 1.4612 - val_accuracy: 0.8077
Epoch 96/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.3494e-04 -
accuracy: 1.0000 - val_loss: 1.4689 - val_accuracy: 0.8077
Epoch 97/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.7710e-04 -
accuracy: 1.0000 - val_loss: 1.4696 - val_accuracy: 0.8077
Epoch 98/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.8037e-04 -
accuracy: 1.0000 - val_loss: 1.4703 - val_accuracy: 0.8077
Epoch 99/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.4945e-04 -
accuracy: 1.0000 - val_loss: 1.4704 - val_accuracy: 0.8077
Epoch 100/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.8839e-04 -
accuracy: 1.0000 - val_loss: 1.4603 - val_accuracy: 0.8077
Epoch 101/1000
```

```
1/1 [==============================] - 0s 30ms/step - loss: 2.2712e-04 -
accuracy: 1.0000 - val_loss: 1.4514 - val_accuracy: 0.8077
Epoch 102/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.7477e-04 -
accuracy: 1.0000 - val_loss: 1.4446 - val_accuracy: 0.8077
Epoch 103/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.3832e-04 -
accuracy: 1.0000 - val_loss: 1.4423 - val_accuracy: 0.8077
Epoch 104/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.1203e-04 -
accuracy: 1.0000 - val_loss: 1.4433 - val_accuracy: 0.8077
Epoch 105/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.6300e-04 -
accuracy: 1.0000 - val_loss: 1.4444 - val_accuracy: 0.8077
Epoch 106/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.4007e-04 -
accuracy: 1.0000 - val_loss: 1.4492 - val_accuracy: 0.8077
Epoch 107/1000
1/1 [==============================] - 0s 30ms/step - loss: 4.2838e-04 -
accuracy: 1.0000 - val_loss: 1.4600 - val_accuracy: 0.8077
Epoch 108/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.2287e-04 -
accuracy: 1.0000 - val_loss: 1.4713 - val_accuracy: 0.8077
Epoch 109/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.2223e-04 -
accuracy: 1.0000 - val_loss: 1.4793 - val_accuracy: 0.8077
Epoch 110/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.9209e-04 -
accuracy: 1.0000 - val_loss: 1.4915 - val_accuracy: 0.8077
Epoch 111/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.9671e-04 -
accuracy: 1.0000 - val_loss: 1.5076 - val_accuracy: 0.8077
Epoch 112/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.2941e-04 -
accuracy: 1.0000 - val_loss: 1.5207 - val_accuracy: 0.8077
Epoch 113/1000
1/1 [==============================] - 0s 30ms/step - loss: 4.7852e-04 -
accuracy: 1.0000 - val_loss: 1.5382 - val_accuracy: 0.8077
Epoch 114/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.4646e-04 -
accuracy: 1.0000 - val_loss: 1.5552 - val_accuracy: 0.8077
Epoch 115/1000
1/1 [==============================] - 0s 29ms/step - loss: 4.4378e-04 -
accuracy: 1.0000 - val_loss: 1.5752 - val_accuracy: 0.8077
Epoch 116/1000
1/1 [==============================] - 0s 31ms/step - loss: 9.5736e-05 -
accuracy: 1.0000 - val_loss: 1.5927 - val_accuracy: 0.8077
Epoch 117/1000
```

```
1/1 [==============================] - 0s 32ms/step - loss: 1.1912e-04 -
accuracy: 1.0000 - val_loss: 1.6081 - val_accuracy: 0.8077
Epoch 118/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.0781e-04 -
accuracy: 1.0000 - val_loss: 1.6198 - val_accuracy: 0.8077
Epoch 119/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.3953e-04 -
accuracy: 1.0000 - val_loss: 1.6317 - val_accuracy: 0.8077
Epoch 120/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.8226e-04 -
accuracy: 1.0000 - val_loss: 1.6379 - val_accuracy: 0.8077
Epoch 121/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.5981e-05 -
accuracy: 1.0000 - val_loss: 1.6445 - val_accuracy: 0.8077
Epoch 122/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.9915e-04 -
accuracy: 1.0000 - val_loss: 1.6465 - val_accuracy: 0.8077
Epoch 123/1000
1/1 [==============================] - 0s 28ms/step - loss: 2.5807e-04 -
accuracy: 1.0000 - val_loss: 1.6378 - val_accuracy: 0.8077
Epoch 124/1000
1/1 [==============================] - 0s 30ms/step - loss: 9.3422e-05 -
accuracy: 1.0000 - val_loss: 1.6300 - val_accuracy: 0.8077
Epoch 125/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.5714e-04 -
accuracy: 1.0000 - val_loss: 1.6303 - val_accuracy: 0.8077
Epoch 126/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.2139e-04 -
accuracy: 1.0000 - val_loss: 1.6342 - val_accuracy: 0.8077
Epoch 127/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.9133e-04 -
accuracy: 1.0000 - val_loss: 1.6390 - val_accuracy: 0.8077
Epoch 128/1000
1/1 [==============================] - 0s 28ms/step - loss: 1.8935e-04 -
accuracy: 1.0000 - val_loss: 1.6415 - val_accuracy: 0.8077
Epoch 129/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.3314e-04 -
accuracy: 1.0000 - val_loss: 1.6442 - val_accuracy: 0.8077
Epoch 130/1000
1/1 [==============================] - 0s 33ms/step - loss: 8.4695e-05 -
accuracy: 1.0000 - val_loss: 1.6469 - val_accuracy: 0.8077
Epoch 131/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.2454e-04 -
accuracy: 1.0000 - val_loss: 1.6416 - val_accuracy: 0.8077
Epoch 132/1000
1/1 [==============================] - 0s 28ms/step - loss: 1.8626e-04 -
accuracy: 1.0000 - val_loss: 1.6368 - val_accuracy: 0.8077
Epoch 133/1000
```

```
1/1 [==============================] - 0s 32ms/step - loss: 2.4148e-04 -
accuracy: 1.0000 - val_loss: 1.6349 - val_accuracy: 0.8077
Epoch 134/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.9992e-04 -
accuracy: 1.0000 - val_loss: 1.6261 - val_accuracy: 0.8077
Epoch 135/1000
1/1 [==============================] - 0s 29ms/step - loss: 3.9071e-04 -
accuracy: 1.0000 - val_loss: 1.6109 - val_accuracy: 0.8077
Epoch 136/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.8986e-04 -
accuracy: 1.0000 - val_loss: 1.5963 - val_accuracy: 0.8077
Epoch 137/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.5993e-04 -
accuracy: 1.0000 - val_loss: 1.5870 - val_accuracy: 0.8077
Epoch 138/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.5424e-04 -
accuracy: 1.0000 - val_loss: 1.5803 - val_accuracy: 0.8077
Epoch 139/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3663e-04 -
accuracy: 1.0000 - val_loss: 1.5751 - val_accuracy: 0.8077
Epoch 140/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.8292e-04 -
accuracy: 1.0000 - val_loss: 1.5706 - val_accuracy: 0.8077
Epoch 141/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.8456e-04 -
accuracy: 1.0000 - val_loss: 1.5705 - val_accuracy: 0.8077
Epoch 142/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.4808e-04 -
accuracy: 1.0000 - val_loss: 1.5698 - val_accuracy: 0.8077
Epoch 143/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.6809e-04 -
accuracy: 1.0000 - val_loss: 1.5717 - val_accuracy: 0.8077
Epoch 144/1000
1/1 [==============================] - 0s 29ms/step - loss: 2.1058e-04 -
accuracy: 1.0000 - val_loss: 1.5766 - val_accuracy: 0.8077
Epoch 145/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.6042e-04 -
accuracy: 1.0000 - val_loss: 1.5826 - val_accuracy: 0.8077
Epoch 146/1000
1/1 [==============================] - 0s 29ms/step - loss: 1.1268e-04 -
accuracy: 1.0000 - val_loss: 1.5919 - val_accuracy: 0.8077
Epoch 147/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.1437e-04 -
accuracy: 1.0000 - val_loss: 1.6024 - val_accuracy: 0.8077
Epoch 148/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.0964e-04 -
accuracy: 1.0000 - val_loss: 1.6137 - val_accuracy: 0.8077
Epoch 149/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 3.6006e-04 -
accuracy: 1.0000 - val_loss: 1.6226 - val_accuracy: 0.8077
Epoch 150/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.1503e-04 -
accuracy: 1.0000 - val_loss: 1.6310 - val_accuracy: 0.8077
Epoch 151/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.1178e-04 -
accuracy: 1.0000 - val_loss: 1.6343 - val_accuracy: 0.8077
Epoch 152/1000
1/1 [==============================] - 0s 28ms/step - loss: 1.6485e-04 -
accuracy: 1.0000 - val_loss: 1.6377 - val_accuracy: 0.8077
Epoch 153/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.5006e-04 -
accuracy: 1.0000 - val_loss: 1.6445 - val_accuracy: 0.8077
Epoch 154/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.2287e-04 -
accuracy: 1.0000 - val_loss: 1.6539 - val_accuracy: 0.8077
Epoch 155/1000
1/1 [==============================] - 0s 29ms/step - loss: 8.0033e-05 -
accuracy: 1.0000 - val_loss: 1.6637 - val_accuracy: 0.8077
Epoch 156/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.9470e-04 -
accuracy: 1.0000 - val_loss: 1.6758 - val_accuracy: 0.8077
Epoch 157/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.4550e-04 -
accuracy: 1.0000 - val_loss: 1.6824 - val_accuracy: 0.8077
Epoch 158/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.9670e-04 -
accuracy: 1.0000 - val_loss: 1.6888 - val_accuracy: 0.8077
Epoch 159/1000
1/1 [==============================] - 0s 36ms/step - loss: 9.4280e-05 -
accuracy: 1.0000 - val_loss: 1.6937 - val_accuracy: 0.8077
Epoch 160/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.1611e-04 -
accuracy: 1.0000 - val_loss: 1.6963 - val_accuracy: 0.8077
Epoch 161/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.5024e-04 -
accuracy: 1.0000 - val_loss: 1.6975 - val_accuracy: 0.8077
Epoch 162/1000
1/1 [==============================] - 0s 32ms/step - loss: 7.9061e-05 -
accuracy: 1.0000 - val_loss: 1.6988 - val_accuracy: 0.8077
Epoch 163/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.2269e-04 -
accuracy: 1.0000 - val_loss: 1.7004 - val_accuracy: 0.8077
Epoch 164/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.2622e-04 -
accuracy: 1.0000 - val_loss: 1.6993 - val_accuracy: 0.8077
Epoch 165/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 1.1663e-04 -
accuracy: 1.0000 - val_loss: 1.6958 - val_accuracy: 0.8077
Epoch 166/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.2388e-04 -
accuracy: 1.0000 - val_loss: 1.6881 - val_accuracy: 0.8077
Epoch 167/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.2726e-04 -
accuracy: 1.0000 - val_loss: 1.6832 - val_accuracy: 0.8077
Epoch 168/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.0861e-04 -
accuracy: 1.0000 - val_loss: 1.6824 - val_accuracy: 0.8077
Epoch 169/1000
1/1 [==============================] - 0s 36ms/step - loss: 8.7470e-05 -
accuracy: 1.0000 - val_loss: 1.6805 - val_accuracy: 0.8077
Epoch 170/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.5872e-04 -
accuracy: 1.0000 - val_loss: 1.6810 - val_accuracy: 0.8077
Epoch 171/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.0362e-04 -
accuracy: 1.0000 - val_loss: 1.6795 - val_accuracy: 0.8077
Epoch 172/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.8772e-04 -
accuracy: 1.0000 - val_loss: 1.6744 - val_accuracy: 0.8077
Epoch 173/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.5554e-04 -
accuracy: 1.0000 - val_loss: 1.6750 - val_accuracy: 0.8077
Epoch 174/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.3828e-04 -
accuracy: 1.0000 - val_loss: 1.6750 - val_accuracy: 0.8077
Epoch 175/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.8320e-04 -
accuracy: 1.0000 - val_loss: 1.6772 - val_accuracy: 0.8077
Epoch 176/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.1540e-04 -
accuracy: 1.0000 - val_loss: 1.6807 - val_accuracy: 0.8077
Epoch 177/1000
1/1 [==============================] - 0s 29ms/step - loss: 1.2706e-04 -
accuracy: 1.0000 - val_loss: 1.6880 - val_accuracy: 0.8077
Epoch 178/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.8911e-04 -
accuracy: 1.0000 - val_loss: 1.6987 - val_accuracy: 0.8077
Epoch 179/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.4746e-04 -
accuracy: 1.0000 - val_loss: 1.7113 - val_accuracy: 0.8077
Epoch 180/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.8451e-04 -
accuracy: 1.0000 - val_loss: 1.7246 - val_accuracy: 0.8077
Epoch 181/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 8.1597e-05 -
accuracy: 1.0000 - val_loss: 1.7359 - val_accuracy: 0.8077
Epoch 182/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3252e-04 -
accuracy: 1.0000 - val_loss: 1.7456 - val_accuracy: 0.8077
Epoch 183/1000
1/1 [==============================] - 0s 29ms/step - loss: 1.5830e-04 -
accuracy: 1.0000 - val_loss: 1.7513 - val_accuracy: 0.8077
Epoch 184/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.2406e-04 -
accuracy: 1.0000 - val_loss: 1.7572 - val_accuracy: 0.8077
Epoch 185/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.0734e-04 -
accuracy: 1.0000 - val_loss: 1.7592 - val_accuracy: 0.8077
Epoch 186/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.8154e-04 -
accuracy: 1.0000 - val_loss: 1.7573 - val_accuracy: 0.8077
Epoch 187/1000
1/1 [==============================] - 0s 28ms/step - loss: 1.2139e-04 -
accuracy: 1.0000 - val_loss: 1.7518 - val_accuracy: 0.8077
Epoch 188/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.6108e-04 -
accuracy: 1.0000 - val_loss: 1.7428 - val_accuracy: 0.8077
Epoch 189/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.8065e-05 -
accuracy: 1.0000 - val_loss: 1.7350 - val_accuracy: 0.8077
Epoch 190/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.4116e-04 -
accuracy: 1.0000 - val_loss: 1.7270 - val_accuracy: 0.8077
Epoch 191/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.5525e-05 -
accuracy: 1.0000 - val_loss: 1.7205 - val_accuracy: 0.8077
Epoch 192/1000
1/1 [==============================] - 0s 36ms/step - loss: 7.0216e-05 -
accuracy: 1.0000 - val_loss: 1.7155 - val_accuracy: 0.8077
Epoch 193/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.1673e-05 -
accuracy: 1.0000 - val_loss: 1.7111 - val_accuracy: 0.8077
Epoch 194/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0859e-04 -
accuracy: 1.0000 - val_loss: 1.7077 - val_accuracy: 0.8077
Epoch 195/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.3784e-04 -
accuracy: 1.0000 - val_loss: 1.7087 - val_accuracy: 0.8077
Epoch 196/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.5269e-04 -
accuracy: 1.0000 - val_loss: 1.7086 - val_accuracy: 0.8077
Epoch 197/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 7.0191e-05 -
accuracy: 1.0000 - val_loss: 1.7094 - val_accuracy: 0.8077
Epoch 198/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.1624e-04 -
accuracy: 1.0000 - val_loss: 1.7111 - val_accuracy: 0.8077
Epoch 199/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.1114e-05 -
accuracy: 1.0000 - val_loss: 1.7136 - val_accuracy: 0.8077
Epoch 200/1000
1/1 [==============================] - 0s 28ms/step - loss: 5.6840e-05 -
accuracy: 1.0000 - val_loss: 1.7157 - val_accuracy: 0.8077
Epoch 201/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.2874e-05 -
accuracy: 1.0000 - val_loss: 1.7182 - val_accuracy: 0.8077
Epoch 202/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.1581e-04 -
accuracy: 1.0000 - val_loss: 1.7209 - val_accuracy: 0.8077
Epoch 203/1000
1/1 [==============================] - 0s 28ms/step - loss: 1.5000e-04 -
accuracy: 1.0000 - val_loss: 1.7165 - val_accuracy: 0.8077
Epoch 204/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.7996e-05 -
accuracy: 1.0000 - val_loss: 1.7145 - val_accuracy: 0.8077
Epoch 205/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.6012e-05 -
accuracy: 1.0000 - val_loss: 1.7119 - val_accuracy: 0.8077
Epoch 206/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.0781e-04 -
accuracy: 1.0000 - val_loss: 1.7117 - val_accuracy: 0.8077
Epoch 207/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.5961e-04 -
accuracy: 1.0000 - val_loss: 1.7127 - val_accuracy: 0.8077
Epoch 208/1000
1/1 [==============================] - 0s 33ms/step - loss: 9.6324e-05 -
accuracy: 1.0000 - val_loss: 1.7171 - val_accuracy: 0.8077
Epoch 209/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.7032e-04 -
accuracy: 1.0000 - val_loss: 1.7225 - val_accuracy: 0.8077
Epoch 210/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.3389e-04 -
accuracy: 1.0000 - val_loss: 1.7292 - val_accuracy: 0.8077
Epoch 211/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0295e-04 -
accuracy: 1.0000 - val_loss: 1.7399 - val_accuracy: 0.8077
Epoch 212/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.7380e-05 -
accuracy: 1.0000 - val_loss: 1.7499 - val_accuracy: 0.8077
Epoch 213/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 5.1752e-05 -
accuracy: 1.0000 - val_loss: 1.7579 - val_accuracy: 0.8077
Epoch 214/1000
1/1 [==============================] - 0s 29ms/step - loss: 9.6778e-05 -
accuracy: 1.0000 - val_loss: 1.7664 - val_accuracy: 0.8077
Epoch 215/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3100e-04 -
accuracy: 1.0000 - val_loss: 1.7762 - val_accuracy: 0.8077
Epoch 216/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.4412e-04 -
accuracy: 1.0000 - val_loss: 1.7876 - val_accuracy: 0.8077
Epoch 217/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.3464e-04 -
accuracy: 1.0000 - val_loss: 1.7968 - val_accuracy: 0.8077
Epoch 218/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.5665e-05 -
accuracy: 1.0000 - val_loss: 1.8069 - val_accuracy: 0.8077
Epoch 219/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.0498e-04 -
accuracy: 1.0000 - val_loss: 1.8147 - val_accuracy: 0.8077
Epoch 220/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3452e-04 -
accuracy: 1.0000 - val_loss: 1.8192 - val_accuracy: 0.8077
Epoch 221/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.2123e-04 -
accuracy: 1.0000 - val_loss: 1.8246 - val_accuracy: 0.8077
Epoch 222/1000
1/1 [==============================] - 0s 36ms/step - loss: 7.8009e-05 -
accuracy: 1.0000 - val_loss: 1.8270 - val_accuracy: 0.8077
Epoch 223/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.6221e-05 -
accuracy: 1.0000 - val_loss: 1.8281 - val_accuracy: 0.8077
Epoch 224/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.1387e-04 -
accuracy: 1.0000 - val_loss: 1.8273 - val_accuracy: 0.8077
Epoch 225/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.6326e-05 -
accuracy: 1.0000 - val_loss: 1.8255 - val_accuracy: 0.8077
Epoch 226/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.6922e-05 -
accuracy: 1.0000 - val_loss: 1.8227 - val_accuracy: 0.8077
Epoch 227/1000
1/1 [==============================] - 0s 30ms/step - loss: 7.0617e-05 -
accuracy: 1.0000 - val_loss: 1.8208 - val_accuracy: 0.8077
Epoch 228/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.2499e-04 -
accuracy: 1.0000 - val_loss: 1.8166 - val_accuracy: 0.8077
Epoch 229/1000
```

```
1/1 [==============================] - 0s 29ms/step - loss: 1.0170e-04 -
accuracy: 1.0000 - val_loss: 1.8099 - val_accuracy: 0.8077
Epoch 230/1000
1/1 [==============================] - 0s 30ms/step - loss: 5.2749e-05 -
accuracy: 1.0000 - val_loss: 1.8038 - val_accuracy: 0.8077
Epoch 231/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.1236e-05 -
accuracy: 1.0000 - val_loss: 1.7967 - val_accuracy: 0.8077
Epoch 232/1000
1/1 [==============================] - 0s 34ms/step - loss: 7.6261e-05 -
accuracy: 1.0000 - val_loss: 1.7890 - val_accuracy: 0.8077
Epoch 233/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.7186e-05 -
accuracy: 1.0000 - val_loss: 1.7814 - val_accuracy: 0.8077
Epoch 234/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.3758e-04 -
accuracy: 1.0000 - val_loss: 1.7710 - val_accuracy: 0.8077
Epoch 235/1000
1/1 [==============================] - 0s 36ms/step - loss: 7.1742e-05 -
accuracy: 1.0000 - val_loss: 1.7645 - val_accuracy: 0.8077
Epoch 236/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.8389e-05 -
accuracy: 1.0000 - val_loss: 1.7599 - val_accuracy: 0.8077
Epoch 237/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.8568e-05 -
accuracy: 1.0000 - val_loss: 1.7590 - val_accuracy: 0.8077
Epoch 238/1000
1/1 [==============================] - 0s 29ms/step - loss: 7.0540e-05 -
accuracy: 1.0000 - val_loss: 1.7569 - val_accuracy: 0.8077
Epoch 239/1000
1/1 [==============================] - 0s 31ms/step - loss: 5.7278e-05 -
accuracy: 1.0000 - val_loss: 1.7537 - val_accuracy: 0.8077
Epoch 240/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.2560e-05 -
accuracy: 1.0000 - val_loss: 1.7511 - val_accuracy: 0.8077
Epoch 241/1000
1/1 [==============================] - 0s 36ms/step - loss: 8.8674e-05 -
accuracy: 1.0000 - val_loss: 1.7496 - val_accuracy: 0.8077
Epoch 242/1000
1/1 [==============================] - 0s 29ms/step - loss: 3.1352e-05 -
accuracy: 1.0000 - val_loss: 1.7488 - val_accuracy: 0.8077
Epoch 243/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.4819e-05 -
accuracy: 1.0000 - val_loss: 1.7493 - val_accuracy: 0.8077
Epoch 244/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.3420e-05 -
accuracy: 1.0000 - val_loss: 1.7512 - val_accuracy: 0.8077
Epoch 245/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 6.3247e-05 -
accuracy: 1.0000 - val_loss: 1.7543 - val_accuracy: 0.8077
Epoch 246/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.0519e-04 -
accuracy: 1.0000 - val_loss: 1.7599 - val_accuracy: 0.8077
Epoch 247/1000
1/1 [==============================] - 0s 34ms/step - loss: 9.4916e-05 -
accuracy: 1.0000 - val_loss: 1.7688 - val_accuracy: 0.8077
Epoch 248/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.0570e-04 -
accuracy: 1.0000 - val_loss: 1.7759 - val_accuracy: 0.8077
Epoch 249/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.5036e-05 -
accuracy: 1.0000 - val_loss: 1.7826 - val_accuracy: 0.8077
Epoch 250/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.5005e-05 -
accuracy: 1.0000 - val_loss: 1.7905 - val_accuracy: 0.8077
Epoch 251/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.2835e-05 -
accuracy: 1.0000 - val_loss: 1.7982 - val_accuracy: 0.8077
Epoch 252/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.4643e-05 -
accuracy: 1.0000 - val_loss: 1.8043 - val_accuracy: 0.8077
Epoch 253/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.8711e-05 -
accuracy: 1.0000 - val_loss: 1.8109 - val_accuracy: 0.8077
Epoch 254/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.8125e-05 -
accuracy: 1.0000 - val_loss: 1.8183 - val_accuracy: 0.8077
Epoch 255/1000
1/1 [==============================] - 0s 37ms/step - loss: 4.2980e-05 -
accuracy: 1.0000 - val_loss: 1.8260 - val_accuracy: 0.8077
Epoch 256/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.2687e-04 -
accuracy: 1.0000 - val_loss: 1.8352 - val_accuracy: 0.8077
Epoch 257/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.9491e-05 -
accuracy: 1.0000 - val_loss: 1.8400 - val_accuracy: 0.8077
Epoch 258/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.3393e-05 -
accuracy: 1.0000 - val_loss: 1.8437 - val_accuracy: 0.8077
Epoch 259/1000
1/1 [==============================] - 0s 39ms/step - loss: 1.2670e-04 -
accuracy: 1.0000 - val_loss: 1.8402 - val_accuracy: 0.8077
Epoch 260/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.1120e-05 -
accuracy: 1.0000 - val_loss: 1.8372 - val_accuracy: 0.8077
Epoch 261/1000
```

```
1/1 [==============================] - 0s 36ms/step - loss: 1.2124e-04 -
accuracy: 1.0000 - val_loss: 1.8388 - val_accuracy: 0.8077
Epoch 262/1000
1/1 [==============================] - 0s 39ms/step - loss: 6.7931e-05 -
accuracy: 1.0000 - val_loss: 1.8384 - val_accuracy: 0.8077
Epoch 263/1000
1/1 [==============================] - 0s 43ms/step - loss: 8.4180e-05 -
accuracy: 1.0000 - val_loss: 1.8359 - val_accuracy: 0.8077
Epoch 264/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.7878e-05 -
accuracy: 1.0000 - val_loss: 1.8339 - val_accuracy: 0.8077
Epoch 265/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.1459e-05 -
accuracy: 1.0000 - val_loss: 1.8312 - val_accuracy: 0.8077
Epoch 266/1000
1/1 [==============================] - 0s 39ms/step - loss: 1.2352e-04 -
accuracy: 1.0000 - val_loss: 1.8319 - val_accuracy: 0.8077
Epoch 267/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.8861e-05 -
accuracy: 1.0000 - val_loss: 1.8322 - val_accuracy: 0.8077
Epoch 268/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.7058e-04 -
accuracy: 1.0000 - val_loss: 1.8375 - val_accuracy: 0.8077
Epoch 269/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.4069e-04 -
accuracy: 1.0000 - val_loss: 1.8373 - val_accuracy: 0.8077
Epoch 270/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.9870e-05 -
accuracy: 1.0000 - val_loss: 1.8388 - val_accuracy: 0.8077
Epoch 271/1000
1/1 [==============================] - 0s 40ms/step - loss: 5.5584e-05 -
accuracy: 1.0000 - val_loss: 1.8365 - val_accuracy: 0.8077
Epoch 272/1000
1/1 [==============================] - 0s 29ms/step - loss: 6.1213e-05 -
accuracy: 1.0000 - val_loss: 1.8300 - val_accuracy: 0.8077
Epoch 273/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.7797e-05 -
accuracy: 1.0000 - val_loss: 1.8238 - val_accuracy: 0.8077
Epoch 274/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.1593e-05 -
accuracy: 1.0000 - val_loss: 1.8184 - val_accuracy: 0.8077
Epoch 275/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.9541e-05 -
accuracy: 1.0000 - val_loss: 1.8127 - val_accuracy: 0.8077
Epoch 276/1000
1/1 [==============================] - 0s 36ms/step - loss: 8.9119e-05 -
accuracy: 1.0000 - val_loss: 1.8120 - val_accuracy: 0.8077
Epoch 277/1000
```

```
1/1 [==============================] - 0s 36ms/step - loss: 1.1151e-04 -
accuracy: 1.0000 - val_loss: 1.8150 - val_accuracy: 0.8077
Epoch 278/1000
1/1 [==============================] - 0s 39ms/step - loss: 6.8249e-05 -
accuracy: 1.0000 - val_loss: 1.8207 - val_accuracy: 0.8077
Epoch 279/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.6965e-05 -
accuracy: 1.0000 - val_loss: 1.8254 - val_accuracy: 0.8077
Epoch 280/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.6061e-05 -
accuracy: 1.0000 - val_loss: 1.8302 - val_accuracy: 0.8077
Epoch 281/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.1089e-05 -
accuracy: 1.0000 - val_loss: 1.8332 - val_accuracy: 0.8077
Epoch 282/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.9640e-05 -
accuracy: 1.0000 - val_loss: 1.8377 - val_accuracy: 0.8077
Epoch 283/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.9442e-05 -
accuracy: 1.0000 - val_loss: 1.8419 - val_accuracy: 0.8077
Epoch 284/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.7140e-05 -
accuracy: 1.0000 - val_loss: 1.8456 - val_accuracy: 0.8077
Epoch 285/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.6819e-05 -
accuracy: 1.0000 - val_loss: 1.8503 - val_accuracy: 0.8077
Epoch 286/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.9173e-05 -
accuracy: 1.0000 - val_loss: 1.8550 - val_accuracy: 0.8077
Epoch 287/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0176e-04 -
accuracy: 1.0000 - val_loss: 1.8633 - val_accuracy: 0.8077
Epoch 288/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.5365e-05 -
accuracy: 1.0000 - val_loss: 1.8715 - val_accuracy: 0.8077
Epoch 289/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.1247e-05 -
accuracy: 1.0000 - val_loss: 1.8782 - val_accuracy: 0.8077
Epoch 290/1000
1/1 [==============================] - 0s 34ms/step - loss: 9.4945e-05 -
accuracy: 1.0000 - val_loss: 1.8819 - val_accuracy: 0.8077
Epoch 291/1000
1/1 [==============================] - 0s 38ms/step - loss: 3.6042e-05 -
accuracy: 1.0000 - val_loss: 1.8851 - val_accuracy: 0.8077
Epoch 292/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.1232e-05 -
accuracy: 1.0000 - val_loss: 1.8894 - val_accuracy: 0.8077
Epoch 293/1000
```

```
1/1 [==============================] - 0s 38ms/step - loss: 3.0671e-05 -
accuracy: 1.0000 - val_loss: 1.8914 - val_accuracy: 0.8077
Epoch 294/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.2601e-05 -
accuracy: 1.0000 - val_loss: 1.8950 - val_accuracy: 0.8077
Epoch 295/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.3193e-05 -
accuracy: 1.0000 - val_loss: 1.8973 - val_accuracy: 0.8077
Epoch 296/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.5061e-05 -
accuracy: 1.0000 - val_loss: 1.8958 - val_accuracy: 0.8077
Epoch 297/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.7775e-05 -
accuracy: 1.0000 - val_loss: 1.8914 - val_accuracy: 0.8077
Epoch 298/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.3633e-05 -
accuracy: 1.0000 - val_loss: 1.8874 - val_accuracy: 0.8077
Epoch 299/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.9428e-05 -
accuracy: 1.0000 - val_loss: 1.8816 - val_accuracy: 0.8077
Epoch 300/1000
1/1 [==============================] - 0s 38ms/step - loss: 6.1200e-05 -
accuracy: 1.0000 - val_loss: 1.8766 - val_accuracy: 0.8077
Epoch 301/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.9234e-05 -
accuracy: 1.0000 - val_loss: 1.8687 - val_accuracy: 0.8077
Epoch 302/1000
1/1 [==============================] - 0s 30ms/step - loss: 4.1699e-05 -
accuracy: 1.0000 - val_loss: 1.8605 - val_accuracy: 0.8077
Epoch 303/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.9016e-05 -
accuracy: 1.0000 - val_loss: 1.8525 - val_accuracy: 0.8077
Epoch 304/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.9605e-05 -
accuracy: 1.0000 - val_loss: 1.8485 - val_accuracy: 0.8077
Epoch 305/1000
1/1 [==============================] - 0s 38ms/step - loss: 5.2330e-05 -
accuracy: 1.0000 - val_loss: 1.8449 - val_accuracy: 0.8077
Epoch 306/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.8997e-05 -
accuracy: 1.0000 - val_loss: 1.8417 - val_accuracy: 0.8077
Epoch 307/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.9126e-05 -
accuracy: 1.0000 - val_loss: 1.8400 - val_accuracy: 0.8077
Epoch 308/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.2637e-05 -
accuracy: 1.0000 - val_loss: 1.8394 - val_accuracy: 0.8077
Epoch 309/1000
```

```
1/1 [==============================] - 0s 36ms/step - loss: 1.1595e-04 -
accuracy: 1.0000 - val_loss: 1.8420 - val_accuracy: 0.8077
Epoch 310/1000
1/1 [==============================] - 0s 31ms/step - loss: 5.7758e-05 -
accuracy: 1.0000 - val_loss: 1.8454 - val_accuracy: 0.8077
Epoch 311/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.6556e-05 -
accuracy: 1.0000 - val_loss: 1.8488 - val_accuracy: 0.8077
Epoch 312/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.9278e-05 -
accuracy: 1.0000 - val_loss: 1.8518 - val_accuracy: 0.8077
Epoch 313/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.9992e-05 -
accuracy: 1.0000 - val_loss: 1.8532 - val_accuracy: 0.8077
Epoch 314/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.3293e-05 -
accuracy: 1.0000 - val_loss: 1.8557 - val_accuracy: 0.8077
Epoch 315/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.6357e-05 -
accuracy: 1.0000 - val_loss: 1.8578 - val_accuracy: 0.8077
Epoch 316/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.9420e-05 -
accuracy: 1.0000 - val_loss: 1.8584 - val_accuracy: 0.8077
Epoch 317/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.6898e-05 -
accuracy: 1.0000 - val_loss: 1.8619 - val_accuracy: 0.8077
Epoch 318/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.0435e-05 -
accuracy: 1.0000 - val_loss: 1.8656 - val_accuracy: 0.8077
Epoch 319/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.1159e-05 -
accuracy: 1.0000 - val_loss: 1.8687 - val_accuracy: 0.8077
Epoch 320/1000
1/1 [==============================] - 0s 37ms/step - loss: 6.7813e-05 -
accuracy: 1.0000 - val_loss: 1.8721 - val_accuracy: 0.8077
Epoch 321/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.9636e-05 -
accuracy: 1.0000 - val_loss: 1.8782 - val_accuracy: 0.8077
Epoch 322/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.2362e-05 -
accuracy: 1.0000 - val_loss: 1.8827 - val_accuracy: 0.8077
Epoch 323/1000
1/1 [==============================] - 0s 37ms/step - loss: 4.7420e-05 -
accuracy: 1.0000 - val_loss: 1.8891 - val_accuracy: 0.8077
Epoch 324/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.6657e-05 -
accuracy: 1.0000 - val_loss: 1.8975 - val_accuracy: 0.8077
Epoch 325/1000
```

```
1/1 [==============================] - 0s 32ms/step - loss: 5.8912e-05 -
accuracy: 1.0000 - val_loss: 1.9024 - val_accuracy: 0.8077
Epoch 326/1000
1/1 [==============================] - 0s 37ms/step - loss: 5.1736e-05 -
accuracy: 1.0000 - val_loss: 1.9044 - val_accuracy: 0.8077
Epoch 327/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.1637e-05 -
accuracy: 1.0000 - val_loss: 1.9031 - val_accuracy: 0.8077
Epoch 328/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.7846e-05 -
accuracy: 1.0000 - val_loss: 1.9000 - val_accuracy: 0.8077
Epoch 329/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.3325e-05 -
accuracy: 1.0000 - val_loss: 1.8966 - val_accuracy: 0.8077
Epoch 330/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.3559e-05 -
accuracy: 1.0000 - val_loss: 1.8964 - val_accuracy: 0.8077
Epoch 331/1000
1/1 [==============================] - 0s 38ms/step - loss: 6.7712e-05 -
accuracy: 1.0000 - val_loss: 1.8922 - val_accuracy: 0.8077
Epoch 332/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.4250e-05 -
accuracy: 1.0000 - val_loss: 1.8894 - val_accuracy: 0.8077
Epoch 333/1000
1/1 [==============================] - 0s 39ms/step - loss: 3.4409e-05 -
accuracy: 1.0000 - val_loss: 1.8872 - val_accuracy: 0.8077
Epoch 334/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.6387e-05 -
accuracy: 1.0000 - val_loss: 1.8865 - val_accuracy: 0.8077
Epoch 335/1000
1/1 [==============================] - 0s 37ms/step - loss: 3.5350e-05 -
accuracy: 1.0000 - val_loss: 1.8874 - val_accuracy: 0.8077
Epoch 336/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.6762e-05 -
accuracy: 1.0000 - val_loss: 1.8855 - val_accuracy: 0.8077
Epoch 337/1000
1/1 [==============================] - 0s 37ms/step - loss: 3.6602e-05 -
accuracy: 1.0000 - val_loss: 1.8822 - val_accuracy: 0.8077
Epoch 338/1000
1/1 [==============================] - 0s 30ms/step - loss: 4.7553e-05 -
accuracy: 1.0000 - val_loss: 1.8794 - val_accuracy: 0.8077
Epoch 339/1000
1/1 [==============================] - 0s 38ms/step - loss: 3.3039e-05 -
accuracy: 1.0000 - val_loss: 1.8766 - val_accuracy: 0.8077
Epoch 340/1000
1/1 [==============================] - 0s 30ms/step - loss: 5.1898e-05 -
accuracy: 1.0000 - val_loss: 1.8749 - val_accuracy: 0.8077
Epoch 341/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 2.7636e-05 -
accuracy: 1.0000 - val_loss: 1.8752 - val_accuracy: 0.8077
Epoch 342/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.7461e-05 -
accuracy: 1.0000 - val_loss: 1.8755 - val_accuracy: 0.8077
Epoch 343/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.6274e-05 -
accuracy: 1.0000 - val_loss: 1.8749 - val_accuracy: 0.8077
Epoch 344/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.9920e-05 -
accuracy: 1.0000 - val_loss: 1.8737 - val_accuracy: 0.8077
Epoch 345/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.4719e-05 -
accuracy: 1.0000 - val_loss: 1.8733 - val_accuracy: 0.8077
Epoch 346/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.6334e-05 -
accuracy: 1.0000 - val_loss: 1.8752 - val_accuracy: 0.8077
Epoch 347/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.7986e-05 -
accuracy: 1.0000 - val_loss: 1.8778 - val_accuracy: 0.8077
Epoch 348/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.7168e-05 -
accuracy: 1.0000 - val_loss: 1.8819 - val_accuracy: 0.8077
Epoch 349/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.4088e-05 -
accuracy: 1.0000 - val_loss: 1.8852 - val_accuracy: 0.8077
Epoch 350/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.2395e-05 -
accuracy: 1.0000 - val_loss: 1.8900 - val_accuracy: 0.8077
Epoch 351/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.4897e-05 -
accuracy: 1.0000 - val_loss: 1.8942 - val_accuracy: 0.8077
Epoch 352/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.3409e-05 -
accuracy: 1.0000 - val_loss: 1.8995 - val_accuracy: 0.8077
Epoch 353/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.6961e-05 -
accuracy: 1.0000 - val_loss: 1.9045 - val_accuracy: 0.8077
Epoch 354/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.4070e-05 -
accuracy: 1.0000 - val_loss: 1.9095 - val_accuracy: 0.8077
Epoch 355/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.3695e-05 -
accuracy: 1.0000 - val_loss: 1.9126 - val_accuracy: 0.8077
Epoch 356/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.8242e-05 -
accuracy: 1.0000 - val_loss: 1.9147 - val_accuracy: 0.8077
Epoch 357/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 3.0341e-05 -
accuracy: 1.0000 - val_loss: 1.9154 - val_accuracy: 0.8077
Epoch 358/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.3669e-05 -
accuracy: 1.0000 - val_loss: 1.9182 - val_accuracy: 0.8077
Epoch 359/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.6910e-05 -
accuracy: 1.0000 - val_loss: 1.9227 - val_accuracy: 0.8077
Epoch 360/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.5129e-05 -
accuracy: 1.0000 - val_loss: 1.9261 - val_accuracy: 0.8077
Epoch 361/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.6569e-05 -
accuracy: 1.0000 - val_loss: 1.9292 - val_accuracy: 0.8077
Epoch 362/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.9818e-05 -
accuracy: 1.0000 - val_loss: 1.9327 - val_accuracy: 0.8077
Epoch 363/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.2608e-05 -
accuracy: 1.0000 - val_loss: 1.9384 - val_accuracy: 0.8077
Epoch 364/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.6381e-05 -
accuracy: 1.0000 - val_loss: 1.9425 - val_accuracy: 0.8077
Epoch 365/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.8556e-05 -
accuracy: 1.0000 - val_loss: 1.9454 - val_accuracy: 0.8077
Epoch 366/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.7380e-05 -
accuracy: 1.0000 - val_loss: 1.9501 - val_accuracy: 0.8077
Epoch 367/1000
1/1 [==============================] - 0s 37ms/step - loss: 4.2688e-05 -
accuracy: 1.0000 - val_loss: 1.9542 - val_accuracy: 0.8077
Epoch 368/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.9386e-05 -
accuracy: 1.0000 - val_loss: 1.9577 - val_accuracy: 0.8077
Epoch 369/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.1363e-05 -
accuracy: 1.0000 - val_loss: 1.9604 - val_accuracy: 0.8077
Epoch 370/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.8692e-05 -
accuracy: 1.0000 - val_loss: 1.9631 - val_accuracy: 0.8077
Epoch 371/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.9976e-05 -
accuracy: 1.0000 - val_loss: 1.9616 - val_accuracy: 0.8077
Epoch 372/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.6171e-05 -
accuracy: 1.0000 - val_loss: 1.9619 - val_accuracy: 0.8077
Epoch 373/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 2.6203e-05 -
accuracy: 1.0000 - val_loss: 1.9626 - val_accuracy: 0.8077
Epoch 374/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.8900e-05 -
accuracy: 1.0000 - val_loss: 1.9627 - val_accuracy: 0.8077
Epoch 375/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.0584e-05 -
accuracy: 1.0000 - val_loss: 1.9643 - val_accuracy: 0.8077
Epoch 376/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.9672e-05 -
accuracy: 1.0000 - val_loss: 1.9673 - val_accuracy: 0.8077
Epoch 377/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.1896e-05 -
accuracy: 1.0000 - val_loss: 1.9685 - val_accuracy: 0.8077
Epoch 378/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.6889e-05 -
accuracy: 1.0000 - val_loss: 1.9691 - val_accuracy: 0.8077
Epoch 379/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.9215e-05 -
accuracy: 1.0000 - val_loss: 1.9694 - val_accuracy: 0.8077
Epoch 380/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.6405e-05 -
accuracy: 1.0000 - val_loss: 1.9695 - val_accuracy: 0.8077
Epoch 381/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.0981e-05 -
accuracy: 1.0000 - val_loss: 1.9679 - val_accuracy: 0.8077
Epoch 382/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.8469e-05 -
accuracy: 1.0000 - val_loss: 1.9657 - val_accuracy: 0.8077
Epoch 383/1000
1/1 [==============================] - 0s 40ms/step - loss: 3.1294e-05 -
accuracy: 1.0000 - val_loss: 1.9617 - val_accuracy: 0.8077
Epoch 384/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.6249e-05 -
accuracy: 1.0000 - val_loss: 1.9587 - val_accuracy: 0.8077
Epoch 385/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.4960e-05 -
accuracy: 1.0000 - val_loss: 1.9553 - val_accuracy: 0.8077
Epoch 386/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.9955e-05 -
accuracy: 1.0000 - val_loss: 1.9535 - val_accuracy: 0.8077
Epoch 387/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.6120e-05 -
accuracy: 1.0000 - val_loss: 1.9476 - val_accuracy: 0.8077
Epoch 388/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.2142e-05 -
accuracy: 1.0000 - val_loss: 1.9447 - val_accuracy: 0.8077
Epoch 389/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 1.8144e-05 -
accuracy: 1.0000 - val_loss: 1.9407 - val_accuracy: 0.8077
Epoch 390/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.7130e-05 -
accuracy: 1.0000 - val_loss: 1.9355 - val_accuracy: 0.8077
Epoch 391/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.1964e-05 -
accuracy: 1.0000 - val_loss: 1.9358 - val_accuracy: 0.8077
Epoch 392/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.7515e-05 -
accuracy: 1.0000 - val_loss: 1.9376 - val_accuracy: 0.8077
Epoch 393/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.6993e-05 -
accuracy: 1.0000 - val_loss: 1.9424 - val_accuracy: 0.8077
Epoch 394/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.8726e-05 -
accuracy: 1.0000 - val_loss: 1.9516 - val_accuracy: 0.8077
Epoch 395/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.4894e-05 -
accuracy: 1.0000 - val_loss: 1.9629 - val_accuracy: 0.8077
Epoch 396/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.5760e-05 -
accuracy: 1.0000 - val_loss: 1.9728 - val_accuracy: 0.8077
Epoch 397/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.3810e-05 -
accuracy: 1.0000 - val_loss: 1.9806 - val_accuracy: 0.8077
Epoch 398/1000
1/1 [==============================] - 0s 28ms/step - loss: 2.9477e-05 -
accuracy: 1.0000 - val_loss: 1.9867 - val_accuracy: 0.8077
Epoch 399/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.7986e-05 -
accuracy: 1.0000 - val_loss: 1.9901 - val_accuracy: 0.8077
Epoch 400/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.5544e-05 -
accuracy: 1.0000 - val_loss: 1.9941 - val_accuracy: 0.8077
Epoch 401/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.1253e-05 -
accuracy: 1.0000 - val_loss: 1.9968 - val_accuracy: 0.8077
Epoch 402/1000
1/1 [==============================] - 0s 30ms/step - loss: 4.4919e-05 -
accuracy: 1.0000 - val_loss: 1.9981 - val_accuracy: 0.8077
Epoch 403/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.2696e-05 -
accuracy: 1.0000 - val_loss: 1.9978 - val_accuracy: 0.8077
Epoch 404/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.4561e-05 -
accuracy: 1.0000 - val_loss: 1.9985 - val_accuracy: 0.8077
Epoch 405/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 2.9610e-05 -
accuracy: 1.0000 - val_loss: 1.9994 - val_accuracy: 0.8077
Epoch 406/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.7919e-05 -
accuracy: 1.0000 - val_loss: 1.9978 - val_accuracy: 0.8077
Epoch 407/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.6201e-05 -
accuracy: 1.0000 - val_loss: 1.9900 - val_accuracy: 0.8077
Epoch 408/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.9728e-05 -
accuracy: 1.0000 - val_loss: 1.9817 - val_accuracy: 0.8077
Epoch 409/1000
1/1 [==============================] - 0s 30ms/step - loss: 4.7865e-05 -
accuracy: 1.0000 - val_loss: 1.9738 - val_accuracy: 0.8077
Epoch 410/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.0244e-05 -
accuracy: 1.0000 - val_loss: 1.9649 - val_accuracy: 0.8077
Epoch 411/1000
1/1 [==============================] - 0s 28ms/step - loss: 3.9891e-05 -
accuracy: 1.0000 - val_loss: 1.9601 - val_accuracy: 0.8077
Epoch 412/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.7123e-05 -
accuracy: 1.0000 - val_loss: 1.9544 - val_accuracy: 0.8077
Epoch 413/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.2728e-05 -
accuracy: 1.0000 - val_loss: 1.9488 - val_accuracy: 0.8077
Epoch 414/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.5811e-05 -
accuracy: 1.0000 - val_loss: 1.9537 - val_accuracy: 0.8077
Epoch 415/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.3889e-05 -
accuracy: 1.0000 - val_loss: 1.9675 - val_accuracy: 0.8077
Epoch 416/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.6135e-05 -
accuracy: 1.0000 - val_loss: 1.9818 - val_accuracy: 0.8077
Epoch 417/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.4709e-05 -
accuracy: 1.0000 - val_loss: 1.9925 - val_accuracy: 0.8077
Epoch 418/1000
1/1 [==============================] - 0s 28ms/step - loss: 2.4217e-05 -
accuracy: 1.0000 - val_loss: 2.0020 - val_accuracy: 0.8077
Epoch 419/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.6170e-05 -
accuracy: 1.0000 - val_loss: 2.0101 - val_accuracy: 0.8077
Epoch 420/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.8577e-05 -
accuracy: 1.0000 - val_loss: 2.0165 - val_accuracy: 0.8077
Epoch 421/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 2.1554e-05 -
accuracy: 1.0000 - val_loss: 2.0216 - val_accuracy: 0.8077
Epoch 422/1000
1/1 [==============================] - 0s 28ms/step - loss: 2.5723e-05 -
accuracy: 1.0000 - val_loss: 2.0255 - val_accuracy: 0.8077
Epoch 423/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.3311e-05 -
accuracy: 1.0000 - val_loss: 2.0278 - val_accuracy: 0.8077
Epoch 424/1000
1/1 [==============================] - 0s 39ms/step - loss: 2.5895e-05 -
accuracy: 1.0000 - val_loss: 2.0286 - val_accuracy: 0.8077
Epoch 425/1000
1/1 [==============================] - 0s 39ms/step - loss: 3.5979e-05 -
accuracy: 1.0000 - val_loss: 2.0273 - val_accuracy: 0.8077
Epoch 426/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.5461e-05 -
accuracy: 1.0000 - val_loss: 2.0249 - val_accuracy: 0.8077
Epoch 427/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.3310e-05 -
accuracy: 1.0000 - val_loss: 2.0240 - val_accuracy: 0.8077
Epoch 428/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.0429e-05 -
accuracy: 1.0000 - val_loss: 2.0219 - val_accuracy: 0.8077
Epoch 429/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.6584e-05 -
accuracy: 1.0000 - val_loss: 2.0192 - val_accuracy: 0.8077
Epoch 430/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.8207e-05 -
accuracy: 1.0000 - val_loss: 2.0180 - val_accuracy: 0.8077
Epoch 431/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.0457e-05 -
accuracy: 1.0000 - val_loss: 2.0135 - val_accuracy: 0.8077
Epoch 432/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.2995e-05 -
accuracy: 1.0000 - val_loss: 2.0107 - val_accuracy: 0.8077
Epoch 433/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.4759e-05 -
accuracy: 1.0000 - val_loss: 2.0080 - val_accuracy: 0.8077
Epoch 434/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.4028e-05 -
accuracy: 1.0000 - val_loss: 2.0039 - val_accuracy: 0.8077
Epoch 435/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.9597e-05 -
accuracy: 1.0000 - val_loss: 1.9992 - val_accuracy: 0.8077
Epoch 436/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.9402e-05 -
accuracy: 1.0000 - val_loss: 1.9980 - val_accuracy: 0.8077
Epoch 437/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 1.7905e-05 -
accuracy: 1.0000 - val_loss: 1.9956 - val_accuracy: 0.8077
Epoch 438/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.9358e-05 -
accuracy: 1.0000 - val_loss: 1.9947 - val_accuracy: 0.8077
Epoch 439/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.9920e-05 -
accuracy: 1.0000 - val_loss: 1.9929 - val_accuracy: 0.8077
Epoch 440/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.3155e-05 -
accuracy: 1.0000 - val_loss: 1.9900 - val_accuracy: 0.8077
Epoch 441/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.8714e-05 -
accuracy: 1.0000 - val_loss: 1.9846 - val_accuracy: 0.8077
Epoch 442/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.5601e-05 -
accuracy: 1.0000 - val_loss: 1.9795 - val_accuracy: 0.8077
Epoch 443/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.9408e-05 -
accuracy: 1.0000 - val_loss: 1.9753 - val_accuracy: 0.8077
Epoch 444/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.7978e-05 -
accuracy: 1.0000 - val_loss: 1.9736 - val_accuracy: 0.8077
Epoch 445/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.2687e-05 -
accuracy: 1.0000 - val_loss: 1.9724 - val_accuracy: 0.8077
Epoch 446/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.3116e-05 -
accuracy: 1.0000 - val_loss: 1.9703 - val_accuracy: 0.8077
Epoch 447/1000
1/1 [==============================] - 0s 28ms/step - loss: 1.0078e-05 -
accuracy: 1.0000 - val_loss: 1.9689 - val_accuracy: 0.8077
Epoch 448/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.6645e-05 -
accuracy: 1.0000 - val_loss: 1.9640 - val_accuracy: 0.8077
Epoch 449/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.9963e-05 -
accuracy: 1.0000 - val_loss: 1.9588 - val_accuracy: 0.8077
Epoch 450/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.5205e-05 -
accuracy: 1.0000 - val_loss: 1.9575 - val_accuracy: 0.8077
Epoch 451/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.6281e-05 -
accuracy: 1.0000 - val_loss: 1.9535 - val_accuracy: 0.8077
Epoch 452/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.4915e-05 -
accuracy: 1.0000 - val_loss: 1.9502 - val_accuracy: 0.8077
Epoch 453/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 2.8739e-05 -
accuracy: 1.0000 - val_loss: 1.9544 - val_accuracy: 0.8077
Epoch 454/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.8595e-05 -
accuracy: 1.0000 - val_loss: 1.9585 - val_accuracy: 0.8077
Epoch 455/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.5874e-05 -
accuracy: 1.0000 - val_loss: 1.9694 - val_accuracy: 0.8077
Epoch 456/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.4314e-05 -
accuracy: 1.0000 - val_loss: 1.9773 - val_accuracy: 0.8077
Epoch 457/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.3635e-05 -
accuracy: 1.0000 - val_loss: 1.9852 - val_accuracy: 0.8077
Epoch 458/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3513e-05 -
accuracy: 1.0000 - val_loss: 1.9946 - val_accuracy: 0.8077
Epoch 459/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.5831e-05 -
accuracy: 1.0000 - val_loss: 2.0040 - val_accuracy: 0.8077
Epoch 460/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.8731e-05 -
accuracy: 1.0000 - val_loss: 2.0160 - val_accuracy: 0.8077
Epoch 461/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.7114e-05 -
accuracy: 1.0000 - val_loss: 2.0253 - val_accuracy: 0.8077
Epoch 462/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.4353e-05 -
accuracy: 1.0000 - val_loss: 2.0334 - val_accuracy: 0.8077
Epoch 463/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.2890e-05 -
accuracy: 1.0000 - val_loss: 2.0402 - val_accuracy: 0.8077
Epoch 464/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.6592e-05 -
accuracy: 1.0000 - val_loss: 2.0451 - val_accuracy: 0.8077
Epoch 465/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.6790e-05 -
accuracy: 1.0000 - val_loss: 2.0488 - val_accuracy: 0.8077
Epoch 466/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.0277e-05 -
accuracy: 1.0000 - val_loss: 2.0508 - val_accuracy: 0.8077
Epoch 467/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.4239e-05 -
accuracy: 1.0000 - val_loss: 2.0513 - val_accuracy: 0.8077
Epoch 468/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.6195e-05 -
accuracy: 1.0000 - val_loss: 2.0506 - val_accuracy: 0.8077
Epoch 469/1000
```

```
1/1 [==============================] - 0s 30ms/step - loss: 1.7991e-05 -
accuracy: 1.0000 - val_loss: 2.0500 - val_accuracy: 0.8077
Epoch 470/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.6392e-05 -
accuracy: 1.0000 - val_loss: 2.0498 - val_accuracy: 0.8077
Epoch 471/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.9946e-05 -
accuracy: 1.0000 - val_loss: 2.0492 - val_accuracy: 0.8077
Epoch 472/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.9600e-06 -
accuracy: 1.0000 - val_loss: 2.0480 - val_accuracy: 0.8077
Epoch 473/1000
1/1 [==============================] - 0s 29ms/step - loss: 1.4629e-05 -
accuracy: 1.0000 - val_loss: 2.0480 - val_accuracy: 0.8077
Epoch 474/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.9618e-05 -
accuracy: 1.0000 - val_loss: 2.0493 - val_accuracy: 0.8077
Epoch 475/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.1598e-05 -
accuracy: 1.0000 - val_loss: 2.0495 - val_accuracy: 0.8077
Epoch 476/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.1791e-05 -
accuracy: 1.0000 - val_loss: 2.0506 - val_accuracy: 0.8077
Epoch 477/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0678e-05 -
accuracy: 1.0000 - val_loss: 2.0525 - val_accuracy: 0.8077
Epoch 478/1000
1/1 [==============================] - 0s 28ms/step - loss: 3.1189e-05 -
accuracy: 1.0000 - val_loss: 2.0546 - val_accuracy: 0.8077
Epoch 479/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.2231e-05 -
accuracy: 1.0000 - val_loss: 2.0554 - val_accuracy: 0.8077
Epoch 480/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.8805e-06 -
accuracy: 1.0000 - val_loss: 2.0554 - val_accuracy: 0.8077
Epoch 481/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.0043e-05 -
accuracy: 1.0000 - val_loss: 2.0541 - val_accuracy: 0.8077
Epoch 482/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.6949e-05 -
accuracy: 1.0000 - val_loss: 2.0523 - val_accuracy: 0.8077
Epoch 483/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.2386e-05 -
accuracy: 1.0000 - val_loss: 2.0532 - val_accuracy: 0.8077
Epoch 484/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.8643e-05 -
accuracy: 1.0000 - val_loss: 2.0518 - val_accuracy: 0.8077
Epoch 485/1000
```

```
1/1 [==============================] - 0s 29ms/step - loss: 9.2609e-06 -
accuracy: 1.0000 - val_loss: 2.0502 - val_accuracy: 0.8077
Epoch 486/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.9349e-05 -
accuracy: 1.0000 - val_loss: 2.0457 - val_accuracy: 0.8077
Epoch 487/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.4055e-05 -
accuracy: 1.0000 - val_loss: 2.0423 - val_accuracy: 0.8077
Epoch 488/1000
1/1 [==============================] - 0s 28ms/step - loss: 1.7568e-05 -
accuracy: 1.0000 - val_loss: 2.0373 - val_accuracy: 0.8077
Epoch 489/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.2207e-05 -
accuracy: 1.0000 - val_loss: 2.0331 - val_accuracy: 0.8077
Epoch 490/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.5615e-05 -
accuracy: 1.0000 - val_loss: 2.0310 - val_accuracy: 0.8077
Epoch 491/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.2428e-05 -
accuracy: 1.0000 - val_loss: 2.0333 - val_accuracy: 0.8077
Epoch 492/1000
1/1 [==============================] - 0s 36ms/step - loss: 9.8679e-06 -
accuracy: 1.0000 - val_loss: 2.0366 - val_accuracy: 0.8077
Epoch 493/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.1342e-05 -
accuracy: 1.0000 - val_loss: 2.0402 - val_accuracy: 0.8077
Epoch 494/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.6971e-05 -
accuracy: 1.0000 - val_loss: 2.0428 - val_accuracy: 0.8077
Epoch 495/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.1139e-05 -
accuracy: 1.0000 - val_loss: 2.0438 - val_accuracy: 0.8077
Epoch 496/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.1838e-05 -
accuracy: 1.0000 - val_loss: 2.0468 - val_accuracy: 0.8077
Epoch 497/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.3699e-05 -
accuracy: 1.0000 - val_loss: 2.0538 - val_accuracy: 0.8077
Epoch 498/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.9253e-05 -
accuracy: 1.0000 - val_loss: 2.0625 - val_accuracy: 0.8077
Epoch 499/1000
1/1 [==============================] - 0s 36ms/step - loss: 9.2927e-06 -
accuracy: 1.0000 - val_loss: 2.0696 - val_accuracy: 0.8077
Epoch 500/1000
1/1 [==============================] - 0s 29ms/step - loss: 1.3777e-05 -
accuracy: 1.0000 - val_loss: 2.0747 - val_accuracy: 0.8077
Epoch 501/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 2.8612e-05 -
accuracy: 1.0000 - val_loss: 2.0784 - val_accuracy: 0.8077
Epoch 502/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.4152e-05 -
accuracy: 1.0000 - val_loss: 2.0808 - val_accuracy: 0.8077
Epoch 503/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.3984e-05 -
accuracy: 1.0000 - val_loss: 2.0828 - val_accuracy: 0.8077
Epoch 504/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.0617e-05 -
accuracy: 1.0000 - val_loss: 2.0836 - val_accuracy: 0.8077
Epoch 505/1000
1/1 [==============================] - 0s 29ms/step - loss: 1.3939e-05 -
accuracy: 1.0000 - val_loss: 2.0816 - val_accuracy: 0.8077
Epoch 506/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.0171e-05 -
accuracy: 1.0000 - val_loss: 2.0779 - val_accuracy: 0.8077
Epoch 507/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.2811e-05 -
accuracy: 1.0000 - val_loss: 2.0755 - val_accuracy: 0.8077
Epoch 508/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.6761e-05 -
accuracy: 1.0000 - val_loss: 2.0735 - val_accuracy: 0.8077
Epoch 509/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.8150e-05 -
accuracy: 1.0000 - val_loss: 2.0721 - val_accuracy: 0.8077
Epoch 510/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.5245e-05 -
accuracy: 1.0000 - val_loss: 2.0718 - val_accuracy: 0.8077
Epoch 511/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.5547e-05 -
accuracy: 1.0000 - val_loss: 2.0712 - val_accuracy: 0.8077
Epoch 512/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.1482e-05 -
accuracy: 1.0000 - val_loss: 2.0699 - val_accuracy: 0.8077
Epoch 513/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.0364e-05 -
accuracy: 1.0000 - val_loss: 2.0686 - val_accuracy: 0.8077
Epoch 514/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.4266e-05 -
accuracy: 1.0000 - val_loss: 2.0682 - val_accuracy: 0.8077
Epoch 515/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.6485e-05 -
accuracy: 1.0000 - val_loss: 2.0672 - val_accuracy: 0.8077
Epoch 516/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.0421e-05 -
accuracy: 1.0000 - val_loss: 2.0681 - val_accuracy: 0.8077
Epoch 517/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 1.1050e-05 -
accuracy: 1.0000 - val_loss: 2.0682 - val_accuracy: 0.8077
Epoch 518/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.9462e-06 -
accuracy: 1.0000 - val_loss: 2.0682 - val_accuracy: 0.8077
Epoch 519/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.6952e-05 -
accuracy: 1.0000 - val_loss: 2.0654 - val_accuracy: 0.8077
Epoch 520/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.3366e-05 -
accuracy: 1.0000 - val_loss: 2.0647 - val_accuracy: 0.8077
Epoch 521/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.1491e-05 -
accuracy: 1.0000 - val_loss: 2.0689 - val_accuracy: 0.8077
Epoch 522/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.5105e-05 -
accuracy: 1.0000 - val_loss: 2.0715 - val_accuracy: 0.8077
Epoch 523/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.2132e-05 -
accuracy: 1.0000 - val_loss: 2.0739 - val_accuracy: 0.8077
Epoch 524/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.0317e-05 -
accuracy: 1.0000 - val_loss: 2.0782 - val_accuracy: 0.8077
Epoch 525/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.2142e-05 -
accuracy: 1.0000 - val_loss: 2.0816 - val_accuracy: 0.8077
Epoch 526/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.4517e-05 -
accuracy: 1.0000 - val_loss: 2.0832 - val_accuracy: 0.8077
Epoch 527/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.2188e-05 -
accuracy: 1.0000 - val_loss: 2.0826 - val_accuracy: 0.8077
Epoch 528/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.6861e-05 -
accuracy: 1.0000 - val_loss: 2.0841 - val_accuracy: 0.8077
Epoch 529/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.1819e-05 -
accuracy: 1.0000 - val_loss: 2.0873 - val_accuracy: 0.8077
Epoch 530/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.3521e-05 -
accuracy: 1.0000 - val_loss: 2.0899 - val_accuracy: 0.8077
Epoch 531/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.4181e-05 -
accuracy: 1.0000 - val_loss: 2.0919 - val_accuracy: 0.8077
Epoch 532/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.4571e-05 -
accuracy: 1.0000 - val_loss: 2.0929 - val_accuracy: 0.8077
Epoch 533/1000
```

```
1/1 [==============================] - 0s 28ms/step - loss: 1.4425e-05 -
accuracy: 1.0000 - val_loss: 2.0943 - val_accuracy: 0.8077
Epoch 534/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.3809e-05 -
accuracy: 1.0000 - val_loss: 2.0949 - val_accuracy: 0.8077
Epoch 535/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.0587e-05 -
accuracy: 1.0000 - val_loss: 2.0944 - val_accuracy: 0.8077
Epoch 536/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.0436e-06 -
accuracy: 1.0000 - val_loss: 2.0939 - val_accuracy: 0.8077
Epoch 537/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.4622e-05 -
accuracy: 1.0000 - val_loss: 2.0906 - val_accuracy: 0.8077
Epoch 538/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.4702e-05 -
accuracy: 1.0000 - val_loss: 2.0863 - val_accuracy: 0.8077
Epoch 539/1000
1/1 [==============================] - 0s 36ms/step - loss: 7.6019e-06 -
accuracy: 1.0000 - val_loss: 2.0811 - val_accuracy: 0.8077
Epoch 540/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.0039e-05 -
accuracy: 1.0000 - val_loss: 2.0828 - val_accuracy: 0.8077
Epoch 541/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.4202e-05 -
accuracy: 1.0000 - val_loss: 2.0882 - val_accuracy: 0.8077
Epoch 542/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.7439e-06 -
accuracy: 1.0000 - val_loss: 2.0948 - val_accuracy: 0.8077
Epoch 543/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.9727e-06 -
accuracy: 1.0000 - val_loss: 2.1016 - val_accuracy: 0.8077
Epoch 544/1000
1/1 [==============================] - 0s 40ms/step - loss: 5.4250e-06 -
accuracy: 1.0000 - val_loss: 2.1080 - val_accuracy: 0.8077
Epoch 545/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.1071e-05 -
accuracy: 1.0000 - val_loss: 2.1107 - val_accuracy: 0.8077
Epoch 546/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.0257e-06 -
accuracy: 1.0000 - val_loss: 2.1107 - val_accuracy: 0.8077
Epoch 547/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.1490e-05 -
accuracy: 1.0000 - val_loss: 2.1109 - val_accuracy: 0.8077
Epoch 548/1000
1/1 [==============================] - 0s 40ms/step - loss: 2.2583e-05 -
accuracy: 1.0000 - val_loss: 2.1124 - val_accuracy: 0.8077
Epoch 549/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 3.8213e-05 -
accuracy: 1.0000 - val_loss: 2.1091 - val_accuracy: 0.8077
Epoch 550/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.2019e-05 -
accuracy: 1.0000 - val_loss: 2.1050 - val_accuracy: 0.8077
Epoch 551/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.3850e-05 -
accuracy: 1.0000 - val_loss: 2.0995 - val_accuracy: 0.8077
Epoch 552/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3821e-05 -
accuracy: 1.0000 - val_loss: 2.0979 - val_accuracy: 0.8077
Epoch 553/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.2385e-05 -
accuracy: 1.0000 - val_loss: 2.0977 - val_accuracy: 0.8077
Epoch 554/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.3926e-05 -
accuracy: 1.0000 - val_loss: 2.0959 - val_accuracy: 0.8077
Epoch 555/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.5087e-06 -
accuracy: 1.0000 - val_loss: 2.0944 - val_accuracy: 0.8077
Epoch 556/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.6084e-05 -
accuracy: 1.0000 - val_loss: 2.0921 - val_accuracy: 0.8077
Epoch 557/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.2547e-05 -
accuracy: 1.0000 - val_loss: 2.0873 - val_accuracy: 0.8077
Epoch 558/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.0434e-05 -
accuracy: 1.0000 - val_loss: 2.0822 - val_accuracy: 0.8077
Epoch 559/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.3550e-06 -
accuracy: 1.0000 - val_loss: 2.0781 - val_accuracy: 0.8077
Epoch 560/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.6078e-05 -
accuracy: 1.0000 - val_loss: 2.0766 - val_accuracy: 0.8077
Epoch 561/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.5706e-05 -
accuracy: 1.0000 - val_loss: 2.0759 - val_accuracy: 0.8077
Epoch 562/1000
1/1 [==============================] - 0s 38ms/step - loss: 8.6253e-06 -
accuracy: 1.0000 - val_loss: 2.0744 - val_accuracy: 0.8077
Epoch 563/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.6421e-06 -
accuracy: 1.0000 - val_loss: 2.0717 - val_accuracy: 0.8077
Epoch 564/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.3445e-06 -
accuracy: 1.0000 - val_loss: 2.0678 - val_accuracy: 0.8077
Epoch 565/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 6.6421e-06 -
accuracy: 1.0000 - val_loss: 2.0649 - val_accuracy: 0.8077
Epoch 566/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.5070e-05 -
accuracy: 1.0000 - val_loss: 2.0581 - val_accuracy: 0.8077
Epoch 567/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.3311e-05 -
accuracy: 1.0000 - val_loss: 2.0537 - val_accuracy: 0.8077
Epoch 568/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.4492e-05 -
accuracy: 1.0000 - val_loss: 2.0528 - val_accuracy: 0.8077
Epoch 569/1000
1/1 [==============================] - 0s 39ms/step - loss: 2.3944e-05 -
accuracy: 1.0000 - val_loss: 2.0572 - val_accuracy: 0.8077
Epoch 570/1000
1/1 [==============================] - 0s 30ms/step - loss: 7.6115e-06 -
accuracy: 1.0000 - val_loss: 2.0621 - val_accuracy: 0.8077
Epoch 571/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.0078e-05 -
accuracy: 1.0000 - val_loss: 2.0667 - val_accuracy: 0.8077
Epoch 572/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.4875e-06 -
accuracy: 1.0000 - val_loss: 2.0691 - val_accuracy: 0.8077
Epoch 573/1000
1/1 [==============================] - 0s 39ms/step - loss: 6.8042e-06 -
accuracy: 1.0000 - val_loss: 2.0713 - val_accuracy: 0.8077
Epoch 574/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.4927e-05 -
accuracy: 1.0000 - val_loss: 2.0736 - val_accuracy: 0.8077
Epoch 575/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.7152e-06 -
accuracy: 1.0000 - val_loss: 2.0742 - val_accuracy: 0.8077
Epoch 576/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.9669e-05 -
accuracy: 1.0000 - val_loss: 2.0774 - val_accuracy: 0.8077
Epoch 577/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.5261e-05 -
accuracy: 1.0000 - val_loss: 2.0837 - val_accuracy: 0.8077
Epoch 578/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.7139e-05 -
accuracy: 1.0000 - val_loss: 2.0932 - val_accuracy: 0.8077
Epoch 579/1000
1/1 [==============================] - 0s 38ms/step - loss: 2.1903e-05 -
accuracy: 1.0000 - val_loss: 2.1008 - val_accuracy: 0.8077
Epoch 580/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.8986e-05 -
accuracy: 1.0000 - val_loss: 2.1092 - val_accuracy: 0.8077
Epoch 581/1000
```

```
1/1 [==============================] - 0s 37ms/step - loss: 5.3201e-06 -
accuracy: 1.0000 - val_loss: 2.1162 - val_accuracy: 0.8077
Epoch 582/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.0151e-05 -
accuracy: 1.0000 - val_loss: 2.1221 - val_accuracy: 0.8077
Epoch 583/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.1451e-05 -
accuracy: 1.0000 - val_loss: 2.1277 - val_accuracy: 0.8077
Epoch 584/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.1832e-05 -
accuracy: 1.0000 - val_loss: 2.1324 - val_accuracy: 0.8077
Epoch 585/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.1352e-05 -
accuracy: 1.0000 - val_loss: 2.1341 - val_accuracy: 0.8077
Epoch 586/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.4753e-05 -
accuracy: 1.0000 - val_loss: 2.1339 - val_accuracy: 0.8077
Epoch 587/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.2914e-06 -
accuracy: 1.0000 - val_loss: 2.1336 - val_accuracy: 0.8077
Epoch 588/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.1226e-05 -
accuracy: 1.0000 - val_loss: 2.1340 - val_accuracy: 0.8077
Epoch 589/1000
1/1 [==============================] - 0s 37ms/step - loss: 3.8486e-06 -
accuracy: 1.0000 - val_loss: 2.1332 - val_accuracy: 0.8077
Epoch 590/1000
1/1 [==============================] - 0s 46ms/step - loss: 4.8243e-06 -
accuracy: 1.0000 - val_loss: 2.1323 - val_accuracy: 0.8077
Epoch 591/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.5242e-05 -
accuracy: 1.0000 - val_loss: 2.1280 - val_accuracy: 0.8077
Epoch 592/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.5617e-05 -
accuracy: 1.0000 - val_loss: 2.1198 - val_accuracy: 0.8077
Epoch 593/1000
1/1 [==============================] - 0s 39ms/step - loss: 1.5760e-05 -
accuracy: 1.0000 - val_loss: 2.1107 - val_accuracy: 0.8077
Epoch 594/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.8414e-05 -
accuracy: 1.0000 - val_loss: 2.0969 - val_accuracy: 0.8077
Epoch 595/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.0631e-05 -
accuracy: 1.0000 - val_loss: 2.0810 - val_accuracy: 0.8077
Epoch 596/1000
1/1 [==============================] - 0s 38ms/step - loss: 2.8011e-05 -
accuracy: 1.0000 - val_loss: 2.0666 - val_accuracy: 0.8077
Epoch 597/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 1.7966e-05 -
accuracy: 1.0000 - val_loss: 2.0547 - val_accuracy: 0.8077
Epoch 598/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.2788e-06 -
accuracy: 1.0000 - val_loss: 2.0431 - val_accuracy: 0.8077
Epoch 599/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.8656e-06 -
accuracy: 1.0000 - val_loss: 2.0335 - val_accuracy: 0.8077
Epoch 600/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.3666e-05 -
accuracy: 1.0000 - val_loss: 2.0282 - val_accuracy: 0.8077
Epoch 601/1000
1/1 [==============================] - 0s 36ms/step - loss: 9.5342e-06 -
accuracy: 1.0000 - val_loss: 2.0245 - val_accuracy: 0.8077
Epoch 602/1000
1/1 [==============================] - 0s 33ms/step - loss: 8.2566e-06 -
accuracy: 1.0000 - val_loss: 2.0211 - val_accuracy: 0.8077
Epoch 603/1000
1/1 [==============================] - 0s 38ms/step - loss: 1.2045e-05 -
accuracy: 1.0000 - val_loss: 2.0214 - val_accuracy: 0.8077
Epoch 604/1000
1/1 [==============================] - 0s 30ms/step - loss: 5.3614e-06 -
accuracy: 1.0000 - val_loss: 2.0203 - val_accuracy: 0.8077
Epoch 605/1000
1/1 [==============================] - 0s 38ms/step - loss: 6.9250e-06 -
accuracy: 1.0000 - val_loss: 2.0206 - val_accuracy: 0.8077
Epoch 606/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.2481e-06 -
accuracy: 1.0000 - val_loss: 2.0216 - val_accuracy: 0.8077
Epoch 607/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.4166e-06 -
accuracy: 1.0000 - val_loss: 2.0254 - val_accuracy: 0.8077
Epoch 608/1000
1/1 [==============================] - 0s 34ms/step - loss: 7.9134e-06 -
accuracy: 1.0000 - val_loss: 2.0299 - val_accuracy: 0.8077
Epoch 609/1000
1/1 [==============================] - 0s 38ms/step - loss: 8.6062e-06 -
accuracy: 1.0000 - val_loss: 2.0368 - val_accuracy: 0.8077
Epoch 610/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.8583e-06 -
accuracy: 1.0000 - val_loss: 2.0433 - val_accuracy: 0.8077
Epoch 611/1000
1/1 [==============================] - 0s 38ms/step - loss: 8.5744e-06 -
accuracy: 1.0000 - val_loss: 2.0498 - val_accuracy: 0.8077
Epoch 612/1000
1/1 [==============================] - 0s 30ms/step - loss: 9.6105e-06 -
accuracy: 1.0000 - val_loss: 2.0560 - val_accuracy: 0.8077
Epoch 613/1000
```

```
1/1 [==============================] - 0s 40ms/step - loss: 8.6125e-06 -
accuracy: 1.0000 - val_loss: 2.0630 - val_accuracy: 0.8077
Epoch 614/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.2523e-06 -
accuracy: 1.0000 - val_loss: 2.0689 - val_accuracy: 0.8077
Epoch 615/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.0608e-05 -
accuracy: 1.0000 - val_loss: 2.0747 - val_accuracy: 0.8077
Epoch 616/1000
1/1 [==============================] - 0s 36ms/step - loss: 9.3308e-06 -
accuracy: 1.0000 - val_loss: 2.0824 - val_accuracy: 0.8077
Epoch 617/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.6078e-05 -
accuracy: 1.0000 - val_loss: 2.0916 - val_accuracy: 0.8077
Epoch 618/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.4276e-05 -
accuracy: 1.0000 - val_loss: 2.1014 - val_accuracy: 0.8077
Epoch 619/1000
1/1 [==============================] - 0s 34ms/step - loss: 7.1761e-06 -
accuracy: 1.0000 - val_loss: 2.1089 - val_accuracy: 0.8077
Epoch 620/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.6750e-06 -
accuracy: 1.0000 - val_loss: 2.1151 - val_accuracy: 0.8077
Epoch 621/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.4946e-05 -
accuracy: 1.0000 - val_loss: 2.1223 - val_accuracy: 0.8077
Epoch 622/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.1940e-06 -
accuracy: 1.0000 - val_loss: 2.1283 - val_accuracy: 0.8077
Epoch 623/1000
1/1 [==============================] - 0s 33ms/step - loss: 8.6920e-06 -
accuracy: 1.0000 - val_loss: 2.1346 - val_accuracy: 0.8077
Epoch 624/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.8815e-06 -
accuracy: 1.0000 - val_loss: 2.1407 - val_accuracy: 0.8077
Epoch 625/1000
1/1 [==============================] - 0s 38ms/step - loss: 9.2291e-06 -
accuracy: 1.0000 - val_loss: 2.1453 - val_accuracy: 0.8077
Epoch 626/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.0310e-06 -
accuracy: 1.0000 - val_loss: 2.1487 - val_accuracy: 0.8077
Epoch 627/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.5681e-06 -
accuracy: 1.0000 - val_loss: 2.1488 - val_accuracy: 0.8077
Epoch 628/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.4352e-05 -
accuracy: 1.0000 - val_loss: 2.1446 - val_accuracy: 0.8077
Epoch 629/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 1.2798e-05 -
accuracy: 1.0000 - val_loss: 2.1374 - val_accuracy: 0.8077
Epoch 630/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.5098e-06 -
accuracy: 1.0000 - val_loss: 2.1296 - val_accuracy: 0.8077
Epoch 631/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.8127e-06 -
accuracy: 1.0000 - val_loss: 2.1235 - val_accuracy: 0.8077
Epoch 632/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.2037e-06 -
accuracy: 1.0000 - val_loss: 2.1181 - val_accuracy: 0.8077
Epoch 633/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.5203e-06 -
accuracy: 1.0000 - val_loss: 2.1110 - val_accuracy: 0.8077
Epoch 634/1000
1/1 [==============================] - 0s 37ms/step - loss: 4.9864e-06 -
accuracy: 1.0000 - val_loss: 2.1056 - val_accuracy: 0.8077
Epoch 635/1000
1/1 [==============================] - 0s 33ms/step - loss: 8.7905e-06 -
accuracy: 1.0000 - val_loss: 2.0989 - val_accuracy: 0.8077
Epoch 636/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.5461e-05 -
accuracy: 1.0000 - val_loss: 2.0939 - val_accuracy: 0.8077
Epoch 637/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.9334e-06 -
accuracy: 1.0000 - val_loss: 2.0887 - val_accuracy: 0.8077
Epoch 638/1000
1/1 [==============================] - 0s 37ms/step - loss: 7.4748e-06 -
accuracy: 1.0000 - val_loss: 2.0821 - val_accuracy: 0.8077
Epoch 639/1000
1/1 [==============================] - 0s 31ms/step - loss: 8.9526e-06 -
accuracy: 1.0000 - val_loss: 2.0795 - val_accuracy: 0.8077
Epoch 640/1000
1/1 [==============================] - 0s 32ms/step - loss: 8.6920e-06 -
accuracy: 1.0000 - val_loss: 2.0755 - val_accuracy: 0.8077
Epoch 641/1000
1/1 [==============================] - 0s 37ms/step - loss: 8.9685e-06 -
accuracy: 1.0000 - val_loss: 2.0721 - val_accuracy: 0.8077
Epoch 642/1000
1/1 [==============================] - 0s 36ms/step - loss: 8.3392e-06 -
accuracy: 1.0000 - val_loss: 2.0694 - val_accuracy: 0.8077
Epoch 643/1000
1/1 [==============================] - 0s 32ms/step - loss: 8.0278e-06 -
accuracy: 1.0000 - val_loss: 2.0660 - val_accuracy: 0.8077
Epoch 644/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.7651e-06 -
accuracy: 1.0000 - val_loss: 2.0647 - val_accuracy: 0.8077
Epoch 645/1000
```

```
1/1 [==============================] - 0s 39ms/step - loss: 1.6783e-05 -
accuracy: 1.0000 - val_loss: 2.0631 - val_accuracy: 0.8077
Epoch 646/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0955e-05 -
accuracy: 1.0000 - val_loss: 2.0617 - val_accuracy: 0.8077
Epoch 647/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.3117e-06 -
accuracy: 1.0000 - val_loss: 2.0611 - val_accuracy: 0.8077
Epoch 648/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.2512e-05 -
accuracy: 1.0000 - val_loss: 2.0612 - val_accuracy: 0.8077
Epoch 649/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0179e-05 -
accuracy: 1.0000 - val_loss: 2.0629 - val_accuracy: 0.8077
Epoch 650/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.3785e-06 -
accuracy: 1.0000 - val_loss: 2.0664 - val_accuracy: 0.8077
Epoch 651/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.1292e-05 -
accuracy: 1.0000 - val_loss: 2.0706 - val_accuracy: 0.8077
Epoch 652/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.7110e-06 -
accuracy: 1.0000 - val_loss: 2.0747 - val_accuracy: 0.8077
Epoch 653/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.3794e-06 -
accuracy: 1.0000 - val_loss: 2.0777 - val_accuracy: 0.8077
Epoch 654/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.3008e-05 -
accuracy: 1.0000 - val_loss: 2.0812 - val_accuracy: 0.8077
Epoch 655/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.1814e-06 -
accuracy: 1.0000 - val_loss: 2.0831 - val_accuracy: 0.8077
Epoch 656/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.6825e-05 -
accuracy: 1.0000 - val_loss: 2.0846 - val_accuracy: 0.8077
Epoch 657/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.6008e-06 -
accuracy: 1.0000 - val_loss: 2.0857 - val_accuracy: 0.8077
Epoch 658/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.9324e-06 -
accuracy: 1.0000 - val_loss: 2.0883 - val_accuracy: 0.8077
Epoch 659/1000
1/1 [==============================] - 0s 38ms/step - loss: 8.5077e-06 -
accuracy: 1.0000 - val_loss: 2.0888 - val_accuracy: 0.8077
Epoch 660/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.4362e-05 -
accuracy: 1.0000 - val_loss: 2.0886 - val_accuracy: 0.8077
Epoch 661/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 8.7460e-06 -
accuracy: 1.0000 - val_loss: 2.0914 - val_accuracy: 0.8077
Epoch 662/1000
1/1 [==============================] - 0s 37ms/step - loss: 6.8964e-06 -
accuracy: 1.0000 - val_loss: 2.0921 - val_accuracy: 0.8077
Epoch 663/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.2528e-05 -
accuracy: 1.0000 - val_loss: 2.0942 - val_accuracy: 0.8077
Epoch 664/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.6739e-06 -
accuracy: 1.0000 - val_loss: 2.0947 - val_accuracy: 0.8077
Epoch 665/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.3435e-06 -
accuracy: 1.0000 - val_loss: 2.0977 - val_accuracy: 0.8077
Epoch 666/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.4737e-05 -
accuracy: 1.0000 - val_loss: 2.1001 - val_accuracy: 0.8077
Epoch 667/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.0531e-06 -
accuracy: 1.0000 - val_loss: 2.1033 - val_accuracy: 0.8077
Epoch 668/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.5998e-05 -
accuracy: 1.0000 - val_loss: 2.1084 - val_accuracy: 0.8077
Epoch 669/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.0076e-06 -
accuracy: 1.0000 - val_loss: 2.1111 - val_accuracy: 0.8077
Epoch 670/1000
1/1 [==============================] - 0s 38ms/step - loss: 5.1357e-06 -
accuracy: 1.0000 - val_loss: 2.1149 - val_accuracy: 0.8077
Epoch 671/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.0211e-05 -
accuracy: 1.0000 - val_loss: 2.1227 - val_accuracy: 0.8077
Epoch 672/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.6167e-06 -
accuracy: 1.0000 - val_loss: 2.1307 - val_accuracy: 0.8077
Epoch 673/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.4740e-05 -
accuracy: 1.0000 - val_loss: 2.1386 - val_accuracy: 0.8077
Epoch 674/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.6771e-06 -
accuracy: 1.0000 - val_loss: 2.1437 - val_accuracy: 0.8077
Epoch 675/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.2522e-05 -
accuracy: 1.0000 - val_loss: 2.1469 - val_accuracy: 0.8077
Epoch 676/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.0503e-05 -
accuracy: 1.0000 - val_loss: 2.1513 - val_accuracy: 0.8077
Epoch 677/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 3.9567e-06 -
accuracy: 1.0000 - val_loss: 2.1547 - val_accuracy: 0.8077
Epoch 678/1000
1/1 [==============================] - 0s 30ms/step - loss: 4.2745e-06 -
accuracy: 1.0000 - val_loss: 2.1586 - val_accuracy: 0.8077
Epoch 679/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.0849e-06 -
accuracy: 1.0000 - val_loss: 2.1611 - val_accuracy: 0.8077
Epoch 680/1000
1/1 [==============================] - 0s 31ms/step - loss: 9.7471e-06 -
accuracy: 1.0000 - val_loss: 2.1623 - val_accuracy: 0.8077
Epoch 681/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.5391e-05 -
accuracy: 1.0000 - val_loss: 2.1607 - val_accuracy: 0.8077
Epoch 682/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.9314e-06 -
accuracy: 1.0000 - val_loss: 2.1562 - val_accuracy: 0.8077
Epoch 683/1000
1/1 [==============================] - 0s 37ms/step - loss: 8.6888e-06 -
accuracy: 1.0000 - val_loss: 2.1560 - val_accuracy: 0.8077
Epoch 684/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.3942e-06 -
accuracy: 1.0000 - val_loss: 2.1560 - val_accuracy: 0.8077
Epoch 685/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.2172e-05 -
accuracy: 1.0000 - val_loss: 2.1599 - val_accuracy: 0.8077
Epoch 686/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.2458e-05 -
accuracy: 1.0000 - val_loss: 2.1586 - val_accuracy: 0.8077
Epoch 687/1000
1/1 [==============================] - 0s 36ms/step - loss: 7.5225e-06 -
accuracy: 1.0000 - val_loss: 2.1601 - val_accuracy: 0.8077
Epoch 688/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.2232e-05 -
accuracy: 1.0000 - val_loss: 2.1586 - val_accuracy: 0.8077
Epoch 689/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0507e-05 -
accuracy: 1.0000 - val_loss: 2.1539 - val_accuracy: 0.8077
Epoch 690/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.4049e-06 -
accuracy: 1.0000 - val_loss: 2.1489 - val_accuracy: 0.8077
Epoch 691/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.4652e-06 -
accuracy: 1.0000 - val_loss: 2.1447 - val_accuracy: 0.8077
Epoch 692/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.1489e-05 -
accuracy: 1.0000 - val_loss: 2.1406 - val_accuracy: 0.8077
Epoch 693/1000
```

```
1/1 [==============================] - 0s 36ms/step - loss: 4.6718e-06 -
accuracy: 1.0000 - val_loss: 2.1387 - val_accuracy: 0.8077
Epoch 694/1000
1/1 [==============================] - 0s 29ms/step - loss: 1.2353e-05 -
accuracy: 1.0000 - val_loss: 2.1351 - val_accuracy: 0.8077
Epoch 695/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.7586e-06 -
accuracy: 1.0000 - val_loss: 2.1296 - val_accuracy: 0.8077
Epoch 696/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.9155e-06 -
accuracy: 1.0000 - val_loss: 2.1231 - val_accuracy: 0.8077
Epoch 697/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.5182e-05 -
accuracy: 1.0000 - val_loss: 2.1191 - val_accuracy: 0.8077
Epoch 698/1000
1/1 [==============================] - 0s 29ms/step - loss: 4.0520e-06 -
accuracy: 1.0000 - val_loss: 2.1154 - val_accuracy: 0.8077
Epoch 699/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.0086e-06 -
accuracy: 1.0000 - val_loss: 2.1117 - val_accuracy: 0.8077
Epoch 700/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.8169e-06 -
accuracy: 1.0000 - val_loss: 2.1086 - val_accuracy: 0.8077
Epoch 701/1000
1/1 [==============================] - 0s 37ms/step - loss: 3.0732e-06 -
accuracy: 1.0000 - val_loss: 2.1067 - val_accuracy: 0.8077
Epoch 702/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.7903e-06 -
accuracy: 1.0000 - val_loss: 2.1060 - val_accuracy: 0.8077
Epoch 703/1000
1/1 [==============================] - 0s 28ms/step - loss: 6.3307e-06 -
accuracy: 1.0000 - val_loss: 2.1053 - val_accuracy: 0.8077
Epoch 704/1000
1/1 [==============================] - 0s 30ms/step - loss: 4.0965e-06 -
accuracy: 1.0000 - val_loss: 2.1061 - val_accuracy: 0.8077
Epoch 705/1000
1/1 [==============================] - 0s 32ms/step - loss: 8.0532e-06 -
accuracy: 1.0000 - val_loss: 2.1072 - val_accuracy: 0.8077
Epoch 706/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.2522e-06 -
accuracy: 1.0000 - val_loss: 2.1078 - val_accuracy: 0.8077
Epoch 707/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.0186e-05 -
accuracy: 1.0000 - val_loss: 2.1109 - val_accuracy: 0.8077
Epoch 708/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.0266e-06 -
accuracy: 1.0000 - val_loss: 2.1135 - val_accuracy: 0.8077
Epoch 709/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 9.3435e-06 -
accuracy: 1.0000 - val_loss: 2.1134 - val_accuracy: 0.8077
Epoch 710/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.1178e-06 -
accuracy: 1.0000 - val_loss: 2.1130 - val_accuracy: 0.8077
Epoch 711/1000
1/1 [==============================] - 0s 30ms/step - loss: 8.3011e-06 -
accuracy: 1.0000 - val_loss: 2.1106 - val_accuracy: 0.8077
Epoch 712/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.6876e-06 -
accuracy: 1.0000 - val_loss: 2.1090 - val_accuracy: 0.8077
Epoch 713/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.7639e-06 -
accuracy: 1.0000 - val_loss: 2.1062 - val_accuracy: 0.8077
Epoch 714/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.6335e-06 -
accuracy: 1.0000 - val_loss: 2.1043 - val_accuracy: 0.8077
Epoch 715/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.6707e-06 -
accuracy: 1.0000 - val_loss: 2.1037 - val_accuracy: 0.8077
Epoch 716/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.0561e-05 -
accuracy: 1.0000 - val_loss: 2.1045 - val_accuracy: 0.8077
Epoch 717/1000
1/1 [==============================] - 0s 29ms/step - loss: 4.4556e-06 -
accuracy: 1.0000 - val_loss: 2.1064 - val_accuracy: 0.8077
Epoch 718/1000
1/1 [==============================] - 0s 32ms/step - loss: 8.6348e-06 -
accuracy: 1.0000 - val_loss: 2.1111 - val_accuracy: 0.8077
Epoch 719/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.1562e-05 -
accuracy: 1.0000 - val_loss: 2.1140 - val_accuracy: 0.8077
Epoch 720/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.7259e-06 -
accuracy: 1.0000 - val_loss: 2.1153 - val_accuracy: 0.8077
Epoch 721/1000
1/1 [==============================] - 0s 29ms/step - loss: 6.2068e-06 -
accuracy: 1.0000 - val_loss: 2.1190 - val_accuracy: 0.8077
Epoch 722/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.7767e-06 -
accuracy: 1.0000 - val_loss: 2.1198 - val_accuracy: 0.8077
Epoch 723/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.2629e-06 -
accuracy: 1.0000 - val_loss: 2.1225 - val_accuracy: 0.8077
Epoch 724/1000
1/1 [==============================] - 0s 30ms/step - loss: 8.1962e-06 -
accuracy: 1.0000 - val_loss: 2.1240 - val_accuracy: 0.8077
Epoch 725/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 7.3191e-06 -
accuracy: 1.0000 - val_loss: 2.1232 - val_accuracy: 0.8077
Epoch 726/1000
1/1 [==============================] - 0s 29ms/step - loss: 1.2744e-05 -
accuracy: 1.0000 - val_loss: 2.1240 - val_accuracy: 0.8077
Epoch 727/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.7014e-06 -
accuracy: 1.0000 - val_loss: 2.1254 - val_accuracy: 0.8077
Epoch 728/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.0393e-06 -
accuracy: 1.0000 - val_loss: 2.1265 - val_accuracy: 0.8077
Epoch 729/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.2597e-06 -
accuracy: 1.0000 - val_loss: 2.1266 - val_accuracy: 0.8077
Epoch 730/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.7491e-06 -
accuracy: 1.0000 - val_loss: 2.1276 - val_accuracy: 0.8077
Epoch 731/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.6612e-06 -
accuracy: 1.0000 - val_loss: 2.1310 - val_accuracy: 0.8077
Epoch 732/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.0310e-05 -
accuracy: 1.0000 - val_loss: 2.1344 - val_accuracy: 0.8077
Epoch 733/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.3360e-06 -
accuracy: 1.0000 - val_loss: 2.1387 - val_accuracy: 0.8077
Epoch 734/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.2449e-06 -
accuracy: 1.0000 - val_loss: 2.1443 - val_accuracy: 0.8077
Epoch 735/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.1654e-06 -
accuracy: 1.0000 - val_loss: 2.1513 - val_accuracy: 0.8077
Epoch 736/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.8232e-06 -
accuracy: 1.0000 - val_loss: 2.1591 - val_accuracy: 0.8077
Epoch 737/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.2385e-06 -
accuracy: 1.0000 - val_loss: 2.1653 - val_accuracy: 0.8077
Epoch 738/1000
1/1 [==============================] - 0s 29ms/step - loss: 8.7206e-06 -
accuracy: 1.0000 - val_loss: 2.1744 - val_accuracy: 0.8077
Epoch 739/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.7046e-06 -
accuracy: 1.0000 - val_loss: 2.1842 - val_accuracy: 0.8077
Epoch 740/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.0002e-06 -
accuracy: 1.0000 - val_loss: 2.1948 - val_accuracy: 0.8077
Epoch 741/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 7.7481e-06 -
accuracy: 1.0000 - val_loss: 2.2018 - val_accuracy: 0.8077
Epoch 742/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.5933e-06 -
accuracy: 1.0000 - val_loss: 2.2075 - val_accuracy: 0.8077
Epoch 743/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.4874e-06 -
accuracy: 1.0000 - val_loss: 2.2137 - val_accuracy: 0.8077
Epoch 744/1000
1/1 [==============================] - 0s 31ms/step - loss: 5.3836e-06 -
accuracy: 1.0000 - val_loss: 2.2209 - val_accuracy: 0.8077
Epoch 745/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.7418e-06 -
accuracy: 1.0000 - val_loss: 2.2226 - val_accuracy: 0.8077
Epoch 746/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.9864e-06 -
accuracy: 1.0000 - val_loss: 2.2211 - val_accuracy: 0.8077
Epoch 747/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.9535e-06 -
accuracy: 1.0000 - val_loss: 2.2177 - val_accuracy: 0.8077
Epoch 748/1000
1/1 [==============================] - 0s 38ms/step - loss: 4.6304e-06 -
accuracy: 1.0000 - val_loss: 2.2140 - val_accuracy: 0.8077
Epoch 749/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.9091e-06 -
accuracy: 1.0000 - val_loss: 2.2104 - val_accuracy: 0.8077
Epoch 750/1000
1/1 [==============================] - 0s 37ms/step - loss: 8.7142e-06 -
accuracy: 1.0000 - val_loss: 2.2078 - val_accuracy: 0.8077
Epoch 751/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.4748e-06 -
accuracy: 1.0000 - val_loss: 2.2072 - val_accuracy: 0.8077
Epoch 752/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.8095e-06 -
accuracy: 1.0000 - val_loss: 2.2054 - val_accuracy: 0.8077
Epoch 753/1000
1/1 [==============================] - 0s 39ms/step - loss: 6.8614e-06 -
accuracy: 1.0000 - val_loss: 2.2037 - val_accuracy: 0.8077
Epoch 754/1000
1/1 [==============================] - 0s 37ms/step - loss: 5.6252e-06 -
accuracy: 1.0000 - val_loss: 2.2026 - val_accuracy: 0.8077
Epoch 755/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.0012e-06 -
accuracy: 1.0000 - val_loss: 2.2009 - val_accuracy: 0.8077
Epoch 756/1000
1/1 [==============================] - 0s 37ms/step - loss: 6.7089e-06 -
accuracy: 1.0000 - val_loss: 2.1974 - val_accuracy: 0.8077
Epoch 757/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 6.2290e-06 -
accuracy: 1.0000 - val_loss: 2.1956 - val_accuracy: 0.8077
Epoch 758/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.9535e-06 -
accuracy: 1.0000 - val_loss: 2.1941 - val_accuracy: 0.8077
Epoch 759/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.3550e-06 -
accuracy: 1.0000 - val_loss: 2.1921 - val_accuracy: 0.8077
Epoch 760/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.2871e-05 -
accuracy: 1.0000 - val_loss: 2.1906 - val_accuracy: 0.8077
Epoch 761/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.8698e-06 -
accuracy: 1.0000 - val_loss: 2.1882 - val_accuracy: 0.8077
Epoch 762/1000
1/1 [==============================] - 0s 31ms/step - loss: 9.9823e-06 -
accuracy: 1.0000 - val_loss: 2.1835 - val_accuracy: 0.8077
Epoch 763/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.0879e-05 -
accuracy: 1.0000 - val_loss: 2.1780 - val_accuracy: 0.8077
Epoch 764/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.5690e-06 -
accuracy: 1.0000 - val_loss: 2.1728 - val_accuracy: 0.8077
Epoch 765/1000
1/1 [==============================] - 0s 32ms/step - loss: 8.5013e-06 -
accuracy: 1.0000 - val_loss: 2.1665 - val_accuracy: 0.8077
Epoch 766/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.9037e-06 -
accuracy: 1.0000 - val_loss: 2.1602 - val_accuracy: 0.8077
Epoch 767/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.1950e-06 -
accuracy: 1.0000 - val_loss: 2.1557 - val_accuracy: 0.8077
Epoch 768/1000
1/1 [==============================] - 0s 31ms/step - loss: 5.0468e-06 -
accuracy: 1.0000 - val_loss: 2.1535 - val_accuracy: 0.8077
Epoch 769/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.3423e-06 -
accuracy: 1.0000 - val_loss: 2.1535 - val_accuracy: 0.8077
Epoch 770/1000
1/1 [==============================] - 0s 30ms/step - loss: 9.3880e-06 -
accuracy: 1.0000 - val_loss: 2.1506 - val_accuracy: 0.8077
Epoch 771/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.7586e-06 -
accuracy: 1.0000 - val_loss: 2.1492 - val_accuracy: 0.8077
Epoch 772/1000
1/1 [==============================] - 0s 29ms/step - loss: 6.2735e-06 -
accuracy: 1.0000 - val_loss: 2.1459 - val_accuracy: 0.8077
Epoch 773/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 3.8995e-06 -
accuracy: 1.0000 - val_loss: 2.1442 - val_accuracy: 0.8077
Epoch 774/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.1050e-06 -
accuracy: 1.0000 - val_loss: 2.1435 - val_accuracy: 0.8077
Epoch 775/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.5065e-06 -
accuracy: 1.0000 - val_loss: 2.1428 - val_accuracy: 0.8077
Epoch 776/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.0923e-06 -
accuracy: 1.0000 - val_loss: 2.1412 - val_accuracy: 0.8077
Epoch 777/1000
1/1 [==============================] - 0s 34ms/step - loss: 9.4611e-06 -
accuracy: 1.0000 - val_loss: 2.1438 - val_accuracy: 0.8077
Epoch 778/1000
1/1 [==============================] - 0s 29ms/step - loss: 4.8974e-06 -
accuracy: 1.0000 - val_loss: 2.1468 - val_accuracy: 0.8077
Epoch 779/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.7554e-06 -
accuracy: 1.0000 - val_loss: 2.1494 - val_accuracy: 0.8077
Epoch 780/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.2003e-06 -
accuracy: 1.0000 - val_loss: 2.1523 - val_accuracy: 0.8077
Epoch 781/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.4313e-06 -
accuracy: 1.0000 - val_loss: 2.1535 - val_accuracy: 0.8077
Epoch 782/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.6707e-06 -
accuracy: 1.0000 - val_loss: 2.1548 - val_accuracy: 0.8077
Epoch 783/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.2989e-06 -
accuracy: 1.0000 - val_loss: 2.1551 - val_accuracy: 0.8077
Epoch 784/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.1505e-06 -
accuracy: 1.0000 - val_loss: 2.1567 - val_accuracy: 0.8077
Epoch 785/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.8253e-06 -
accuracy: 1.0000 - val_loss: 2.1568 - val_accuracy: 0.8077
Epoch 786/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.6156e-06 -
accuracy: 1.0000 - val_loss: 2.1581 - val_accuracy: 0.8077
Epoch 787/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.3126e-06 -
accuracy: 1.0000 - val_loss: 2.1586 - val_accuracy: 0.8077
Epoch 788/1000
1/1 [==============================] - 0s 36ms/step - loss: 8.1676e-06 -
accuracy: 1.0000 - val_loss: 2.1606 - val_accuracy: 0.8077
Epoch 789/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 3.8391e-06 -
accuracy: 1.0000 - val_loss: 2.1640 - val_accuracy: 0.8077
Epoch 790/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.4229e-06 -
accuracy: 1.0000 - val_loss: 2.1649 - val_accuracy: 0.8077
Epoch 791/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.6993e-06 -
accuracy: 1.0000 - val_loss: 2.1649 - val_accuracy: 0.8077
Epoch 792/1000
1/1 [==============================] - 0s 37ms/step - loss: 4.6813e-06 -
accuracy: 1.0000 - val_loss: 2.1659 - val_accuracy: 0.8077
Epoch 793/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.6018e-06 -
accuracy: 1.0000 - val_loss: 2.1646 - val_accuracy: 0.8077
Epoch 794/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.3147e-06 -
accuracy: 1.0000 - val_loss: 2.1628 - val_accuracy: 0.8077
Epoch 795/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.7617e-06 -
accuracy: 1.0000 - val_loss: 2.1610 - val_accuracy: 0.8077
Epoch 796/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.6791e-06 -
accuracy: 1.0000 - val_loss: 2.1595 - val_accuracy: 0.8077
Epoch 797/1000
1/1 [==============================] - 0s 31ms/step - loss: 8.8922e-06 -
accuracy: 1.0000 - val_loss: 2.1593 - val_accuracy: 0.8077
Epoch 798/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.1601e-06 -
accuracy: 1.0000 - val_loss: 2.1609 - val_accuracy: 0.8077
Epoch 799/1000
1/1 [==============================] - 0s 31ms/step - loss: 9.7662e-06 -
accuracy: 1.0000 - val_loss: 2.1594 - val_accuracy: 0.8077
Epoch 800/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.0202e-06 -
accuracy: 1.0000 - val_loss: 2.1570 - val_accuracy: 0.8077
Epoch 801/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.1229e-06 -
accuracy: 1.0000 - val_loss: 2.1549 - val_accuracy: 0.8077
Epoch 802/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.8010e-06 -
accuracy: 1.0000 - val_loss: 2.1513 - val_accuracy: 0.8077
Epoch 803/1000
1/1 [==============================] - 0s 28ms/step - loss: 4.6622e-06 -
accuracy: 1.0000 - val_loss: 2.1465 - val_accuracy: 0.8077
Epoch 804/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.2936e-06 -
accuracy: 1.0000 - val_loss: 2.1418 - val_accuracy: 0.8077
Epoch 805/1000
```

```
1/1 [==============================] - 0s 32ms/step - loss: 6.0097e-06 -
accuracy: 1.0000 - val_loss: 2.1403 - val_accuracy: 0.8077
Epoch 806/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.3910e-06 -
accuracy: 1.0000 - val_loss: 2.1405 - val_accuracy: 0.8077
Epoch 807/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.4959e-06 -
accuracy: 1.0000 - val_loss: 2.1435 - val_accuracy: 0.8077
Epoch 808/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.1051e-06 -
accuracy: 1.0000 - val_loss: 2.1469 - val_accuracy: 0.8077
Epoch 809/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.0267e-06 -
accuracy: 1.0000 - val_loss: 2.1527 - val_accuracy: 0.8077
Epoch 810/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.6940e-06 -
accuracy: 1.0000 - val_loss: 2.1588 - val_accuracy: 0.8077
Epoch 811/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.5976e-06 -
accuracy: 1.0000 - val_loss: 2.1631 - val_accuracy: 0.8077
Epoch 812/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.4789e-06 -
accuracy: 1.0000 - val_loss: 2.1660 - val_accuracy: 0.8077
Epoch 813/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.6093e-06 -
accuracy: 1.0000 - val_loss: 2.1713 - val_accuracy: 0.8077
Epoch 814/1000
1/1 [==============================] - 0s 30ms/step - loss: 5.4059e-06 -
accuracy: 1.0000 - val_loss: 2.1768 - val_accuracy: 0.8077
Epoch 815/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.9165e-06 -
accuracy: 1.0000 - val_loss: 2.1838 - val_accuracy: 0.8077
Epoch 816/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.9207e-06 -
accuracy: 1.0000 - val_loss: 2.1911 - val_accuracy: 0.8077
Epoch 817/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.4981e-06 -
accuracy: 1.0000 - val_loss: 2.1951 - val_accuracy: 0.8077
Epoch 818/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.7565e-06 -
accuracy: 1.0000 - val_loss: 2.1983 - val_accuracy: 0.8077
Epoch 819/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.8486e-06 -
accuracy: 1.0000 - val_loss: 2.2027 - val_accuracy: 0.8077
Epoch 820/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.1971e-06 -
accuracy: 1.0000 - val_loss: 2.2069 - val_accuracy: 0.8077
Epoch 821/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 5.1898e-06 -
accuracy: 1.0000 - val_loss: 2.2095 - val_accuracy: 0.8077
Epoch 822/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.2257e-06 -
accuracy: 1.0000 - val_loss: 2.2095 - val_accuracy: 0.8077
Epoch 823/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.2015e-06 -
accuracy: 1.0000 - val_loss: 2.2079 - val_accuracy: 0.8077
Epoch 824/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.5648e-06 -
accuracy: 1.0000 - val_loss: 2.2073 - val_accuracy: 0.8077
Epoch 825/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.7014e-06 -
accuracy: 1.0000 - val_loss: 2.2050 - val_accuracy: 0.8077
Epoch 826/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.9959e-06 -
accuracy: 1.0000 - val_loss: 2.2033 - val_accuracy: 0.8077
Epoch 827/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.5224e-06 -
accuracy: 1.0000 - val_loss: 2.2013 - val_accuracy: 0.8077
Epoch 828/1000
1/1 [==============================] - 0s 38ms/step - loss: 4.0075e-06 -
accuracy: 1.0000 - val_loss: 2.1981 - val_accuracy: 0.8077
Epoch 829/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.8583e-06 -
accuracy: 1.0000 - val_loss: 2.1952 - val_accuracy: 0.8077
Epoch 830/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.6219e-06 -
accuracy: 1.0000 - val_loss: 2.1925 - val_accuracy: 0.8077
Epoch 831/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.3815e-06 -
accuracy: 1.0000 - val_loss: 2.1909 - val_accuracy: 0.8077
Epoch 832/1000
1/1 [==============================] - 0s 39ms/step - loss: 4.6304e-06 -
accuracy: 1.0000 - val_loss: 2.1885 - val_accuracy: 0.8077
Epoch 833/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.3635e-06 -
accuracy: 1.0000 - val_loss: 2.1828 - val_accuracy: 0.8077
Epoch 834/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.9747e-06 -
accuracy: 1.0000 - val_loss: 2.1786 - val_accuracy: 0.8077
Epoch 835/1000
1/1 [==============================] - 0s 30ms/step - loss: 4.5033e-06 -
accuracy: 1.0000 - val_loss: 2.1760 - val_accuracy: 0.8077
Epoch 836/1000
1/1 [==============================] - 0s 40ms/step - loss: 2.9651e-06 -
accuracy: 1.0000 - val_loss: 2.1725 - val_accuracy: 0.8077
Epoch 837/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 2.6473e-06 -
accuracy: 1.0000 - val_loss: 2.1695 - val_accuracy: 0.8077
Epoch 838/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.6516e-06 -
accuracy: 1.0000 - val_loss: 2.1668 - val_accuracy: 0.8077
Epoch 839/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.4408e-06 -
accuracy: 1.0000 - val_loss: 2.1647 - val_accuracy: 0.8077
Epoch 840/1000
1/1 [==============================] - 0s 38ms/step - loss: 2.3168e-06 -
accuracy: 1.0000 - val_loss: 2.1621 - val_accuracy: 0.8077
Epoch 841/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.3339e-06 -
accuracy: 1.0000 - val_loss: 2.1621 - val_accuracy: 0.8077
Epoch 842/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.4132e-06 -
accuracy: 1.0000 - val_loss: 2.1613 - val_accuracy: 0.8077
Epoch 843/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.9386e-06 -
accuracy: 1.0000 - val_loss: 2.1612 - val_accuracy: 0.8077
Epoch 844/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.8667e-06 -
accuracy: 1.0000 - val_loss: 2.1594 - val_accuracy: 0.8077
Epoch 845/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.6378e-06 -
accuracy: 1.0000 - val_loss: 2.1597 - val_accuracy: 0.8077
Epoch 846/1000
1/1 [==============================] - 0s 30ms/step - loss: 5.3741e-06 -
accuracy: 1.0000 - val_loss: 2.1636 - val_accuracy: 0.8077
Epoch 847/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.3031e-06 -
accuracy: 1.0000 - val_loss: 2.1670 - val_accuracy: 0.8077
Epoch 848/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.5395e-06 -
accuracy: 1.0000 - val_loss: 2.1724 - val_accuracy: 0.8077
Epoch 849/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.4207e-06 -
accuracy: 1.0000 - val_loss: 2.1771 - val_accuracy: 0.8077
Epoch 850/1000
1/1 [==============================] - 0s 37ms/step - loss: 6.3116e-06 -
accuracy: 1.0000 - val_loss: 2.1844 - val_accuracy: 0.8077
Epoch 851/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.1273e-06 -
accuracy: 1.0000 - val_loss: 2.1919 - val_accuracy: 0.8077
Epoch 852/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.0647e-06 -
accuracy: 1.0000 - val_loss: 2.1990 - val_accuracy: 0.8077
Epoch 853/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 5.8159e-06 -
accuracy: 1.0000 - val_loss: 2.2081 - val_accuracy: 0.8077
Epoch 854/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.3878e-06 -
accuracy: 1.0000 - val_loss: 2.2154 - val_accuracy: 0.8077
Epoch 855/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.2745e-06 -
accuracy: 1.0000 - val_loss: 2.2193 - val_accuracy: 0.8077
Epoch 856/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.0446e-06 -
accuracy: 1.0000 - val_loss: 2.2201 - val_accuracy: 0.8077
Epoch 857/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.0574e-06 -
accuracy: 1.0000 - val_loss: 2.2194 - val_accuracy: 0.8077
Epoch 858/1000
1/1 [==============================] - 0s 38ms/step - loss: 2.5329e-06 -
accuracy: 1.0000 - val_loss: 2.2204 - val_accuracy: 0.8077
Epoch 859/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.2289e-06 -
accuracy: 1.0000 - val_loss: 2.2211 - val_accuracy: 0.8077
Epoch 860/1000
1/1 [==============================] - 0s 40ms/step - loss: 4.9387e-06 -
accuracy: 1.0000 - val_loss: 2.2181 - val_accuracy: 0.8077
Epoch 861/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.9016e-06 -
accuracy: 1.0000 - val_loss: 2.2153 - val_accuracy: 0.8077
Epoch 862/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.1696e-06 -
accuracy: 1.0000 - val_loss: 2.2123 - val_accuracy: 0.8077
Epoch 863/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.5901e-06 -
accuracy: 1.0000 - val_loss: 2.2075 - val_accuracy: 0.8077
Epoch 864/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.6759e-06 -
accuracy: 1.0000 - val_loss: 2.2038 - val_accuracy: 0.8077
Epoch 865/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.7596e-06 -
accuracy: 1.0000 - val_loss: 2.2009 - val_accuracy: 0.8077
Epoch 866/1000
1/1 [==============================] - 0s 33ms/step - loss: 8.2439e-06 -
accuracy: 1.0000 - val_loss: 2.2024 - val_accuracy: 0.8077
Epoch 867/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.6421e-06 -
accuracy: 1.0000 - val_loss: 2.2058 - val_accuracy: 0.8077
Epoch 868/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.4355e-06 -
accuracy: 1.0000 - val_loss: 2.2112 - val_accuracy: 0.8077
Epoch 869/1000
```

```
1/1 [==============================] - 0s 40ms/step - loss: 4.6431e-06 -
accuracy: 1.0000 - val_loss: 2.2159 - val_accuracy: 0.8077
Epoch 870/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.1802e-06 -
accuracy: 1.0000 - val_loss: 2.2177 - val_accuracy: 0.8077
Epoch 871/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.7935e-06 -
accuracy: 1.0000 - val_loss: 2.2199 - val_accuracy: 0.8077
Epoch 872/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.1601e-06 -
accuracy: 1.0000 - val_loss: 2.2183 - val_accuracy: 0.8077
Epoch 873/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.6876e-06 -
accuracy: 1.0000 - val_loss: 2.2134 - val_accuracy: 0.8077
Epoch 874/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.9513e-06 -
accuracy: 1.0000 - val_loss: 2.2094 - val_accuracy: 0.8077
Epoch 875/1000
1/1 [==============================] - 0s 31ms/step - loss: 5.6697e-06 -
accuracy: 1.0000 - val_loss: 2.2048 - val_accuracy: 0.8077
Epoch 876/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.2989e-06 -
accuracy: 1.0000 - val_loss: 2.2025 - val_accuracy: 0.8077
Epoch 877/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.0161e-06 -
accuracy: 1.0000 - val_loss: 2.2005 - val_accuracy: 0.8077
Epoch 878/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.9005e-06 -
accuracy: 1.0000 - val_loss: 2.1990 - val_accuracy: 0.8077
Epoch 879/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.5266e-06 -
accuracy: 1.0000 - val_loss: 2.1988 - val_accuracy: 0.8077
Epoch 880/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.8836e-06 -
accuracy: 1.0000 - val_loss: 2.1990 - val_accuracy: 0.8077
Epoch 881/1000
1/1 [==============================] - 0s 39ms/step - loss: 4.3794e-06 -
accuracy: 1.0000 - val_loss: 2.2017 - val_accuracy: 0.8077
Epoch 882/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.0085e-06 -
accuracy: 1.0000 - val_loss: 2.2044 - val_accuracy: 0.8077
Epoch 883/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.9705e-06 -
accuracy: 1.0000 - val_loss: 2.2107 - val_accuracy: 0.8077
Epoch 884/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.5118e-06 -
accuracy: 1.0000 - val_loss: 2.2162 - val_accuracy: 0.8077
Epoch 885/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 6.6771e-06 -
accuracy: 1.0000 - val_loss: 2.2241 - val_accuracy: 0.8077
Epoch 886/1000
1/1 [==============================] - 0s 38ms/step - loss: 4.0806e-06 -
accuracy: 1.0000 - val_loss: 2.2281 - val_accuracy: 0.8077
Epoch 887/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.6855e-06 -
accuracy: 1.0000 - val_loss: 2.2318 - val_accuracy: 0.8077
Epoch 888/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.8709e-06 -
accuracy: 1.0000 - val_loss: 2.2353 - val_accuracy: 0.8077
Epoch 889/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.1633e-06 -
accuracy: 1.0000 - val_loss: 2.2343 - val_accuracy: 0.8077
Epoch 890/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.6548e-06 -
accuracy: 1.0000 - val_loss: 2.2317 - val_accuracy: 0.8077
Epoch 891/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.7142e-06 -
accuracy: 1.0000 - val_loss: 2.2228 - val_accuracy: 0.8077
Epoch 892/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.3095e-06 -
accuracy: 1.0000 - val_loss: 2.2154 - val_accuracy: 0.8077
Epoch 893/1000
1/1 [==============================] - 0s 39ms/step - loss: 4.0107e-06 -
accuracy: 1.0000 - val_loss: 2.2078 - val_accuracy: 0.8077
Epoch 894/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.9958e-06 -
accuracy: 1.0000 - val_loss: 2.2006 - val_accuracy: 0.8077
Epoch 895/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.6749e-06 -
accuracy: 1.0000 - val_loss: 2.1953 - val_accuracy: 0.8077
Epoch 896/1000
1/1 [==============================] - 0s 34ms/step - loss: 7.7862e-07 -
accuracy: 1.0000 - val_loss: 2.1905 - val_accuracy: 0.8077
Epoch 897/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.2014e-06 -
accuracy: 1.0000 - val_loss: 2.1845 - val_accuracy: 0.8077
Epoch 898/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.8179e-06 -
accuracy: 1.0000 - val_loss: 2.1783 - val_accuracy: 0.8077
Epoch 899/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.5477e-06 -
accuracy: 1.0000 - val_loss: 2.1733 - val_accuracy: 0.8077
Epoch 900/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.7724e-06 -
accuracy: 1.0000 - val_loss: 2.1683 - val_accuracy: 0.8077
Epoch 901/1000
```

```
1/1 [==============================] - 0s 32ms/step - loss: 6.6072e-06 -
accuracy: 1.0000 - val_loss: 2.1617 - val_accuracy: 0.8077
Epoch 902/1000
1/1 [==============================] - 0s 38ms/step - loss: 2.9111e-06 -
accuracy: 1.0000 - val_loss: 2.1579 - val_accuracy: 0.8077
Epoch 903/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.9313e-06 -
accuracy: 1.0000 - val_loss: 2.1551 - val_accuracy: 0.8077
Epoch 904/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.9704e-06 -
accuracy: 1.0000 - val_loss: 2.1530 - val_accuracy: 0.8077
Epoch 905/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.5000e-06 -
accuracy: 1.0000 - val_loss: 2.1502 - val_accuracy: 0.8077
Epoch 906/1000
1/1 [==============================] - 0s 37ms/step - loss: 5.5457e-06 -
accuracy: 1.0000 - val_loss: 2.1498 - val_accuracy: 0.8077
Epoch 907/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.9885e-06 -
accuracy: 1.0000 - val_loss: 2.1518 - val_accuracy: 0.8077
Epoch 908/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.3581e-06 -
accuracy: 1.0000 - val_loss: 2.1552 - val_accuracy: 0.8077
Epoch 909/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.2056e-06 -
accuracy: 1.0000 - val_loss: 2.1590 - val_accuracy: 0.8077
Epoch 910/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.2469e-06 -
accuracy: 1.0000 - val_loss: 2.1633 - val_accuracy: 0.8077
Epoch 911/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.1071e-06 -
accuracy: 1.0000 - val_loss: 2.1665 - val_accuracy: 0.8077
Epoch 912/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.9683e-06 -
accuracy: 1.0000 - val_loss: 2.1701 - val_accuracy: 0.8077
Epoch 913/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.4969e-06 -
accuracy: 1.0000 - val_loss: 2.1735 - val_accuracy: 0.8077
Epoch 914/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.2257e-06 -
accuracy: 1.0000 - val_loss: 2.1758 - val_accuracy: 0.8077
Epoch 915/1000
1/1 [==============================] - 0s 40ms/step - loss: 2.6028e-06 -
accuracy: 1.0000 - val_loss: 2.1788 - val_accuracy: 0.8077
Epoch 916/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.6780e-06 -
accuracy: 1.0000 - val_loss: 2.1814 - val_accuracy: 0.8077
Epoch 917/1000
```

```
1/1 [==============================] - 0s 46ms/step - loss: 4.6845e-06 -
accuracy: 1.0000 - val_loss: 2.1810 - val_accuracy: 0.8077
Epoch 918/1000
1/1 [==============================] - 0s 41ms/step - loss: 1.7162e-06 -
accuracy: 1.0000 - val_loss: 2.1800 - val_accuracy: 0.8077
Epoch 919/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.2321e-06 -
accuracy: 1.0000 - val_loss: 2.1800 - val_accuracy: 0.8077
Epoch 920/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.4471e-06 -
accuracy: 1.0000 - val_loss: 2.1786 - val_accuracy: 0.8077
Epoch 921/1000
1/1 [==============================] - 0s 38ms/step - loss: 3.5404e-06 -
accuracy: 1.0000 - val_loss: 2.1786 - val_accuracy: 0.8077
Epoch 922/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.0213e-06 -
accuracy: 1.0000 - val_loss: 2.1774 - val_accuracy: 0.8077
Epoch 923/1000
1/1 [==============================] - 0s 31ms/step - loss: 5.3042e-06 -
accuracy: 1.0000 - val_loss: 2.1757 - val_accuracy: 0.8077
Epoch 924/1000
1/1 [==============================] - 0s 38ms/step - loss: 2.2914e-06 -
accuracy: 1.0000 - val_loss: 2.1737 - val_accuracy: 0.8077
Epoch 925/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.7914e-06 -
accuracy: 1.0000 - val_loss: 2.1734 - val_accuracy: 0.8077
Epoch 926/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.7024e-06 -
accuracy: 1.0000 - val_loss: 2.1751 - val_accuracy: 0.8077
Epoch 927/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.2384e-06 -
accuracy: 1.0000 - val_loss: 2.1782 - val_accuracy: 0.8077
Epoch 928/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.2119e-06 -
accuracy: 1.0000 - val_loss: 2.1813 - val_accuracy: 0.8077
Epoch 929/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.9440e-06 -
accuracy: 1.0000 - val_loss: 2.1833 - val_accuracy: 0.8077
Epoch 930/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.1209e-06 -
accuracy: 1.0000 - val_loss: 2.1824 - val_accuracy: 0.8077
Epoch 931/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.6399e-06 -
accuracy: 1.0000 - val_loss: 2.1800 - val_accuracy: 0.8077
Epoch 932/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.9916e-06 -
accuracy: 1.0000 - val_loss: 2.1772 - val_accuracy: 0.8077
Epoch 933/1000
```

```
1/1 [==============================] - 0s 32ms/step - loss: 4.1601e-06 -
accuracy: 1.0000 - val_loss: 2.1777 - val_accuracy: 0.8077
Epoch 934/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.8274e-06 -
accuracy: 1.0000 - val_loss: 2.1772 - val_accuracy: 0.8077
Epoch 935/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.0467e-06 -
accuracy: 1.0000 - val_loss: 2.1768 - val_accuracy: 0.8077
Epoch 936/1000
1/1 [==============================] - 0s 40ms/step - loss: 4.5224e-06 -
accuracy: 1.0000 - val_loss: 2.1752 - val_accuracy: 0.8077
Epoch 937/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.3454e-06 -
accuracy: 1.0000 - val_loss: 2.1762 - val_accuracy: 0.8077
Epoch 938/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.1071e-06 -
accuracy: 1.0000 - val_loss: 2.1776 - val_accuracy: 0.8077
Epoch 939/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.7765e-06 -
accuracy: 1.0000 - val_loss: 2.1775 - val_accuracy: 0.8077
Epoch 940/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.2628e-06 -
accuracy: 1.0000 - val_loss: 2.1759 - val_accuracy: 0.8077
Epoch 941/1000
1/1 [==============================] - 0s 31ms/step - loss: 9.0257e-07 -
accuracy: 1.0000 - val_loss: 2.1745 - val_accuracy: 0.8077
Epoch 942/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.8401e-06 -
accuracy: 1.0000 - val_loss: 2.1739 - val_accuracy: 0.8077
Epoch 943/1000
1/1 [==============================] - 0s 31ms/step - loss: 8.3075e-06 -
accuracy: 1.0000 - val_loss: 2.1804 - val_accuracy: 0.8077
Epoch 944/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.1071e-06 -
accuracy: 1.0000 - val_loss: 2.1871 - val_accuracy: 0.8077
Epoch 945/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.6314e-06 -
accuracy: 1.0000 - val_loss: 2.1950 - val_accuracy: 0.8077
Epoch 946/1000
1/1 [==============================] - 0s 37ms/step - loss: 3.6548e-06 -
accuracy: 1.0000 - val_loss: 2.2038 - val_accuracy: 0.8077
Epoch 947/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.8317e-06 -
accuracy: 1.0000 - val_loss: 2.2136 - val_accuracy: 0.8077
Epoch 948/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.5976e-06 -
accuracy: 1.0000 - val_loss: 2.2217 - val_accuracy: 0.8077
Epoch 949/1000
```

```
1/1 [==============================] - 0s 38ms/step - loss: 1.5350e-06 -
accuracy: 1.0000 - val_loss: 2.2297 - val_accuracy: 0.8077
Epoch 950/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.6219e-06 -
accuracy: 1.0000 - val_loss: 2.2387 - val_accuracy: 0.8077
Epoch 951/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.2798e-06 -
accuracy: 1.0000 - val_loss: 2.2452 - val_accuracy: 0.8077
Epoch 952/1000
1/1 [==============================] - 0s 37ms/step - loss: 6.6803e-06 -
accuracy: 1.0000 - val_loss: 2.2531 - val_accuracy: 0.8077
Epoch 953/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.4577e-06 -
accuracy: 1.0000 - val_loss: 2.2588 - val_accuracy: 0.8077
Epoch 954/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.9704e-06 -
accuracy: 1.0000 - val_loss: 2.2614 - val_accuracy: 0.8077
Epoch 955/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.4058e-06 -
accuracy: 1.0000 - val_loss: 2.2613 - val_accuracy: 0.8077
Epoch 956/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.5297e-06 -
accuracy: 1.0000 - val_loss: 2.2620 - val_accuracy: 0.8077
Epoch 957/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.7808e-06 -
accuracy: 1.0000 - val_loss: 2.2622 - val_accuracy: 0.8077
Epoch 958/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.3740e-06 -
accuracy: 1.0000 - val_loss: 2.2615 - val_accuracy: 0.8077
Epoch 959/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.8115e-06 -
accuracy: 1.0000 - val_loss: 2.2592 - val_accuracy: 0.8077
Epoch 960/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.7268e-06 -
accuracy: 1.0000 - val_loss: 2.2596 - val_accuracy: 0.8077
Epoch 961/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.6176e-06 -
accuracy: 1.0000 - val_loss: 2.2598 - val_accuracy: 0.8077
Epoch 962/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.4206e-06 -
accuracy: 1.0000 - val_loss: 2.2583 - val_accuracy: 0.8077
Epoch 963/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.0383e-06 -
accuracy: 1.0000 - val_loss: 2.2520 - val_accuracy: 0.8077
Epoch 964/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.3125e-06 -
accuracy: 1.0000 - val_loss: 2.2473 - val_accuracy: 0.8077
Epoch 965/1000
```

```
1/1 [==============================] - 0s 29ms/step - loss: 3.6484e-06 -
accuracy: 1.0000 - val_loss: 2.2421 - val_accuracy: 0.8077
Epoch 966/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.7172e-06 -
accuracy: 1.0000 - val_loss: 2.2381 - val_accuracy: 0.8077
Epoch 967/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.5118e-06 -
accuracy: 1.0000 - val_loss: 2.2344 - val_accuracy: 0.8077
Epoch 968/1000
1/1 [==============================] - 0s 29ms/step - loss: 2.1134e-06 -
accuracy: 1.0000 - val_loss: 2.2328 - val_accuracy: 0.8077
Epoch 969/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.4206e-06 -
accuracy: 1.0000 - val_loss: 2.2305 - val_accuracy: 0.8077
Epoch 970/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.2871e-06 -
accuracy: 1.0000 - val_loss: 2.2294 - val_accuracy: 0.8077
Epoch 971/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.6017e-06 -
accuracy: 1.0000 - val_loss: 2.2270 - val_accuracy: 0.8077
Epoch 972/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.7109e-06 -
accuracy: 1.0000 - val_loss: 2.2221 - val_accuracy: 0.8077
Epoch 973/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.7671e-06 -
accuracy: 1.0000 - val_loss: 2.2118 - val_accuracy: 0.8077
Epoch 974/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.5987e-06 -
accuracy: 1.0000 - val_loss: 2.2023 - val_accuracy: 0.8077
Epoch 975/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.2565e-06 -
accuracy: 1.0000 - val_loss: 2.1974 - val_accuracy: 0.8077
Epoch 976/1000
1/1 [==============================] - 0s 29ms/step - loss: 3.3179e-06 -
accuracy: 1.0000 - val_loss: 2.1956 - val_accuracy: 0.8077
Epoch 977/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.7258e-06 -
accuracy: 1.0000 - val_loss: 2.1930 - val_accuracy: 0.8077
Epoch 978/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.6379e-06 -
accuracy: 1.0000 - val_loss: 2.1905 - val_accuracy: 0.8077
Epoch 979/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.9111e-06 -
accuracy: 1.0000 - val_loss: 2.1914 - val_accuracy: 0.8077
Epoch 980/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.8592e-06 -
accuracy: 1.0000 - val_loss: 2.1942 - val_accuracy: 0.8077
Epoch 981/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 2.2787e-06 -
accuracy: 1.0000 - val_loss: 2.1975 - val_accuracy: 0.8077
Epoch 982/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.4461e-06 -
accuracy: 1.0000 - val_loss: 2.2006 - val_accuracy: 0.8077
Epoch 983/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.8274e-06 -
accuracy: 1.0000 - val_loss: 2.2034 - val_accuracy: 0.8077
Epoch 984/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.3486e-06 -
accuracy: 1.0000 - val_loss: 2.2052 - val_accuracy: 0.8077
Epoch 985/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.3730e-06 -
accuracy: 1.0000 - val_loss: 2.2035 - val_accuracy: 0.8077
Epoch 986/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.9068e-06 -
accuracy: 1.0000 - val_loss: 2.2013 - val_accuracy: 0.8077
Epoch 987/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.7458e-06 -
accuracy: 1.0000 - val_loss: 2.2012 - val_accuracy: 0.8077
Epoch 988/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.1336e-06 -
accuracy: 1.0000 - val_loss: 2.2050 - val_accuracy: 0.8077
Epoch 989/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.5531e-06 -
accuracy: 1.0000 - val_loss: 2.2105 - val_accuracy: 0.8077
Epoch 990/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.0964e-06 -
accuracy: 1.0000 - val_loss: 2.2144 - val_accuracy: 0.8077
Epoch 991/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.4535e-06 -
accuracy: 1.0000 - val_loss: 2.2178 - val_accuracy: 0.8077
Epoch 992/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.2331e-06 -
accuracy: 1.0000 - val_loss: 2.2208 - val_accuracy: 0.8077
Epoch 993/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.8687e-06 -
accuracy: 1.0000 - val_loss: 2.2233 - val_accuracy: 0.8077
Epoch 994/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.5054e-06 -
accuracy: 1.0000 - val_loss: 2.2244 - val_accuracy: 0.8077
Epoch 995/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.5488e-06 -
accuracy: 1.0000 - val_loss: 2.2221 - val_accuracy: 0.8077
Epoch 996/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.8433e-06 -
accuracy: 1.0000 - val_loss: 2.2181 - val_accuracy: 0.8077
Epoch 997/1000
```

```
1/1 [==============================] - 0s 28ms/step - loss: 1.3062e-06 -
accuracy: 1.0000 - val_loss: 2.2130 - val_accuracy: 0.8077
Epoch 998/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.4937e-06 -
accuracy: 1.0000 - val_loss: 2.2064 - val_accuracy: 0.8077
Epoch 999/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.6664e-06 -
accuracy: 1.0000 - val_loss: 2.2017 - val_accuracy: 0.8077
Epoch 1000/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.6589e-06 -
accuracy: 1.0000 - val_loss: 2.1982 - val_accuracy: 0.8077
Model saved.
```

[36]:
```
all_test_images, all_test_masks, all_test_labels =␣
  ↪next(iter(all_test_dataloader))
```

[37]:
```
classifier.plot_training_history()
```
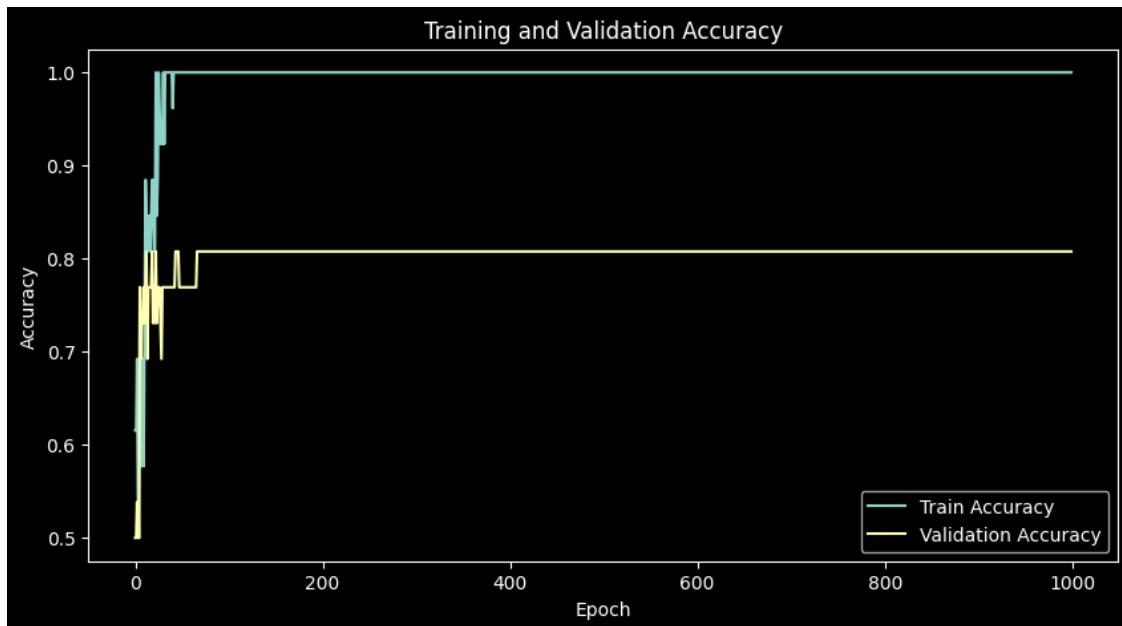

[38]:
```
classifier.evaluate(all_test_images, all_test_labels)
```

```
1/1 [==============================] - 0s 54ms/step - loss: 2.6394 - accuracy:
0.7692
Test Loss: 2.6394240856170654
Test Accuracy: 0.7692307829856873
1/1 [==============================] - 0s 56ms/step
Confusion Matrix:
[[10  6]
```

```
 [ 0 10]]
```

Classification Report:

	precision	recall	f1-score	support
0	1.00	0.62	0.77	16
1	0.62	1.00	0.77	10
accuracy			0.77	26
macro avg	0.81	0.81	0.77	26
weighted avg	0.86	0.77	0.77	26
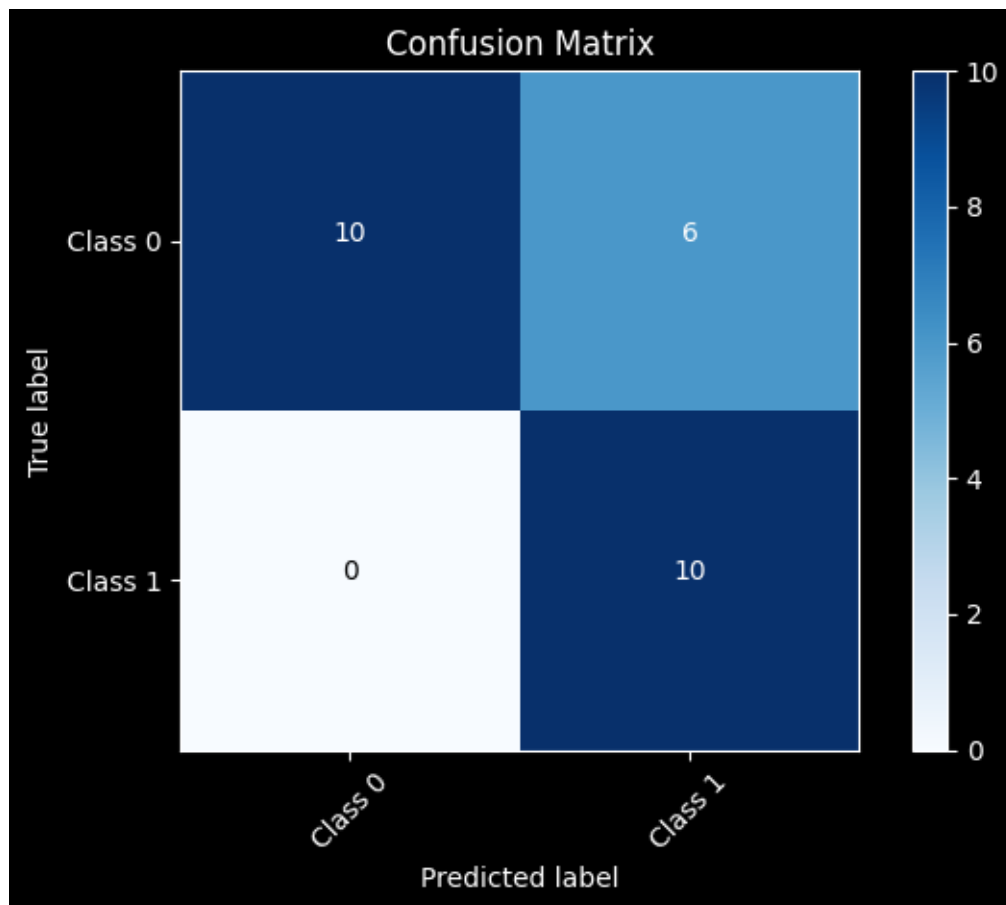

```
[39]: from torch.utils.data import Dataset
      import cv2
      import numpy as np


      class CombinedBrainMriDataset(Dataset):
```

```python
    def __init__(self, original_df, generated_images, img_size=128):
        self.img_size = img_size
        self.original_df = original_df
        self.generated_images = generated_images

    def __len__(self):
        return len(self.original_df) + len(self.generated_images)

    def __getitem__(self, idx):
        if idx < len(self.original_df):
            image = cv2.imread(self.original_df.iloc[idx, 0])
            mask = cv2.imread(self.original_df.iloc[idx, 1])
            label = self.original_df.iloc[idx, 2]
        else:
            generated_idx = idx - len(self.original_df)
            image = self.generated_images[generated_idx]
            mask = None  # You might need to handle mask for generated images
            label = 1  # Set label for generated images
        image = image.astype(np.float32)
        image = (image - 127.5) / 127.5
        image = cv2.resize(image, (self.img_size, self.img_size))
        if mask is not None:
            mask = mask.astype(np.float32)
            mask = (mask - 127.5) / 127.5
            mask = cv2.resize(mask, (self.img_size, self.img_size))
        return image, mask, label
```

```python
[44]: # Instantiate the CombinedBrainMriDataset
combined_dataset = CombinedBrainMriDataset(original_df=all_train_df,
 ↪generated_images=generated_images, img_size=64)

# Create a DataLoader for the combined dataset
batch_size = 32  # Set your desired batch size
combined_dataloader = DataLoader(combined_dataset, batch_size=batch_size,
 ↪shuffle=True)
```

Based on fake images

```python
[45]: balanced_train_images, balanced_train_masks, balanced_train_labels =
 ↪next(iter(combined_dataloader))
```

```python
[46]: classifier_fake = BrainCancerClassifier()
```

```python
[47]: classifier_fake.train(balanced_train_images, balanced_train_labels,
 ↪all_val_images, all_val_labels)
```

Epoch 1/1000

```
1/1 [==============================] - 1s 1s/step - loss: 0.6972 - accuracy:
0.5625 - val_loss: 0.8758 - val_accuracy: 0.5000
Epoch 2/1000
1/1 [==============================] - 0s 127ms/step - loss: 0.7493 - accuracy:
0.6250 - val_loss: 0.6904 - val_accuracy: 0.5000
Epoch 3/1000
1/1 [==============================] - 0s 70ms/step - loss: 0.6774 - accuracy:
0.5000 - val_loss: 0.6858 - val_accuracy: 0.5000
Epoch 4/1000
1/1 [==============================] - 0s 49ms/step - loss: 0.6367 - accuracy:
0.6875 - val_loss: 0.7108 - val_accuracy: 0.5000
Epoch 5/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.5931 - accuracy:
0.7188 - val_loss: 0.7491 - val_accuracy: 0.5000
Epoch 6/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.6254 - accuracy:
0.6250 - val_loss: 0.7530 - val_accuracy: 0.5000
Epoch 7/1000
1/1 [==============================] - 0s 39ms/step - loss: 0.6110 - accuracy:
0.6562 - val_loss: 0.7168 - val_accuracy: 0.5000
Epoch 8/1000
1/1 [==============================] - 0s 67ms/step - loss: 0.6241 - accuracy:
0.6875 - val_loss: 0.6805 - val_accuracy: 0.5000
Epoch 9/1000
1/1 [==============================] - 0s 65ms/step - loss: 0.5839 - accuracy:
0.6250 - val_loss: 0.6600 - val_accuracy: 0.5000
Epoch 10/1000
1/1 [==============================] - 0s 40ms/step - loss: 0.5869 - accuracy:
0.6875 - val_loss: 0.6626 - val_accuracy: 0.5000
Epoch 11/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.6190 - accuracy:
0.6875 - val_loss: 0.6674 - val_accuracy: 0.5000
Epoch 12/1000
1/1 [==============================] - 0s 41ms/step - loss: 0.5727 - accuracy:
0.6875 - val_loss: 0.6639 - val_accuracy: 0.5000
Epoch 13/1000
1/1 [==============================] - 0s 65ms/step - loss: 0.5041 - accuracy:
0.7188 - val_loss: 0.6549 - val_accuracy: 0.5385
Epoch 14/1000
1/1 [==============================] - 0s 63ms/step - loss: 0.5427 - accuracy:
0.7500 - val_loss: 0.6269 - val_accuracy: 0.6154
Epoch 15/1000
1/1 [==============================] - 0s 64ms/step - loss: 0.4879 - accuracy:
0.8125 - val_loss: 0.5992 - val_accuracy: 0.6923
Epoch 16/1000
1/1 [==============================] - 0s 63ms/step - loss: 0.4872 - accuracy:
0.8438 - val_loss: 0.5934 - val_accuracy: 0.6923
Epoch 17/1000
```

```
1/1 [==============================] - 0s 41ms/step - loss: 0.4133 - accuracy:
0.8438 - val_loss: 0.6316 - val_accuracy: 0.6923
Epoch 18/1000
1/1 [==============================] - 0s 61ms/step - loss: 0.4207 - accuracy:
0.8750 - val_loss: 0.5753 - val_accuracy: 0.6538
Epoch 19/1000
1/1 [==============================] - 0s 64ms/step - loss: 0.4439 - accuracy:
0.7812 - val_loss: 0.5538 - val_accuracy: 0.6538
Epoch 20/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.3715 - accuracy:
0.8750 - val_loss: 0.6636 - val_accuracy: 0.6923
Epoch 21/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.3779 - accuracy:
0.8125 - val_loss: 0.5999 - val_accuracy: 0.6538
Epoch 22/1000
1/1 [==============================] - 0s 69ms/step - loss: 0.3314 - accuracy:
0.9375 - val_loss: 0.5270 - val_accuracy: 0.8077
Epoch 23/1000
1/1 [==============================] - 0s 39ms/step - loss: 0.2780 - accuracy:
0.8438 - val_loss: 0.8920 - val_accuracy: 0.6923
Epoch 24/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.3460 - accuracy:
0.8125 - val_loss: 0.7088 - val_accuracy: 0.6538
Epoch 25/1000
1/1 [==============================] - 0s 63ms/step - loss: 0.3216 - accuracy:
0.8750 - val_loss: 0.4826 - val_accuracy: 0.7692
Epoch 26/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.3117 - accuracy:
0.8438 - val_loss: 0.5874 - val_accuracy: 0.8077
Epoch 27/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.2970 - accuracy:
0.9375 - val_loss: 0.9395 - val_accuracy: 0.6923
Epoch 28/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.3239 - accuracy:
0.9062 - val_loss: 1.0139 - val_accuracy: 0.6923
Epoch 29/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.4114 - accuracy:
0.8125 - val_loss: 0.6489 - val_accuracy: 0.7308
Epoch 30/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.2077 - accuracy:
0.9375 - val_loss: 0.4851 - val_accuracy: 0.7692
Epoch 31/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.3259 - accuracy:
0.8125 - val_loss: 0.5155 - val_accuracy: 0.7692
Epoch 32/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.2647 - accuracy:
0.9062 - val_loss: 0.6812 - val_accuracy: 0.6923
Epoch 33/1000
```

```
1/1 [==============================] - 0s 37ms/step - loss: 0.2799 - accuracy:
0.8750 - val_loss: 0.8418 - val_accuracy: 0.6923
Epoch 34/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.2584 - accuracy:
0.9375 - val_loss: 0.8173 - val_accuracy: 0.6923
Epoch 35/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.2385 - accuracy:
0.9375 - val_loss: 0.6378 - val_accuracy: 0.8077
Epoch 36/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.2307 - accuracy:
0.9375 - val_loss: 0.5234 - val_accuracy: 0.7692
Epoch 37/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.2479 - accuracy:
0.8750 - val_loss: 0.5128 - val_accuracy: 0.7692
Epoch 38/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.2728 - accuracy:
0.9062 - val_loss: 0.5680 - val_accuracy: 0.8077
Epoch 39/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.2246 - accuracy:
0.8750 - val_loss: 0.6647 - val_accuracy: 0.8462
Epoch 40/1000
1/1 [==============================] - 0s 39ms/step - loss: 0.2202 - accuracy:
0.9062 - val_loss: 0.7766 - val_accuracy: 0.7308
Epoch 41/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.2164 - accuracy:
0.8750 - val_loss: 0.7942 - val_accuracy: 0.7308
Epoch 42/1000
1/1 [==============================] - 0s 39ms/step - loss: 0.2072 - accuracy:
0.9062 - val_loss: 0.6851 - val_accuracy: 0.8462
Epoch 43/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.2580 - accuracy:
0.9062 - val_loss: 0.5657 - val_accuracy: 0.7692
Epoch 44/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.1926 - accuracy:
0.9062 - val_loss: 0.5244 - val_accuracy: 0.7692
Epoch 45/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.2123 - accuracy:
0.9062 - val_loss: 0.5421 - val_accuracy: 0.7692
Epoch 46/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.2290 - accuracy:
0.9062 - val_loss: 0.6099 - val_accuracy: 0.8462
Epoch 47/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.1607 - accuracy:
0.9062 - val_loss: 0.6987 - val_accuracy: 0.8462
Epoch 48/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.1648 - accuracy:
0.9062 - val_loss: 0.6870 - val_accuracy: 0.8462
Epoch 49/1000
```

```
1/1 [==============================] - 0s 41ms/step - loss: 0.1952 - accuracy:
0.9375 - val_loss: 0.6039 - val_accuracy: 0.8077
Epoch 50/1000
1/1 [==============================] - 0s 40ms/step - loss: 0.1547 - accuracy:
0.9375 - val_loss: 0.5384 - val_accuracy: 0.7692
Epoch 51/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.1728 - accuracy:
0.9375 - val_loss: 0.5145 - val_accuracy: 0.7692
Epoch 52/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.1506 - accuracy:
0.9375 - val_loss: 0.5328 - val_accuracy: 0.7692
Epoch 53/1000
1/1 [==============================] - 0s 39ms/step - loss: 0.1668 - accuracy:
0.9688 - val_loss: 0.5868 - val_accuracy: 0.8077
Epoch 54/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.1340 - accuracy:
0.9688 - val_loss: 0.6723 - val_accuracy: 0.8077
Epoch 55/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.1553 - accuracy:
0.9375 - val_loss: 0.7106 - val_accuracy: 0.8077
Epoch 56/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.1550 - accuracy:
0.9375 - val_loss: 0.6654 - val_accuracy: 0.8077
Epoch 57/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.1148 - accuracy:
0.9375 - val_loss: 0.6460 - val_accuracy: 0.8077
Epoch 58/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.1167 - accuracy:
0.9375 - val_loss: 0.6477 - val_accuracy: 0.7692
Epoch 59/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.1272 - accuracy:
0.9375 - val_loss: 0.6667 - val_accuracy: 0.7692
Epoch 60/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.1162 - accuracy:
0.9375 - val_loss: 0.7036 - val_accuracy: 0.8077
Epoch 61/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.1042 - accuracy:
0.9688 - val_loss: 0.7329 - val_accuracy: 0.8077
Epoch 62/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.0918 - accuracy:
0.9688 - val_loss: 0.7286 - val_accuracy: 0.8077
Epoch 63/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.1054 - accuracy:
0.9375 - val_loss: 0.7204 - val_accuracy: 0.8077
Epoch 64/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0852 - accuracy:
0.9688 - val_loss: 0.7157 - val_accuracy: 0.8077
Epoch 65/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 0.0910 - accuracy:
0.9688 - val_loss: 0.6981 - val_accuracy: 0.7692
Epoch 66/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0883 - accuracy:
0.9688 - val_loss: 0.7216 - val_accuracy: 0.7692
Epoch 67/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0843 - accuracy:
0.9688 - val_loss: 0.7655 - val_accuracy: 0.8077
Epoch 68/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.0902 - accuracy:
0.9688 - val_loss: 0.7915 - val_accuracy: 0.8077
Epoch 69/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0973 - accuracy:
0.9375 - val_loss: 0.7971 - val_accuracy: 0.7692
Epoch 70/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0550 - accuracy:
1.0000 - val_loss: 0.8076 - val_accuracy: 0.7692
Epoch 71/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.0925 - accuracy:
0.9375 - val_loss: 0.7650 - val_accuracy: 0.7692
Epoch 72/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.0621 - accuracy:
1.0000 - val_loss: 0.7071 - val_accuracy: 0.8077
Epoch 73/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.0364 - accuracy:
1.0000 - val_loss: 0.6882 - val_accuracy: 0.7692
Epoch 74/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.0552 - accuracy:
1.0000 - val_loss: 0.7546 - val_accuracy: 0.8077
Epoch 75/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0691 - accuracy:
0.9688 - val_loss: 0.8536 - val_accuracy: 0.7308
Epoch 76/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.0368 - accuracy:
1.0000 - val_loss: 0.9105 - val_accuracy: 0.6923
Epoch 77/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0433 - accuracy:
1.0000 - val_loss: 0.8161 - val_accuracy: 0.7692
Epoch 78/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0558 - accuracy:
0.9688 - val_loss: 0.8031 - val_accuracy: 0.8077
Epoch 79/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0443 - accuracy:
1.0000 - val_loss: 0.7872 - val_accuracy: 0.7692
Epoch 80/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0532 - accuracy:
0.9688 - val_loss: 0.8046 - val_accuracy: 0.7692
Epoch 81/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 0.0220 - accuracy:
1.0000 - val_loss: 0.8469 - val_accuracy: 0.7692
Epoch 82/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0313 - accuracy:
1.0000 - val_loss: 0.9360 - val_accuracy: 0.8077
Epoch 83/1000
1/1 [==============================] - 0s 30ms/step - loss: 0.0360 - accuracy:
0.9688 - val_loss: 0.9607 - val_accuracy: 0.7692
Epoch 84/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0390 - accuracy:
1.0000 - val_loss: 0.8476 - val_accuracy: 0.7692
Epoch 85/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.0162 - accuracy:
1.0000 - val_loss: 0.7807 - val_accuracy: 0.7692
Epoch 86/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0488 - accuracy:
1.0000 - val_loss: 0.7884 - val_accuracy: 0.8077
Epoch 87/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0177 - accuracy:
1.0000 - val_loss: 0.8411 - val_accuracy: 0.7692
Epoch 88/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.0254 - accuracy:
1.0000 - val_loss: 0.8547 - val_accuracy: 0.7692
Epoch 89/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0210 - accuracy:
1.0000 - val_loss: 0.8583 - val_accuracy: 0.7692
Epoch 90/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0240 - accuracy:
1.0000 - val_loss: 0.7927 - val_accuracy: 0.8077
Epoch 91/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.0157 - accuracy:
1.0000 - val_loss: 0.7868 - val_accuracy: 0.7692
Epoch 92/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0190 - accuracy:
1.0000 - val_loss: 0.8307 - val_accuracy: 0.7692
Epoch 93/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.0163 - accuracy:
1.0000 - val_loss: 0.9194 - val_accuracy: 0.7692
Epoch 94/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.0085 - accuracy:
1.0000 - val_loss: 1.0316 - val_accuracy: 0.8077
Epoch 95/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0095 - accuracy:
1.0000 - val_loss: 1.1479 - val_accuracy: 0.7308
Epoch 96/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.0264 - accuracy:
1.0000 - val_loss: 1.1332 - val_accuracy: 0.7308
Epoch 97/1000
```

```
1/1 [==============================] - 0s 36ms/step - loss: 0.0220 - accuracy:
1.0000 - val_loss: 1.0214 - val_accuracy: 0.7692
Epoch 98/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0087 - accuracy:
1.0000 - val_loss: 0.9781 - val_accuracy: 0.7692
Epoch 99/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0155 - accuracy:
1.0000 - val_loss: 0.9755 - val_accuracy: 0.7692
Epoch 100/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0060 - accuracy:
1.0000 - val_loss: 0.9872 - val_accuracy: 0.7692
Epoch 101/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0032 - accuracy:
1.0000 - val_loss: 1.0048 - val_accuracy: 0.7692
Epoch 102/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0076 - accuracy:
1.0000 - val_loss: 1.0216 - val_accuracy: 0.7692
Epoch 103/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0058 - accuracy:
1.0000 - val_loss: 1.0481 - val_accuracy: 0.8077
Epoch 104/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.0084 - accuracy:
1.0000 - val_loss: 1.0817 - val_accuracy: 0.8077
Epoch 105/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.0069 - accuracy:
1.0000 - val_loss: 1.1177 - val_accuracy: 0.8077
Epoch 106/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.0039 - accuracy:
1.0000 - val_loss: 1.1545 - val_accuracy: 0.7692
Epoch 107/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0063 - accuracy:
1.0000 - val_loss: 1.1654 - val_accuracy: 0.7692
Epoch 108/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0065 - accuracy:
1.0000 - val_loss: 1.1741 - val_accuracy: 0.7692
Epoch 109/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0082 - accuracy:
1.0000 - val_loss: 1.1483 - val_accuracy: 0.8077
Epoch 110/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.0059 - accuracy:
1.0000 - val_loss: 1.1407 - val_accuracy: 0.7692
Epoch 111/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.0053 - accuracy:
1.0000 - val_loss: 1.1244 - val_accuracy: 0.7692
Epoch 112/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0104 - accuracy:
1.0000 - val_loss: 1.1119 - val_accuracy: 0.7692
Epoch 113/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 0.0035 - accuracy:
1.0000 - val_loss: 1.1062 - val_accuracy: 0.7692
Epoch 114/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0033 - accuracy:
1.0000 - val_loss: 1.1112 - val_accuracy: 0.7692
Epoch 115/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0015 - accuracy:
1.0000 - val_loss: 1.1190 - val_accuracy: 0.7692
Epoch 116/1000
1/1 [==============================] - 0s 39ms/step - loss: 0.0012 - accuracy:
1.0000 - val_loss: 1.1312 - val_accuracy: 0.7692
Epoch 117/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0026 - accuracy:
1.0000 - val_loss: 1.1455 - val_accuracy: 0.7692
Epoch 118/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0017 - accuracy:
1.0000 - val_loss: 1.1647 - val_accuracy: 0.7692
Epoch 119/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.0027 - accuracy:
1.0000 - val_loss: 1.1918 - val_accuracy: 0.8077
Epoch 120/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0027 - accuracy:
1.0000 - val_loss: 1.2150 - val_accuracy: 0.8077
Epoch 121/1000
1/1 [==============================] - 0s 37ms/step - loss: 0.0015 - accuracy:
1.0000 - val_loss: 1.2329 - val_accuracy: 0.8077
Epoch 122/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.9002e-04 -
accuracy: 1.0000 - val_loss: 1.2497 - val_accuracy: 0.8077
Epoch 123/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0085 - accuracy:
1.0000 - val_loss: 1.2837 - val_accuracy: 0.7692
Epoch 124/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0018 - accuracy:
1.0000 - val_loss: 1.3135 - val_accuracy: 0.7692
Epoch 125/1000
1/1 [==============================] - 0s 31ms/step - loss: 0.0051 - accuracy:
1.0000 - val_loss: 1.3041 - val_accuracy: 0.7692
Epoch 126/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.0017 - accuracy:
1.0000 - val_loss: 1.2824 - val_accuracy: 0.8077
Epoch 127/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0044 - accuracy:
1.0000 - val_loss: 1.2325 - val_accuracy: 0.8077
Epoch 128/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0020 - accuracy:
1.0000 - val_loss: 1.2050 - val_accuracy: 0.7692
Epoch 129/1000
```

```
1/1 [==============================] - 0s 36ms/step - loss: 0.0019 - accuracy:
1.0000 - val_loss: 1.1899 - val_accuracy: 0.7692
Epoch 130/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0024 - accuracy:
1.0000 - val_loss: 1.1743 - val_accuracy: 0.7692
Epoch 131/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.0090 - accuracy:
1.0000 - val_loss: 1.1937 - val_accuracy: 0.7692
Epoch 132/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0029 - accuracy:
1.0000 - val_loss: 1.2371 - val_accuracy: 0.8077
Epoch 133/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.1929e-04 -
accuracy: 1.0000 - val_loss: 1.3018 - val_accuracy: 0.7692
Epoch 134/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0013 - accuracy:
1.0000 - val_loss: 1.3771 - val_accuracy: 0.7308
Epoch 135/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0025 - accuracy:
1.0000 - val_loss: 1.4277 - val_accuracy: 0.7308
Epoch 136/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0050 - accuracy:
1.0000 - val_loss: 1.3832 - val_accuracy: 0.7308
Epoch 137/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0034 - accuracy:
1.0000 - val_loss: 1.3028 - val_accuracy: 0.7692
Epoch 138/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0030 - accuracy:
1.0000 - val_loss: 1.2429 - val_accuracy: 0.8077
Epoch 139/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.0022 - accuracy:
1.0000 - val_loss: 1.2148 - val_accuracy: 0.8077
Epoch 140/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0012 - accuracy:
1.0000 - val_loss: 1.2045 - val_accuracy: 0.7692
Epoch 141/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.2843e-04 -
accuracy: 1.0000 - val_loss: 1.2055 - val_accuracy: 0.7692
Epoch 142/1000
1/1 [==============================] - 0s 33ms/step - loss: 0.0016 - accuracy:
1.0000 - val_loss: 1.2165 - val_accuracy: 0.7692
Epoch 143/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0016 - accuracy:
1.0000 - val_loss: 1.2327 - val_accuracy: 0.7692
Epoch 144/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0013 - accuracy:
1.0000 - val_loss: 1.2533 - val_accuracy: 0.7692
Epoch 145/1000
```

```
1/1 [==============================] - 0s 32ms/step - loss: 5.4203e-04 -
accuracy: 1.0000 - val_loss: 1.2732 - val_accuracy: 0.7692
Epoch 146/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0014 - accuracy:
1.0000 - val_loss: 1.3000 - val_accuracy: 0.7692
Epoch 147/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0010 - accuracy:
1.0000 - val_loss: 1.3316 - val_accuracy: 0.7692
Epoch 148/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0013 - accuracy:
1.0000 - val_loss: 1.3690 - val_accuracy: 0.7692
Epoch 149/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.5488e-04 -
accuracy: 1.0000 - val_loss: 1.4042 - val_accuracy: 0.7692
Epoch 150/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.7951e-04 -
accuracy: 1.0000 - val_loss: 1.4395 - val_accuracy: 0.8077
Epoch 151/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0011 - accuracy:
1.0000 - val_loss: 1.4699 - val_accuracy: 0.8077
Epoch 152/1000
1/1 [==============================] - 0s 32ms/step - loss: 0.0010 - accuracy:
1.0000 - val_loss: 1.5036 - val_accuracy: 0.8077
Epoch 153/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0020 - accuracy:
1.0000 - val_loss: 1.5187 - val_accuracy: 0.8077
Epoch 154/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.2420e-04 -
accuracy: 1.0000 - val_loss: 1.5282 - val_accuracy: 0.8077
Epoch 155/1000
1/1 [==============================] - 0s 35ms/step - loss: 0.0010 - accuracy:
1.0000 - val_loss: 1.5206 - val_accuracy: 0.8077
Epoch 156/1000
1/1 [==============================] - 0s 36ms/step - loss: 0.0011 - accuracy:
1.0000 - val_loss: 1.5030 - val_accuracy: 0.8077
Epoch 157/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.1647e-04 -
accuracy: 1.0000 - val_loss: 1.4792 - val_accuracy: 0.8077
Epoch 158/1000
1/1 [==============================] - 0s 38ms/step - loss: 8.1681e-04 -
accuracy: 1.0000 - val_loss: 1.4603 - val_accuracy: 0.8077
Epoch 159/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.9998e-04 -
accuracy: 1.0000 - val_loss: 1.4391 - val_accuracy: 0.7692
Epoch 160/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.9677e-04 -
accuracy: 1.0000 - val_loss: 1.4224 - val_accuracy: 0.7692
Epoch 161/1000
```

```
1/1 [==============================] - 0s 36ms/step - loss: 8.3604e-04 -
accuracy: 1.0000 - val_loss: 1.4084 - val_accuracy: 0.7692
Epoch 162/1000
1/1 [==============================] - 0s 34ms/step - loss: 9.3157e-04 -
accuracy: 1.0000 - val_loss: 1.3938 - val_accuracy: 0.7692
Epoch 163/1000
1/1 [==============================] - 0s 38ms/step - loss: 0.0012 - accuracy:
1.0000 - val_loss: 1.3805 - val_accuracy: 0.7692
Epoch 164/1000
1/1 [==============================] - 0s 37ms/step - loss: 9.2481e-04 -
accuracy: 1.0000 - val_loss: 1.3721 - val_accuracy: 0.7692
Epoch 165/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.7635e-04 -
accuracy: 1.0000 - val_loss: 1.3666 - val_accuracy: 0.7692
Epoch 166/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.6949e-04 -
accuracy: 1.0000 - val_loss: 1.3643 - val_accuracy: 0.7692
Epoch 167/1000
1/1 [==============================] - 0s 39ms/step - loss: 9.8448e-04 -
accuracy: 1.0000 - val_loss: 1.3625 - val_accuracy: 0.7692
Epoch 168/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.9072e-04 -
accuracy: 1.0000 - val_loss: 1.3635 - val_accuracy: 0.7692
Epoch 169/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0015 - accuracy:
1.0000 - val_loss: 1.3715 - val_accuracy: 0.7692
Epoch 170/1000
1/1 [==============================] - 0s 36ms/step - loss: 9.4663e-04 -
accuracy: 1.0000 - val_loss: 1.3868 - val_accuracy: 0.7692
Epoch 171/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.1470e-04 -
accuracy: 1.0000 - val_loss: 1.4043 - val_accuracy: 0.7692
Epoch 172/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.9690e-04 -
accuracy: 1.0000 - val_loss: 1.4230 - val_accuracy: 0.7692
Epoch 173/1000
1/1 [==============================] - 0s 36ms/step - loss: 9.8399e-04 -
accuracy: 1.0000 - val_loss: 1.4467 - val_accuracy: 0.7692
Epoch 174/1000
1/1 [==============================] - 0s 32ms/step - loss: 8.0658e-04 -
accuracy: 1.0000 - val_loss: 1.4671 - val_accuracy: 0.7692
Epoch 175/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.9908e-04 -
accuracy: 1.0000 - val_loss: 1.4850 - val_accuracy: 0.8077
Epoch 176/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.8574e-04 -
accuracy: 1.0000 - val_loss: 1.5054 - val_accuracy: 0.8077
Epoch 177/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 0.0022 - accuracy:
1.0000 - val_loss: 1.4910 - val_accuracy: 0.8077
Epoch 178/1000
1/1 [==============================] - 0s 38ms/step - loss: 1.8620e-04 -
accuracy: 1.0000 - val_loss: 1.4772 - val_accuracy: 0.8077
Epoch 179/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.3965e-04 -
accuracy: 1.0000 - val_loss: 1.4565 - val_accuracy: 0.8077
Epoch 180/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.8644e-04 -
accuracy: 1.0000 - val_loss: 1.4410 - val_accuracy: 0.8077
Epoch 181/1000
1/1 [==============================] - 0s 36ms/step - loss: 8.7123e-04 -
accuracy: 1.0000 - val_loss: 1.4214 - val_accuracy: 0.8077
Epoch 182/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.2981e-04 -
accuracy: 1.0000 - val_loss: 1.4038 - val_accuracy: 0.8077
Epoch 183/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.2590e-04 -
accuracy: 1.0000 - val_loss: 1.3898 - val_accuracy: 0.7692
Epoch 184/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.5544e-04 -
accuracy: 1.0000 - val_loss: 1.3813 - val_accuracy: 0.7692
Epoch 185/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.5118e-04 -
accuracy: 1.0000 - val_loss: 1.3746 - val_accuracy: 0.7692
Epoch 186/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.6943e-04 -
accuracy: 1.0000 - val_loss: 1.3711 - val_accuracy: 0.7692
Epoch 187/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.2558e-04 -
accuracy: 1.0000 - val_loss: 1.3723 - val_accuracy: 0.7692
Epoch 188/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.1927e-04 -
accuracy: 1.0000 - val_loss: 1.3757 - val_accuracy: 0.7692
Epoch 189/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.0649e-04 -
accuracy: 1.0000 - val_loss: 1.3841 - val_accuracy: 0.7692
Epoch 190/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.5426e-04 -
accuracy: 1.0000 - val_loss: 1.3939 - val_accuracy: 0.7692
Epoch 191/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.7779e-04 -
accuracy: 1.0000 - val_loss: 1.4047 - val_accuracy: 0.7692
Epoch 192/1000
1/1 [==============================] - 0s 34ms/step - loss: 0.0011 - accuracy:
1.0000 - val_loss: 1.4126 - val_accuracy: 0.7692
Epoch 193/1000
```

```
1/1 [==============================] - 0s 37ms/step - loss: 4.2668e-04 -
accuracy: 1.0000 - val_loss: 1.4227 - val_accuracy: 0.7692
Epoch 194/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.7286e-04 -
accuracy: 1.0000 - val_loss: 1.4320 - val_accuracy: 0.7692
Epoch 195/1000
1/1 [==============================] - 0s 31ms/step - loss: 5.1570e-04 -
accuracy: 1.0000 - val_loss: 1.4413 - val_accuracy: 0.7692
Epoch 196/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.1999e-04 -
accuracy: 1.0000 - val_loss: 1.4511 - val_accuracy: 0.7692
Epoch 197/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.1300e-04 -
accuracy: 1.0000 - val_loss: 1.4605 - val_accuracy: 0.7692
Epoch 198/1000
1/1 [==============================] - 0s 32ms/step - loss: 8.5992e-04 -
accuracy: 1.0000 - val_loss: 1.4669 - val_accuracy: 0.7692
Epoch 199/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.6348e-04 -
accuracy: 1.0000 - val_loss: 1.4745 - val_accuracy: 0.7692
Epoch 200/1000
1/1 [==============================] - 0s 37ms/step - loss: 7.6107e-04 -
accuracy: 1.0000 - val_loss: 1.4807 - val_accuracy: 0.7692
Epoch 201/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.4526e-04 -
accuracy: 1.0000 - val_loss: 1.4852 - val_accuracy: 0.7692
Epoch 202/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.2639e-04 -
accuracy: 1.0000 - val_loss: 1.4898 - val_accuracy: 0.7692
Epoch 203/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.9178e-04 -
accuracy: 1.0000 - val_loss: 1.4939 - val_accuracy: 0.7692
Epoch 204/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.5450e-04 -
accuracy: 1.0000 - val_loss: 1.4949 - val_accuracy: 0.7692
Epoch 205/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.9058e-04 -
accuracy: 1.0000 - val_loss: 1.4945 - val_accuracy: 0.7692
Epoch 206/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.3499e-04 -
accuracy: 1.0000 - val_loss: 1.4955 - val_accuracy: 0.7692
Epoch 207/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.2065e-04 -
accuracy: 1.0000 - val_loss: 1.4948 - val_accuracy: 0.7692
Epoch 208/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.2580e-04 -
accuracy: 1.0000 - val_loss: 1.4995 - val_accuracy: 0.7692
Epoch 209/1000
```

```
1/1 [==============================] - 0s 37ms/step - loss: 1.0271e-04 -
accuracy: 1.0000 - val_loss: 1.5053 - val_accuracy: 0.7692
Epoch 210/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.0072e-04 -
accuracy: 1.0000 - val_loss: 1.5097 - val_accuracy: 0.7692
Epoch 211/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.7014e-04 -
accuracy: 1.0000 - val_loss: 1.5146 - val_accuracy: 0.7692
Epoch 212/1000
1/1 [==============================] - 0s 39ms/step - loss: 1.7781e-04 -
accuracy: 1.0000 - val_loss: 1.5192 - val_accuracy: 0.7692
Epoch 213/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.8655e-04 -
accuracy: 1.0000 - val_loss: 1.5145 - val_accuracy: 0.7692
Epoch 214/1000
1/1 [==============================] - 0s 38ms/step - loss: 4.1642e-04 -
accuracy: 1.0000 - val_loss: 1.5040 - val_accuracy: 0.7692
Epoch 215/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.5784e-05 -
accuracy: 1.0000 - val_loss: 1.4942 - val_accuracy: 0.7692
Epoch 216/1000
1/1 [==============================] - 0s 37ms/step - loss: 8.7242e-04 -
accuracy: 1.0000 - val_loss: 1.4996 - val_accuracy: 0.7692
Epoch 217/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.4975e-05 -
accuracy: 1.0000 - val_loss: 1.5043 - val_accuracy: 0.7692
Epoch 218/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.1316e-04 -
accuracy: 1.0000 - val_loss: 1.5092 - val_accuracy: 0.7692
Epoch 219/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.0103e-04 -
accuracy: 1.0000 - val_loss: 1.5131 - val_accuracy: 0.7692
Epoch 220/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.0139e-04 -
accuracy: 1.0000 - val_loss: 1.5242 - val_accuracy: 0.7692
Epoch 221/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.5633e-04 -
accuracy: 1.0000 - val_loss: 1.5339 - val_accuracy: 0.7692
Epoch 222/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.6042e-04 -
accuracy: 1.0000 - val_loss: 1.5402 - val_accuracy: 0.7692
Epoch 223/1000
1/1 [==============================] - 0s 39ms/step - loss: 8.9741e-05 -
accuracy: 1.0000 - val_loss: 1.5459 - val_accuracy: 0.7692
Epoch 224/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.7488e-05 -
accuracy: 1.0000 - val_loss: 1.5512 - val_accuracy: 0.7692
Epoch 225/1000
```

```
1/1 [==============================] - 0s 40ms/step - loss: 3.3937e-04 -
accuracy: 1.0000 - val_loss: 1.5607 - val_accuracy: 0.8077
Epoch 226/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.5568e-04 -
accuracy: 1.0000 - val_loss: 1.5690 - val_accuracy: 0.8077
Epoch 227/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.2832e-04 -
accuracy: 1.0000 - val_loss: 1.5639 - val_accuracy: 0.8077
Epoch 228/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.0415e-05 -
accuracy: 1.0000 - val_loss: 1.5563 - val_accuracy: 0.8077
Epoch 229/1000
1/1 [==============================] - 0s 39ms/step - loss: 1.0943e-04 -
accuracy: 1.0000 - val_loss: 1.5501 - val_accuracy: 0.7692
Epoch 230/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.6307e-04 -
accuracy: 1.0000 - val_loss: 1.5602 - val_accuracy: 0.8077
Epoch 231/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.8421e-04 -
accuracy: 1.0000 - val_loss: 1.5657 - val_accuracy: 0.8077
Epoch 232/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.4904e-04 -
accuracy: 1.0000 - val_loss: 1.5665 - val_accuracy: 0.8077
Epoch 233/1000
1/1 [==============================] - 0s 38ms/step - loss: 2.9976e-04 -
accuracy: 1.0000 - val_loss: 1.5691 - val_accuracy: 0.8077
Epoch 234/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.3988e-04 -
accuracy: 1.0000 - val_loss: 1.5699 - val_accuracy: 0.8077
Epoch 235/1000
1/1 [==============================] - 0s 39ms/step - loss: 2.2834e-04 -
accuracy: 1.0000 - val_loss: 1.5644 - val_accuracy: 0.8077
Epoch 236/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.7789e-04 -
accuracy: 1.0000 - val_loss: 1.5553 - val_accuracy: 0.8077
Epoch 237/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.2724e-05 -
accuracy: 1.0000 - val_loss: 1.5459 - val_accuracy: 0.8077
Epoch 238/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.0955e-04 -
accuracy: 1.0000 - val_loss: 1.5423 - val_accuracy: 0.8077
Epoch 239/1000
1/1 [==============================] - 0s 33ms/step - loss: 9.3335e-05 -
accuracy: 1.0000 - val_loss: 1.5387 - val_accuracy: 0.8077
Epoch 240/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.2573e-04 -
accuracy: 1.0000 - val_loss: 1.5348 - val_accuracy: 0.8077
Epoch 241/1000
```

```
1/1 [==============================] - 0s 36ms/step - loss: 1.1213e-04 -
accuracy: 1.0000 - val_loss: 1.5287 - val_accuracy: 0.7692
Epoch 242/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.8277e-04 -
accuracy: 1.0000 - val_loss: 1.5196 - val_accuracy: 0.7692
Epoch 243/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.0337e-05 -
accuracy: 1.0000 - val_loss: 1.5119 - val_accuracy: 0.7692
Epoch 244/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.8731e-04 -
accuracy: 1.0000 - val_loss: 1.5074 - val_accuracy: 0.7692
Epoch 245/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.7592e-04 -
accuracy: 1.0000 - val_loss: 1.5077 - val_accuracy: 0.7692
Epoch 246/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.1978e-04 -
accuracy: 1.0000 - val_loss: 1.5083 - val_accuracy: 0.7692
Epoch 247/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.5479e-04 -
accuracy: 1.0000 - val_loss: 1.5087 - val_accuracy: 0.7692
Epoch 248/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.1882e-04 -
accuracy: 1.0000 - val_loss: 1.5083 - val_accuracy: 0.7692
Epoch 249/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.7308e-04 -
accuracy: 1.0000 - val_loss: 1.5116 - val_accuracy: 0.7692
Epoch 250/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.1316e-04 -
accuracy: 1.0000 - val_loss: 1.5162 - val_accuracy: 0.7692
Epoch 251/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3647e-04 -
accuracy: 1.0000 - val_loss: 1.5230 - val_accuracy: 0.7692
Epoch 252/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.7733e-05 -
accuracy: 1.0000 - val_loss: 1.5293 - val_accuracy: 0.7692
Epoch 253/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.7659e-04 -
accuracy: 1.0000 - val_loss: 1.5406 - val_accuracy: 0.7692
Epoch 254/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.7623e-05 -
accuracy: 1.0000 - val_loss: 1.5518 - val_accuracy: 0.8077
Epoch 255/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.3449e-04 -
accuracy: 1.0000 - val_loss: 1.5632 - val_accuracy: 0.8077
Epoch 256/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.0019e-04 -
accuracy: 1.0000 - val_loss: 1.5723 - val_accuracy: 0.8077
Epoch 257/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 1.5461e-04 -
accuracy: 1.0000 - val_loss: 1.5756 - val_accuracy: 0.8077
Epoch 258/1000
1/1 [==============================] - 0s 31ms/step - loss: 9.4903e-05 -
accuracy: 1.0000 - val_loss: 1.5776 - val_accuracy: 0.8077
Epoch 259/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.7488e-05 -
accuracy: 1.0000 - val_loss: 1.5796 - val_accuracy: 0.8077
Epoch 260/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.8975e-05 -
accuracy: 1.0000 - val_loss: 1.5807 - val_accuracy: 0.8077
Epoch 261/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.0512e-04 -
accuracy: 1.0000 - val_loss: 1.5810 - val_accuracy: 0.8077
Epoch 262/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.9084e-04 -
accuracy: 1.0000 - val_loss: 1.5776 - val_accuracy: 0.8077
Epoch 263/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.8713e-05 -
accuracy: 1.0000 - val_loss: 1.5744 - val_accuracy: 0.8077
Epoch 264/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.3433e-04 -
accuracy: 1.0000 - val_loss: 1.5787 - val_accuracy: 0.8077
Epoch 265/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.1620e-04 -
accuracy: 1.0000 - val_loss: 1.5812 - val_accuracy: 0.8077
Epoch 266/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.4665e-05 -
accuracy: 1.0000 - val_loss: 1.5862 - val_accuracy: 0.8077
Epoch 267/1000
1/1 [==============================] - 0s 30ms/step - loss: 7.0679e-05 -
accuracy: 1.0000 - val_loss: 1.5897 - val_accuracy: 0.8077
Epoch 268/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.4890e-04 -
accuracy: 1.0000 - val_loss: 1.5930 - val_accuracy: 0.8077
Epoch 269/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.3256e-05 -
accuracy: 1.0000 - val_loss: 1.5943 - val_accuracy: 0.8077
Epoch 270/1000
1/1 [==============================] - 0s 36ms/step - loss: 9.6532e-05 -
accuracy: 1.0000 - val_loss: 1.5939 - val_accuracy: 0.8077
Epoch 271/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.0529e-04 -
accuracy: 1.0000 - val_loss: 1.5957 - val_accuracy: 0.8077
Epoch 272/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.5497e-04 -
accuracy: 1.0000 - val_loss: 1.5847 - val_accuracy: 0.7692
Epoch 273/1000
```

```
1/1 [==============================] - 0s 36ms/step - loss: 9.5956e-05 -
accuracy: 1.0000 - val_loss: 1.5735 - val_accuracy: 0.7692
Epoch 274/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.6155e-04 -
accuracy: 1.0000 - val_loss: 1.5557 - val_accuracy: 0.7692
Epoch 275/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.8119e-04 -
accuracy: 1.0000 - val_loss: 1.5404 - val_accuracy: 0.7692
Epoch 276/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.4322e-04 -
accuracy: 1.0000 - val_loss: 1.5282 - val_accuracy: 0.7692
Epoch 277/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.8037e-04 -
accuracy: 1.0000 - val_loss: 1.5171 - val_accuracy: 0.7692
Epoch 278/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.0673e-04 -
accuracy: 1.0000 - val_loss: 1.5169 - val_accuracy: 0.7692
Epoch 279/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.1284e-05 -
accuracy: 1.0000 - val_loss: 1.5158 - val_accuracy: 0.7692
Epoch 280/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.3898e-04 -
accuracy: 1.0000 - val_loss: 1.5181 - val_accuracy: 0.7692
Epoch 281/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.0778e-04 -
accuracy: 1.0000 - val_loss: 1.5273 - val_accuracy: 0.7692
Epoch 282/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.1896e-05 -
accuracy: 1.0000 - val_loss: 1.5373 - val_accuracy: 0.7692
Epoch 283/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.0101e-04 -
accuracy: 1.0000 - val_loss: 1.5488 - val_accuracy: 0.7692
Epoch 284/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.4515e-04 -
accuracy: 1.0000 - val_loss: 1.5575 - val_accuracy: 0.8077
Epoch 285/1000
1/1 [==============================] - 0s 29ms/step - loss: 2.8621e-04 -
accuracy: 1.0000 - val_loss: 1.5629 - val_accuracy: 0.8077
Epoch 286/1000
1/1 [==============================] - 0s 33ms/step - loss: 8.0649e-05 -
accuracy: 1.0000 - val_loss: 1.5688 - val_accuracy: 0.8077
Epoch 287/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.9333e-05 -
accuracy: 1.0000 - val_loss: 1.5745 - val_accuracy: 0.8077
Epoch 288/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.0925e-04 -
accuracy: 1.0000 - val_loss: 1.5778 - val_accuracy: 0.8077
Epoch 289/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 7.7176e-05 -
accuracy: 1.0000 - val_loss: 1.5822 - val_accuracy: 0.8077
Epoch 290/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.9362e-04 -
accuracy: 1.0000 - val_loss: 1.5898 - val_accuracy: 0.8077
Epoch 291/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.3416e-04 -
accuracy: 1.0000 - val_loss: 1.5899 - val_accuracy: 0.8077
Epoch 292/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.0914e-04 -
accuracy: 1.0000 - val_loss: 1.5899 - val_accuracy: 0.8077
Epoch 293/1000
1/1 [==============================] - 0s 38ms/step - loss: 9.7175e-05 -
accuracy: 1.0000 - val_loss: 1.5867 - val_accuracy: 0.8077
Epoch 294/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.3557e-04 -
accuracy: 1.0000 - val_loss: 1.5770 - val_accuracy: 0.8077
Epoch 295/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.7270e-04 -
accuracy: 1.0000 - val_loss: 1.5643 - val_accuracy: 0.8077
Epoch 296/1000
1/1 [==============================] - 0s 36ms/step - loss: 9.5688e-05 -
accuracy: 1.0000 - val_loss: 1.5538 - val_accuracy: 0.8077
Epoch 297/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.0227e-05 -
accuracy: 1.0000 - val_loss: 1.5445 - val_accuracy: 0.8077
Epoch 298/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.1487e-04 -
accuracy: 1.0000 - val_loss: 1.5362 - val_accuracy: 0.7692
Epoch 299/1000
1/1 [==============================] - 0s 30ms/step - loss: 4.5637e-05 -
accuracy: 1.0000 - val_loss: 1.5289 - val_accuracy: 0.7692
Epoch 300/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.8027e-05 -
accuracy: 1.0000 - val_loss: 1.5210 - val_accuracy: 0.7692
Epoch 301/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.4642e-05 -
accuracy: 1.0000 - val_loss: 1.5147 - val_accuracy: 0.7692
Epoch 302/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.5412e-05 -
accuracy: 1.0000 - val_loss: 1.5093 - val_accuracy: 0.7692
Epoch 303/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.9536e-05 -
accuracy: 1.0000 - val_loss: 1.5049 - val_accuracy: 0.7692
Epoch 304/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3758e-04 -
accuracy: 1.0000 - val_loss: 1.5023 - val_accuracy: 0.7692
Epoch 305/1000
```

```
1/1 [==============================] - 0s 30ms/step - loss: 1.3281e-04 -
accuracy: 1.0000 - val_loss: 1.5012 - val_accuracy: 0.7692
Epoch 306/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.1957e-05 -
accuracy: 1.0000 - val_loss: 1.5010 - val_accuracy: 0.7692
Epoch 307/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.5436e-05 -
accuracy: 1.0000 - val_loss: 1.5009 - val_accuracy: 0.7692
Epoch 308/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.7962e-05 -
accuracy: 1.0000 - val_loss: 1.5022 - val_accuracy: 0.7692
Epoch 309/1000
1/1 [==============================] - 0s 32ms/step - loss: 7.8271e-05 -
accuracy: 1.0000 - val_loss: 1.5027 - val_accuracy: 0.7692
Epoch 310/1000
1/1 [==============================] - 0s 34ms/step - loss: 9.2630e-05 -
accuracy: 1.0000 - val_loss: 1.5062 - val_accuracy: 0.7692
Epoch 311/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.2234e-05 -
accuracy: 1.0000 - val_loss: 1.5094 - val_accuracy: 0.7692
Epoch 312/1000
1/1 [==============================] - 0s 40ms/step - loss: 5.4153e-05 -
accuracy: 1.0000 - val_loss: 1.5134 - val_accuracy: 0.7692
Epoch 313/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.9830e-05 -
accuracy: 1.0000 - val_loss: 1.5184 - val_accuracy: 0.7692
Epoch 314/1000
1/1 [==============================] - 0s 39ms/step - loss: 4.1178e-05 -
accuracy: 1.0000 - val_loss: 1.5219 - val_accuracy: 0.7692
Epoch 315/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.4388e-04 -
accuracy: 1.0000 - val_loss: 1.5278 - val_accuracy: 0.7692
Epoch 316/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.6182e-05 -
accuracy: 1.0000 - val_loss: 1.5339 - val_accuracy: 0.7692
Epoch 317/1000
1/1 [==============================] - 0s 37ms/step - loss: 8.1519e-05 -
accuracy: 1.0000 - val_loss: 1.5359 - val_accuracy: 0.7692
Epoch 318/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.1417e-05 -
accuracy: 1.0000 - val_loss: 1.5378 - val_accuracy: 0.7692
Epoch 319/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.9780e-05 -
accuracy: 1.0000 - val_loss: 1.5395 - val_accuracy: 0.7692
Epoch 320/1000
1/1 [==============================] - 0s 37ms/step - loss: 4.6613e-05 -
accuracy: 1.0000 - val_loss: 1.5441 - val_accuracy: 0.7692
Epoch 321/1000
```

```
1/1 [==============================] - 0s 36ms/step - loss: 1.2887e-04 -
accuracy: 1.0000 - val_loss: 1.5494 - val_accuracy: 0.7692
Epoch 322/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.5998e-05 -
accuracy: 1.0000 - val_loss: 1.5546 - val_accuracy: 0.7692
Epoch 323/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.2955e-04 -
accuracy: 1.0000 - val_loss: 1.5706 - val_accuracy: 0.7692
Epoch 324/1000
1/1 [==============================] - 0s 37ms/step - loss: 6.8249e-05 -
accuracy: 1.0000 - val_loss: 1.5812 - val_accuracy: 0.7692
Epoch 325/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.6640e-05 -
accuracy: 1.0000 - val_loss: 1.5897 - val_accuracy: 0.7692
Epoch 326/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.0494e-05 -
accuracy: 1.0000 - val_loss: 1.5969 - val_accuracy: 0.7692
Epoch 327/1000
1/1 [==============================] - 0s 37ms/step - loss: 3.9358e-05 -
accuracy: 1.0000 - val_loss: 1.6024 - val_accuracy: 0.7692
Epoch 328/1000
1/1 [==============================] - 0s 38ms/step - loss: 1.0393e-04 -
accuracy: 1.0000 - val_loss: 1.6002 - val_accuracy: 0.7692
Epoch 329/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.7332e-05 -
accuracy: 1.0000 - val_loss: 1.5975 - val_accuracy: 0.7692
Epoch 330/1000
1/1 [==============================] - 0s 43ms/step - loss: 7.1632e-05 -
accuracy: 1.0000 - val_loss: 1.5909 - val_accuracy: 0.7692
Epoch 331/1000
1/1 [==============================] - 0s 39ms/step - loss: 2.1844e-04 -
accuracy: 1.0000 - val_loss: 1.5923 - val_accuracy: 0.7692
Epoch 332/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.0157e-05 -
accuracy: 1.0000 - val_loss: 1.5927 - val_accuracy: 0.7692
Epoch 333/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.7792e-04 -
accuracy: 1.0000 - val_loss: 1.5899 - val_accuracy: 0.7692
Epoch 334/1000
1/1 [==============================] - 0s 39ms/step - loss: 2.9483e-05 -
accuracy: 1.0000 - val_loss: 1.5871 - val_accuracy: 0.7692
Epoch 335/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.7953e-05 -
accuracy: 1.0000 - val_loss: 1.5836 - val_accuracy: 0.7692
Epoch 336/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0552e-04 -
accuracy: 1.0000 - val_loss: 1.5838 - val_accuracy: 0.7692
Epoch 337/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 4.8739e-05 -
accuracy: 1.0000 - val_loss: 1.5817 - val_accuracy: 0.7692
Epoch 338/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.1462e-04 -
accuracy: 1.0000 - val_loss: 1.5811 - val_accuracy: 0.7692
Epoch 339/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.5842e-05 -
accuracy: 1.0000 - val_loss: 1.5791 - val_accuracy: 0.7692
Epoch 340/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.5592e-05 -
accuracy: 1.0000 - val_loss: 1.5785 - val_accuracy: 0.7692
Epoch 341/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.6751e-05 -
accuracy: 1.0000 - val_loss: 1.5777 - val_accuracy: 0.7692
Epoch 342/1000
1/1 [==============================] - 0s 36ms/step - loss: 9.7265e-05 -
accuracy: 1.0000 - val_loss: 1.5792 - val_accuracy: 0.7692
Epoch 343/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.0770e-05 -
accuracy: 1.0000 - val_loss: 1.5795 - val_accuracy: 0.7692
Epoch 344/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.9400e-05 -
accuracy: 1.0000 - val_loss: 1.5771 - val_accuracy: 0.7692
Epoch 345/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.4968e-05 -
accuracy: 1.0000 - val_loss: 1.5734 - val_accuracy: 0.7692
Epoch 346/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.0598e-05 -
accuracy: 1.0000 - val_loss: 1.5713 - val_accuracy: 0.7692
Epoch 347/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.3123e-05 -
accuracy: 1.0000 - val_loss: 1.5694 - val_accuracy: 0.7692
Epoch 348/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.5073e-04 -
accuracy: 1.0000 - val_loss: 1.5670 - val_accuracy: 0.7692
Epoch 349/1000
1/1 [==============================] - 0s 38ms/step - loss: 4.3889e-05 -
accuracy: 1.0000 - val_loss: 1.5654 - val_accuracy: 0.7692
Epoch 350/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.3485e-05 -
accuracy: 1.0000 - val_loss: 1.5639 - val_accuracy: 0.7692
Epoch 351/1000
1/1 [==============================] - 0s 38ms/step - loss: 6.7090e-05 -
accuracy: 1.0000 - val_loss: 1.5616 - val_accuracy: 0.7692
Epoch 352/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.4902e-05 -
accuracy: 1.0000 - val_loss: 1.5574 - val_accuracy: 0.7692
Epoch 353/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 1.8264e-05 -
accuracy: 1.0000 - val_loss: 1.5537 - val_accuracy: 0.7692
Epoch 354/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0124e-04 -
accuracy: 1.0000 - val_loss: 1.5550 - val_accuracy: 0.7692
Epoch 355/1000
1/1 [==============================] - 0s 37ms/step - loss: 7.5487e-05 -
accuracy: 1.0000 - val_loss: 1.5579 - val_accuracy: 0.7692
Epoch 356/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.4560e-05 -
accuracy: 1.0000 - val_loss: 1.5597 - val_accuracy: 0.7692
Epoch 357/1000
1/1 [==============================] - 0s 37ms/step - loss: 6.1918e-05 -
accuracy: 1.0000 - val_loss: 1.5595 - val_accuracy: 0.7692
Epoch 358/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.6577e-05 -
accuracy: 1.0000 - val_loss: 1.5593 - val_accuracy: 0.7692
Epoch 359/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.5630e-05 -
accuracy: 1.0000 - val_loss: 1.5594 - val_accuracy: 0.7692
Epoch 360/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.0964e-05 -
accuracy: 1.0000 - val_loss: 1.5591 - val_accuracy: 0.7692
Epoch 361/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.7469e-05 -
accuracy: 1.0000 - val_loss: 1.5586 - val_accuracy: 0.7692
Epoch 362/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.7372e-05 -
accuracy: 1.0000 - val_loss: 1.5570 - val_accuracy: 0.7692
Epoch 363/1000
1/1 [==============================] - 0s 39ms/step - loss: 2.1153e-05 -
accuracy: 1.0000 - val_loss: 1.5556 - val_accuracy: 0.7692
Epoch 364/1000
1/1 [==============================] - 0s 37ms/step - loss: 4.9097e-05 -
accuracy: 1.0000 - val_loss: 1.5536 - val_accuracy: 0.7692
Epoch 365/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.3880e-05 -
accuracy: 1.0000 - val_loss: 1.5528 - val_accuracy: 0.7692
Epoch 366/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.8047e-05 -
accuracy: 1.0000 - val_loss: 1.5521 - val_accuracy: 0.7692
Epoch 367/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.9581e-05 -
accuracy: 1.0000 - val_loss: 1.5521 - val_accuracy: 0.7692
Epoch 368/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.6174e-05 -
accuracy: 1.0000 - val_loss: 1.5510 - val_accuracy: 0.7692
Epoch 369/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 5.0027e-05 -
accuracy: 1.0000 - val_loss: 1.5474 - val_accuracy: 0.7692
Epoch 370/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.3729e-05 -
accuracy: 1.0000 - val_loss: 1.5444 - val_accuracy: 0.7692
Epoch 371/1000
1/1 [==============================] - 0s 38ms/step - loss: 1.2947e-04 -
accuracy: 1.0000 - val_loss: 1.5493 - val_accuracy: 0.7692
Epoch 372/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.0336e-05 -
accuracy: 1.0000 - val_loss: 1.5536 - val_accuracy: 0.7692
Epoch 373/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.2255e-05 -
accuracy: 1.0000 - val_loss: 1.5569 - val_accuracy: 0.7692
Epoch 374/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.2245e-05 -
accuracy: 1.0000 - val_loss: 1.5602 - val_accuracy: 0.7692
Epoch 375/1000
1/1 [==============================] - 0s 38ms/step - loss: 4.0858e-05 -
accuracy: 1.0000 - val_loss: 1.5630 - val_accuracy: 0.7692
Epoch 376/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.1271e-05 -
accuracy: 1.0000 - val_loss: 1.5671 - val_accuracy: 0.7692
Epoch 377/1000
1/1 [==============================] - 0s 40ms/step - loss: 4.9614e-05 -
accuracy: 1.0000 - val_loss: 1.5697 - val_accuracy: 0.7692
Epoch 378/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.7671e-05 -
accuracy: 1.0000 - val_loss: 1.5728 - val_accuracy: 0.7692
Epoch 379/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.6388e-05 -
accuracy: 1.0000 - val_loss: 1.5762 - val_accuracy: 0.7692
Epoch 380/1000
1/1 [==============================] - 0s 40ms/step - loss: 9.1608e-05 -
accuracy: 1.0000 - val_loss: 1.5786 - val_accuracy: 0.7692
Epoch 381/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.6278e-05 -
accuracy: 1.0000 - val_loss: 1.5795 - val_accuracy: 0.7692
Epoch 382/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.0169e-05 -
accuracy: 1.0000 - val_loss: 1.5803 - val_accuracy: 0.7692
Epoch 383/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.4184e-05 -
accuracy: 1.0000 - val_loss: 1.5809 - val_accuracy: 0.7692
Epoch 384/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.7369e-05 -
accuracy: 1.0000 - val_loss: 1.5819 - val_accuracy: 0.7692
Epoch 385/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 1.2609e-04 -
accuracy: 1.0000 - val_loss: 1.5746 - val_accuracy: 0.7692
Epoch 386/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.9435e-05 -
accuracy: 1.0000 - val_loss: 1.5669 - val_accuracy: 0.7692
Epoch 387/1000
1/1 [==============================] - 0s 36ms/step - loss: 9.8639e-06 -
accuracy: 1.0000 - val_loss: 1.5600 - val_accuracy: 0.7692
Epoch 388/1000
1/1 [==============================] - 0s 32ms/step - loss: 7.0029e-06 -
accuracy: 1.0000 - val_loss: 1.5540 - val_accuracy: 0.7692
Epoch 389/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.7908e-05 -
accuracy: 1.0000 - val_loss: 1.5490 - val_accuracy: 0.7692
Epoch 390/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.5310e-05 -
accuracy: 1.0000 - val_loss: 1.5450 - val_accuracy: 0.7692
Epoch 391/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.7628e-05 -
accuracy: 1.0000 - val_loss: 1.5428 - val_accuracy: 0.7692
Epoch 392/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.0900e-05 -
accuracy: 1.0000 - val_loss: 1.5421 - val_accuracy: 0.7692
Epoch 393/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.4871e-05 -
accuracy: 1.0000 - val_loss: 1.5416 - val_accuracy: 0.7692
Epoch 394/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.4394e-05 -
accuracy: 1.0000 - val_loss: 1.5423 - val_accuracy: 0.7692
Epoch 395/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.5513e-05 -
accuracy: 1.0000 - val_loss: 1.5450 - val_accuracy: 0.7692
Epoch 396/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.4532e-05 -
accuracy: 1.0000 - val_loss: 1.5494 - val_accuracy: 0.7692
Epoch 397/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.7992e-05 -
accuracy: 1.0000 - val_loss: 1.5540 - val_accuracy: 0.7692
Epoch 398/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.2352e-05 -
accuracy: 1.0000 - val_loss: 1.5590 - val_accuracy: 0.7692
Epoch 399/1000
1/1 [==============================] - 0s 40ms/step - loss: 9.4378e-06 -
accuracy: 1.0000 - val_loss: 1.5636 - val_accuracy: 0.7692
Epoch 400/1000
1/1 [==============================] - 0s 37ms/step - loss: 3.3581e-05 -
accuracy: 1.0000 - val_loss: 1.5679 - val_accuracy: 0.7692
Epoch 401/1000
```

```
1/1 [==============================] - 0s 37ms/step - loss: 2.3299e-05 -
accuracy: 1.0000 - val_loss: 1.5732 - val_accuracy: 0.7692
Epoch 402/1000
1/1 [==============================] - 0s 38ms/step - loss: 1.5173e-05 -
accuracy: 1.0000 - val_loss: 1.5784 - val_accuracy: 0.7692
Epoch 403/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.3820e-05 -
accuracy: 1.0000 - val_loss: 1.5837 - val_accuracy: 0.7692
Epoch 404/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.6955e-05 -
accuracy: 1.0000 - val_loss: 1.5884 - val_accuracy: 0.7692
Epoch 405/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.1403e-05 -
accuracy: 1.0000 - val_loss: 1.5918 - val_accuracy: 0.7692
Epoch 406/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.7129e-05 -
accuracy: 1.0000 - val_loss: 1.5966 - val_accuracy: 0.7692
Epoch 407/1000
1/1 [==============================] - 0s 33ms/step - loss: 9.5308e-06 -
accuracy: 1.0000 - val_loss: 1.6008 - val_accuracy: 0.7692
Epoch 408/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.0598e-05 -
accuracy: 1.0000 - val_loss: 1.6027 - val_accuracy: 0.7692
Epoch 409/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.1404e-05 -
accuracy: 1.0000 - val_loss: 1.6039 - val_accuracy: 0.7692
Epoch 410/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.8676e-05 -
accuracy: 1.0000 - val_loss: 1.6052 - val_accuracy: 0.7692
Epoch 411/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.6110e-05 -
accuracy: 1.0000 - val_loss: 1.6057 - val_accuracy: 0.7692
Epoch 412/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.6736e-05 -
accuracy: 1.0000 - val_loss: 1.6067 - val_accuracy: 0.7692
Epoch 413/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.8355e-05 -
accuracy: 1.0000 - val_loss: 1.6026 - val_accuracy: 0.7692
Epoch 414/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.2684e-05 -
accuracy: 1.0000 - val_loss: 1.5985 - val_accuracy: 0.7692
Epoch 415/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.2996e-05 -
accuracy: 1.0000 - val_loss: 1.5943 - val_accuracy: 0.7692
Epoch 416/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.0291e-05 -
accuracy: 1.0000 - val_loss: 1.5913 - val_accuracy: 0.7692
Epoch 417/1000
```

```
1/1 [==============================] - 0s 37ms/step - loss: 4.7670e-05 -
accuracy: 1.0000 - val_loss: 1.5869 - val_accuracy: 0.7692
Epoch 418/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.1294e-05 -
accuracy: 1.0000 - val_loss: 1.5832 - val_accuracy: 0.7692
Epoch 419/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.1972e-05 -
accuracy: 1.0000 - val_loss: 1.5790 - val_accuracy: 0.7692
Epoch 420/1000
1/1 [==============================] - 0s 36ms/step - loss: 8.9860e-06 -
accuracy: 1.0000 - val_loss: 1.5750 - val_accuracy: 0.7692
Epoch 421/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.0611e-05 -
accuracy: 1.0000 - val_loss: 1.5714 - val_accuracy: 0.7692
Epoch 422/1000
1/1 [==============================] - 0s 32ms/step - loss: 7.2791e-06 -
accuracy: 1.0000 - val_loss: 1.5678 - val_accuracy: 0.7692
Epoch 423/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.1504e-05 -
accuracy: 1.0000 - val_loss: 1.5651 - val_accuracy: 0.7692
Epoch 424/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.8052e-05 -
accuracy: 1.0000 - val_loss: 1.5614 - val_accuracy: 0.7692
Epoch 425/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.5917e-05 -
accuracy: 1.0000 - val_loss: 1.5584 - val_accuracy: 0.7692
Epoch 426/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.2564e-05 -
accuracy: 1.0000 - val_loss: 1.5539 - val_accuracy: 0.7692
Epoch 427/1000
1/1 [==============================] - 0s 38ms/step - loss: 8.8303e-05 -
accuracy: 1.0000 - val_loss: 1.5594 - val_accuracy: 0.7692
Epoch 428/1000
1/1 [==============================] - 0s 41ms/step - loss: 1.8055e-05 -
accuracy: 1.0000 - val_loss: 1.5636 - val_accuracy: 0.7692
Epoch 429/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.1490e-05 -
accuracy: 1.0000 - val_loss: 1.5683 - val_accuracy: 0.7692
Epoch 430/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.6638e-05 -
accuracy: 1.0000 - val_loss: 1.5721 - val_accuracy: 0.7692
Epoch 431/1000
1/1 [==============================] - 0s 39ms/step - loss: 1.4334e-05 -
accuracy: 1.0000 - val_loss: 1.5759 - val_accuracy: 0.7692
Epoch 432/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.1078e-05 -
accuracy: 1.0000 - val_loss: 1.5804 - val_accuracy: 0.7692
Epoch 433/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 8.4566e-06 -
accuracy: 1.0000 - val_loss: 1.5843 - val_accuracy: 0.7692
Epoch 434/1000
1/1 [==============================] - 0s 34ms/step - loss: 7.4405e-05 -
accuracy: 1.0000 - val_loss: 1.5881 - val_accuracy: 0.7692
Epoch 435/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.0586e-05 -
accuracy: 1.0000 - val_loss: 1.5915 - val_accuracy: 0.7692
Epoch 436/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.7870e-05 -
accuracy: 1.0000 - val_loss: 1.5940 - val_accuracy: 0.7692
Epoch 437/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.1460e-05 -
accuracy: 1.0000 - val_loss: 1.5957 - val_accuracy: 0.7692
Epoch 438/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.3401e-05 -
accuracy: 1.0000 - val_loss: 1.5967 - val_accuracy: 0.7692
Epoch 439/1000
1/1 [==============================] - 0s 29ms/step - loss: 2.3405e-05 -
accuracy: 1.0000 - val_loss: 1.5965 - val_accuracy: 0.7692
Epoch 440/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.4740e-05 -
accuracy: 1.0000 - val_loss: 1.5954 - val_accuracy: 0.7692
Epoch 441/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.7923e-06 -
accuracy: 1.0000 - val_loss: 1.5941 - val_accuracy: 0.7692
Epoch 442/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.5591e-05 -
accuracy: 1.0000 - val_loss: 1.5922 - val_accuracy: 0.7692
Epoch 443/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.3251e-05 -
accuracy: 1.0000 - val_loss: 1.5913 - val_accuracy: 0.7692
Epoch 444/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.7938e-05 -
accuracy: 1.0000 - val_loss: 1.5906 - val_accuracy: 0.7692
Epoch 445/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.4414e-05 -
accuracy: 1.0000 - val_loss: 1.5893 - val_accuracy: 0.7692
Epoch 446/1000
1/1 [==============================] - 0s 36ms/step - loss: 7.1188e-05 -
accuracy: 1.0000 - val_loss: 1.5885 - val_accuracy: 0.7692
Epoch 447/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.6510e-05 -
accuracy: 1.0000 - val_loss: 1.5873 - val_accuracy: 0.7692
Epoch 448/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.4349e-05 -
accuracy: 1.0000 - val_loss: 1.5868 - val_accuracy: 0.7692
Epoch 449/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 1.1653e-05 -
accuracy: 1.0000 - val_loss: 1.5862 - val_accuracy: 0.7692
Epoch 450/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.6336e-06 -
accuracy: 1.0000 - val_loss: 1.5850 - val_accuracy: 0.7692
Epoch 451/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.3835e-05 -
accuracy: 1.0000 - val_loss: 1.5839 - val_accuracy: 0.7692
Epoch 452/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.2103e-05 -
accuracy: 1.0000 - val_loss: 1.5827 - val_accuracy: 0.7692
Epoch 453/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.6208e-05 -
accuracy: 1.0000 - val_loss: 1.5807 - val_accuracy: 0.7692
Epoch 454/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.5253e-05 -
accuracy: 1.0000 - val_loss: 1.5784 - val_accuracy: 0.7692
Epoch 455/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.7423e-05 -
accuracy: 1.0000 - val_loss: 1.5783 - val_accuracy: 0.7692
Epoch 456/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.9537e-05 -
accuracy: 1.0000 - val_loss: 1.5793 - val_accuracy: 0.7692
Epoch 457/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.2416e-05 -
accuracy: 1.0000 - val_loss: 1.5819 - val_accuracy: 0.7692
Epoch 458/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.5762e-05 -
accuracy: 1.0000 - val_loss: 1.5822 - val_accuracy: 0.7692
Epoch 459/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.4098e-05 -
accuracy: 1.0000 - val_loss: 1.5829 - val_accuracy: 0.7692
Epoch 460/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.7175e-05 -
accuracy: 1.0000 - val_loss: 1.5843 - val_accuracy: 0.7692
Epoch 461/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.4925e-05 -
accuracy: 1.0000 - val_loss: 1.5818 - val_accuracy: 0.7692
Epoch 462/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.5350e-05 -
accuracy: 1.0000 - val_loss: 1.5826 - val_accuracy: 0.7692
Epoch 463/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.6975e-05 -
accuracy: 1.0000 - val_loss: 1.5825 - val_accuracy: 0.7692
Epoch 464/1000
1/1 [==============================] - 0s 38ms/step - loss: 9.8562e-06 -
accuracy: 1.0000 - val_loss: 1.5828 - val_accuracy: 0.7692
Epoch 465/1000
```

```
1/1 [==============================] - 0s 37ms/step - loss: 9.9104e-06 -
accuracy: 1.0000 - val_loss: 1.5838 - val_accuracy: 0.7692
Epoch 466/1000
1/1 [==============================] - 0s 37ms/step - loss: 6.2075e-06 -
accuracy: 1.0000 - val_loss: 1.5839 - val_accuracy: 0.7692
Epoch 467/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.6632e-06 -
accuracy: 1.0000 - val_loss: 1.5845 - val_accuracy: 0.7692
Epoch 468/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.3181e-05 -
accuracy: 1.0000 - val_loss: 1.5856 - val_accuracy: 0.7692
Epoch 469/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.9352e-05 -
accuracy: 1.0000 - val_loss: 1.5853 - val_accuracy: 0.7692
Epoch 470/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.7644e-05 -
accuracy: 1.0000 - val_loss: 1.5851 - val_accuracy: 0.7692
Epoch 471/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.9498e-05 -
accuracy: 1.0000 - val_loss: 1.5859 - val_accuracy: 0.7692
Epoch 472/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.0210e-05 -
accuracy: 1.0000 - val_loss: 1.5874 - val_accuracy: 0.7692
Epoch 473/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.8402e-06 -
accuracy: 1.0000 - val_loss: 1.5882 - val_accuracy: 0.7692
Epoch 474/1000
1/1 [==============================] - 0s 31ms/step - loss: 9.1461e-06 -
accuracy: 1.0000 - val_loss: 1.5897 - val_accuracy: 0.7692
Epoch 475/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.2552e-05 -
accuracy: 1.0000 - val_loss: 1.5907 - val_accuracy: 0.7692
Epoch 476/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.5163e-05 -
accuracy: 1.0000 - val_loss: 1.5916 - val_accuracy: 0.7692
Epoch 477/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.9717e-05 -
accuracy: 1.0000 - val_loss: 1.5928 - val_accuracy: 0.7692
Epoch 478/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.2862e-05 -
accuracy: 1.0000 - val_loss: 1.5942 - val_accuracy: 0.7692
Epoch 479/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.5540e-05 -
accuracy: 1.0000 - val_loss: 1.5956 - val_accuracy: 0.7692
Epoch 480/1000
1/1 [==============================] - 0s 34ms/step - loss: 9.8768e-06 -
accuracy: 1.0000 - val_loss: 1.5970 - val_accuracy: 0.7692
Epoch 481/1000
```

```
1/1 [==============================] - 0s 30ms/step - loss: 3.5825e-05 -
accuracy: 1.0000 - val_loss: 1.5974 - val_accuracy: 0.7692
Epoch 482/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.5639e-05 -
accuracy: 1.0000 - val_loss: 1.5990 - val_accuracy: 0.7692
Epoch 483/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.3554e-05 -
accuracy: 1.0000 - val_loss: 1.6001 - val_accuracy: 0.7692
Epoch 484/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.2524e-05 -
accuracy: 1.0000 - val_loss: 1.6036 - val_accuracy: 0.7692
Epoch 485/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.5605e-05 -
accuracy: 1.0000 - val_loss: 1.6052 - val_accuracy: 0.7692
Epoch 486/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3381e-05 -
accuracy: 1.0000 - val_loss: 1.6061 - val_accuracy: 0.7692
Epoch 487/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.0464e-05 -
accuracy: 1.0000 - val_loss: 1.6045 - val_accuracy: 0.7692
Epoch 488/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.2354e-05 -
accuracy: 1.0000 - val_loss: 1.6021 - val_accuracy: 0.7692
Epoch 489/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.8228e-05 -
accuracy: 1.0000 - val_loss: 1.6016 - val_accuracy: 0.7692
Epoch 490/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.0754e-06 -
accuracy: 1.0000 - val_loss: 1.6012 - val_accuracy: 0.7692
Epoch 491/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.6033e-05 -
accuracy: 1.0000 - val_loss: 1.6025 - val_accuracy: 0.7692
Epoch 492/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.5130e-05 -
accuracy: 1.0000 - val_loss: 1.6031 - val_accuracy: 0.7692
Epoch 493/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.5432e-06 -
accuracy: 1.0000 - val_loss: 1.6034 - val_accuracy: 0.7692
Epoch 494/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.7698e-05 -
accuracy: 1.0000 - val_loss: 1.6018 - val_accuracy: 0.7692
Epoch 495/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.5408e-05 -
accuracy: 1.0000 - val_loss: 1.5971 - val_accuracy: 0.7692
Epoch 496/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.1120e-06 -
accuracy: 1.0000 - val_loss: 1.5928 - val_accuracy: 0.7692
Epoch 497/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 1.4398e-05 -
accuracy: 1.0000 - val_loss: 1.5887 - val_accuracy: 0.7692
Epoch 498/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.8955e-05 -
accuracy: 1.0000 - val_loss: 1.5868 - val_accuracy: 0.7692
Epoch 499/1000
1/1 [==============================] - 0s 39ms/step - loss: 1.3820e-05 -
accuracy: 1.0000 - val_loss: 1.5849 - val_accuracy: 0.7692
Epoch 500/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.8040e-05 -
accuracy: 1.0000 - val_loss: 1.5823 - val_accuracy: 0.7692
Epoch 501/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.7210e-05 -
accuracy: 1.0000 - val_loss: 1.5796 - val_accuracy: 0.7692
Epoch 502/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.8130e-05 -
accuracy: 1.0000 - val_loss: 1.5761 - val_accuracy: 0.7692
Epoch 503/1000
1/1 [==============================] - 0s 36ms/step - loss: 7.5485e-05 -
accuracy: 1.0000 - val_loss: 1.5736 - val_accuracy: 0.7692
Epoch 504/1000
1/1 [==============================] - 0s 31ms/step - loss: 5.7144e-06 -
accuracy: 1.0000 - val_loss: 1.5717 - val_accuracy: 0.7692
Epoch 505/1000
1/1 [==============================] - 0s 43ms/step - loss: 1.9563e-05 -
accuracy: 1.0000 - val_loss: 1.5713 - val_accuracy: 0.7692
Epoch 506/1000
1/1 [==============================] - 0s 38ms/step - loss: 4.1960e-06 -
accuracy: 1.0000 - val_loss: 1.5710 - val_accuracy: 0.7692
Epoch 507/1000
1/1 [==============================] - 0s 36ms/step - loss: 8.7432e-06 -
accuracy: 1.0000 - val_loss: 1.5711 - val_accuracy: 0.7692
Epoch 508/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.3727e-05 -
accuracy: 1.0000 - val_loss: 1.5716 - val_accuracy: 0.7692
Epoch 509/1000
1/1 [==============================] - 0s 39ms/step - loss: 2.1148e-05 -
accuracy: 1.0000 - val_loss: 1.5710 - val_accuracy: 0.7692
Epoch 510/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.0788e-05 -
accuracy: 1.0000 - val_loss: 1.5712 - val_accuracy: 0.7692
Epoch 511/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.2302e-05 -
accuracy: 1.0000 - val_loss: 1.5734 - val_accuracy: 0.7692
Epoch 512/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.9498e-05 -
accuracy: 1.0000 - val_loss: 1.5758 - val_accuracy: 0.7692
Epoch 513/1000
```

```
1/1 [==============================] - 0s 39ms/step - loss: 3.3808e-05 -
accuracy: 1.0000 - val_loss: 1.5830 - val_accuracy: 0.7692
Epoch 514/1000
1/1 [==============================] - 0s 34ms/step - loss: 9.8587e-06 -
accuracy: 1.0000 - val_loss: 1.5900 - val_accuracy: 0.7692
Epoch 515/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.3763e-05 -
accuracy: 1.0000 - val_loss: 1.5967 - val_accuracy: 0.7692
Epoch 516/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.2898e-05 -
accuracy: 1.0000 - val_loss: 1.6038 - val_accuracy: 0.7692
Epoch 517/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.8117e-05 -
accuracy: 1.0000 - val_loss: 1.6090 - val_accuracy: 0.7692
Epoch 518/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.0309e-05 -
accuracy: 1.0000 - val_loss: 1.6106 - val_accuracy: 0.7692
Epoch 519/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.4601e-05 -
accuracy: 1.0000 - val_loss: 1.6082 - val_accuracy: 0.7692
Epoch 520/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.4557e-05 -
accuracy: 1.0000 - val_loss: 1.6028 - val_accuracy: 0.7692
Epoch 521/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.6782e-05 -
accuracy: 1.0000 - val_loss: 1.5957 - val_accuracy: 0.7692
Epoch 522/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.5559e-05 -
accuracy: 1.0000 - val_loss: 1.5872 - val_accuracy: 0.7692
Epoch 523/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.1307e-05 -
accuracy: 1.0000 - val_loss: 1.5787 - val_accuracy: 0.7692
Epoch 524/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.2669e-05 -
accuracy: 1.0000 - val_loss: 1.5708 - val_accuracy: 0.7692
Epoch 525/1000
1/1 [==============================] - 0s 37ms/step - loss: 8.7768e-06 -
accuracy: 1.0000 - val_loss: 1.5636 - val_accuracy: 0.7692
Epoch 526/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.2663e-05 -
accuracy: 1.0000 - val_loss: 1.5581 - val_accuracy: 0.7692
Epoch 527/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.0043e-05 -
accuracy: 1.0000 - val_loss: 1.5526 - val_accuracy: 0.7692
Epoch 528/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.2139e-05 -
accuracy: 1.0000 - val_loss: 1.5478 - val_accuracy: 0.7692
Epoch 529/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 2.5189e-05 -
accuracy: 1.0000 - val_loss: 1.5425 - val_accuracy: 0.7692
Epoch 530/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.9406e-05 -
accuracy: 1.0000 - val_loss: 1.5402 - val_accuracy: 0.7692
Epoch 531/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.9075e-06 -
accuracy: 1.0000 - val_loss: 1.5383 - val_accuracy: 0.7692
Epoch 532/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.2508e-05 -
accuracy: 1.0000 - val_loss: 1.5360 - val_accuracy: 0.7692
Epoch 533/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.8990e-05 -
accuracy: 1.0000 - val_loss: 1.5346 - val_accuracy: 0.7692
Epoch 534/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.1812e-05 -
accuracy: 1.0000 - val_loss: 1.5339 - val_accuracy: 0.7692
Epoch 535/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.2294e-05 -
accuracy: 1.0000 - val_loss: 1.5347 - val_accuracy: 0.7692
Epoch 536/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.4239e-05 -
accuracy: 1.0000 - val_loss: 1.5382 - val_accuracy: 0.7692
Epoch 537/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.3060e-05 -
accuracy: 1.0000 - val_loss: 1.5423 - val_accuracy: 0.7692
Epoch 538/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.6823e-05 -
accuracy: 1.0000 - val_loss: 1.5478 - val_accuracy: 0.7692
Epoch 539/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.3371e-05 -
accuracy: 1.0000 - val_loss: 1.5523 - val_accuracy: 0.7692
Epoch 540/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.4336e-05 -
accuracy: 1.0000 - val_loss: 1.5556 - val_accuracy: 0.7692
Epoch 541/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.2798e-06 -
accuracy: 1.0000 - val_loss: 1.5585 - val_accuracy: 0.7692
Epoch 542/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.3355e-06 -
accuracy: 1.0000 - val_loss: 1.5611 - val_accuracy: 0.7692
Epoch 543/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.1198e-06 -
accuracy: 1.0000 - val_loss: 1.5638 - val_accuracy: 0.7692
Epoch 544/1000
1/1 [==============================] - 0s 31ms/step - loss: 8.4256e-06 -
accuracy: 1.0000 - val_loss: 1.5665 - val_accuracy: 0.7692
Epoch 545/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 9.5411e-06 -
accuracy: 1.0000 - val_loss: 1.5695 - val_accuracy: 0.7692
Epoch 546/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.0223e-05 -
accuracy: 1.0000 - val_loss: 1.5715 - val_accuracy: 0.7692
Epoch 547/1000
1/1 [==============================] - 0s 29ms/step - loss: 1.8290e-05 -
accuracy: 1.0000 - val_loss: 1.5724 - val_accuracy: 0.7692
Epoch 548/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.5169e-05 -
accuracy: 1.0000 - val_loss: 1.5745 - val_accuracy: 0.7692
Epoch 549/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.8563e-05 -
accuracy: 1.0000 - val_loss: 1.5765 - val_accuracy: 0.7692
Epoch 550/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.7970e-06 -
accuracy: 1.0000 - val_loss: 1.5778 - val_accuracy: 0.7692
Epoch 551/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.1675e-05 -
accuracy: 1.0000 - val_loss: 1.5781 - val_accuracy: 0.7692
Epoch 552/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.2881e-05 -
accuracy: 1.0000 - val_loss: 1.5765 - val_accuracy: 0.7692
Epoch 553/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.7824e-05 -
accuracy: 1.0000 - val_loss: 1.5779 - val_accuracy: 0.7692
Epoch 554/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.3977e-05 -
accuracy: 1.0000 - val_loss: 1.5799 - val_accuracy: 0.7692
Epoch 555/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3164e-05 -
accuracy: 1.0000 - val_loss: 1.5813 - val_accuracy: 0.7692
Epoch 556/1000
1/1 [==============================] - 0s 38ms/step - loss: 1.9103e-05 -
accuracy: 1.0000 - val_loss: 1.5820 - val_accuracy: 0.7692
Epoch 557/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.0327e-06 -
accuracy: 1.0000 - val_loss: 1.5821 - val_accuracy: 0.7692
Epoch 558/1000
1/1 [==============================] - 0s 33ms/step - loss: 9.3191e-06 -
accuracy: 1.0000 - val_loss: 1.5828 - val_accuracy: 0.7692
Epoch 559/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.3690e-06 -
accuracy: 1.0000 - val_loss: 1.5829 - val_accuracy: 0.7692
Epoch 560/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.2235e-05 -
accuracy: 1.0000 - val_loss: 1.5831 - val_accuracy: 0.7692
Epoch 561/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 8.7742e-06 -
accuracy: 1.0000 - val_loss: 1.5821 - val_accuracy: 0.7692
Epoch 562/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.2338e-05 -
accuracy: 1.0000 - val_loss: 1.5807 - val_accuracy: 0.7692
Epoch 563/1000
1/1 [==============================] - 0s 38ms/step - loss: 1.6097e-05 -
accuracy: 1.0000 - val_loss: 1.5817 - val_accuracy: 0.7692
Epoch 564/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.1780e-06 -
accuracy: 1.0000 - val_loss: 1.5824 - val_accuracy: 0.7692
Epoch 565/1000
1/1 [==============================] - 0s 33ms/step - loss: 9.2674e-06 -
accuracy: 1.0000 - val_loss: 1.5824 - val_accuracy: 0.7692
Epoch 566/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.2841e-05 -
accuracy: 1.0000 - val_loss: 1.5823 - val_accuracy: 0.7692
Epoch 567/1000
1/1 [==============================] - 0s 37ms/step - loss: 4.7202e-06 -
accuracy: 1.0000 - val_loss: 1.5822 - val_accuracy: 0.7692
Epoch 568/1000
1/1 [==============================] - 0s 37ms/step - loss: 3.8862e-06 -
accuracy: 1.0000 - val_loss: 1.5821 - val_accuracy: 0.7692
Epoch 569/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.1723e-05 -
accuracy: 1.0000 - val_loss: 1.5826 - val_accuracy: 0.7692
Epoch 570/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.0530e-05 -
accuracy: 1.0000 - val_loss: 1.5844 - val_accuracy: 0.7692
Epoch 571/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.0295e-05 -
accuracy: 1.0000 - val_loss: 1.5871 - val_accuracy: 0.7692
Epoch 572/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.0688e-05 -
accuracy: 1.0000 - val_loss: 1.5898 - val_accuracy: 0.7692
Epoch 573/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.8049e-05 -
accuracy: 1.0000 - val_loss: 1.5933 - val_accuracy: 0.7692
Epoch 574/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3970e-05 -
accuracy: 1.0000 - val_loss: 1.5952 - val_accuracy: 0.7692
Epoch 575/1000
1/1 [==============================] - 0s 39ms/step - loss: 1.1261e-05 -
accuracy: 1.0000 - val_loss: 1.5970 - val_accuracy: 0.7692
Epoch 576/1000
1/1 [==============================] - 0s 34ms/step - loss: 7.2275e-06 -
accuracy: 1.0000 - val_loss: 1.5984 - val_accuracy: 0.7692
Epoch 577/1000
```

```
1/1 [==============================] - 0s 38ms/step - loss: 4.0669e-06 -
accuracy: 1.0000 - val_loss: 1.5992 - val_accuracy: 0.7692
Epoch 578/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.1456e-06 -
accuracy: 1.0000 - val_loss: 1.6009 - val_accuracy: 0.7692
Epoch 579/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.0743e-05 -
accuracy: 1.0000 - val_loss: 1.6041 - val_accuracy: 0.7692
Epoch 580/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.9449e-06 -
accuracy: 1.0000 - val_loss: 1.6069 - val_accuracy: 0.7692
Epoch 581/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.1338e-05 -
accuracy: 1.0000 - val_loss: 1.6098 - val_accuracy: 0.7692
Epoch 582/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.1364e-05 -
accuracy: 1.0000 - val_loss: 1.6128 - val_accuracy: 0.7692
Epoch 583/1000
1/1 [==============================] - 0s 36ms/step - loss: 7.4806e-06 -
accuracy: 1.0000 - val_loss: 1.6157 - val_accuracy: 0.7692
Epoch 584/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.6115e-05 -
accuracy: 1.0000 - val_loss: 1.6184 - val_accuracy: 0.7692
Epoch 585/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.0567e-05 -
accuracy: 1.0000 - val_loss: 1.6207 - val_accuracy: 0.7692
Epoch 586/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.4995e-05 -
accuracy: 1.0000 - val_loss: 1.6203 - val_accuracy: 0.7692
Epoch 587/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.5449e-05 -
accuracy: 1.0000 - val_loss: 1.6198 - val_accuracy: 0.7692
Epoch 588/1000
1/1 [==============================] - 0s 34ms/step - loss: 9.8536e-06 -
accuracy: 1.0000 - val_loss: 1.6190 - val_accuracy: 0.7692
Epoch 589/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.7247e-06 -
accuracy: 1.0000 - val_loss: 1.6177 - val_accuracy: 0.7692
Epoch 590/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.3123e-05 -
accuracy: 1.0000 - val_loss: 1.6158 - val_accuracy: 0.7692
Epoch 591/1000
1/1 [==============================] - 0s 34ms/step - loss: 9.5101e-06 -
accuracy: 1.0000 - val_loss: 1.6141 - val_accuracy: 0.7692
Epoch 592/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.1352e-06 -
accuracy: 1.0000 - val_loss: 1.6128 - val_accuracy: 0.7692
Epoch 593/1000
```

```
1/1 [==============================] - 0s 39ms/step - loss: 5.3606e-06 -
accuracy: 1.0000 - val_loss: 1.6114 - val_accuracy: 0.7692
Epoch 594/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.6331e-06 -
accuracy: 1.0000 - val_loss: 1.6098 - val_accuracy: 0.7692
Epoch 595/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.2617e-05 -
accuracy: 1.0000 - val_loss: 1.6085 - val_accuracy: 0.7692
Epoch 596/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.7869e-05 -
accuracy: 1.0000 - val_loss: 1.6045 - val_accuracy: 0.7692
Epoch 597/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.7024e-05 -
accuracy: 1.0000 - val_loss: 1.6012 - val_accuracy: 0.7692
Epoch 598/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.3484e-06 -
accuracy: 1.0000 - val_loss: 1.5979 - val_accuracy: 0.7692
Epoch 599/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.1142e-05 -
accuracy: 1.0000 - val_loss: 1.5939 - val_accuracy: 0.7692
Epoch 600/1000
1/1 [==============================] - 0s 40ms/step - loss: 1.0675e-05 -
accuracy: 1.0000 - val_loss: 1.5892 - val_accuracy: 0.7692
Epoch 601/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.1695e-05 -
accuracy: 1.0000 - val_loss: 1.5849 - val_accuracy: 0.7692
Epoch 602/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.5787e-06 -
accuracy: 1.0000 - val_loss: 1.5812 - val_accuracy: 0.7692
Epoch 603/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.8531e-06 -
accuracy: 1.0000 - val_loss: 1.5792 - val_accuracy: 0.7692
Epoch 604/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.5174e-06 -
accuracy: 1.0000 - val_loss: 1.5787 - val_accuracy: 0.7692
Epoch 605/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3476e-05 -
accuracy: 1.0000 - val_loss: 1.5786 - val_accuracy: 0.7692
Epoch 606/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.0184e-06 -
accuracy: 1.0000 - val_loss: 1.5788 - val_accuracy: 0.7692
Epoch 607/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.4731e-05 -
accuracy: 1.0000 - val_loss: 1.5789 - val_accuracy: 0.7692
Epoch 608/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.9421e-06 -
accuracy: 1.0000 - val_loss: 1.5784 - val_accuracy: 0.7692
Epoch 609/1000
```

```
1/1 [==============================] - 0s 32ms/step - loss: 4.0514e-06 -
accuracy: 1.0000 - val_loss: 1.5778 - val_accuracy: 0.7692
Epoch 610/1000
1/1 [==============================] - 0s 37ms/step - loss: 4.2787e-06 -
accuracy: 1.0000 - val_loss: 1.5772 - val_accuracy: 0.7692
Epoch 611/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.3714e-06 -
accuracy: 1.0000 - val_loss: 1.5770 - val_accuracy: 0.7692
Epoch 612/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.1757e-05 -
accuracy: 1.0000 - val_loss: 1.5783 - val_accuracy: 0.7692
Epoch 613/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.2930e-06 -
accuracy: 1.0000 - val_loss: 1.5793 - val_accuracy: 0.7692
Epoch 614/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.6859e-05 -
accuracy: 1.0000 - val_loss: 1.5838 - val_accuracy: 0.7692
Epoch 615/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.0923e-05 -
accuracy: 1.0000 - val_loss: 1.5863 - val_accuracy: 0.7692
Epoch 616/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.0862e-06 -
accuracy: 1.0000 - val_loss: 1.5883 - val_accuracy: 0.7692
Epoch 617/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.7313e-05 -
accuracy: 1.0000 - val_loss: 1.5908 - val_accuracy: 0.7692
Epoch 618/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.6871e-06 -
accuracy: 1.0000 - val_loss: 1.5932 - val_accuracy: 0.7692
Epoch 619/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.4866e-06 -
accuracy: 1.0000 - val_loss: 1.5954 - val_accuracy: 0.7692
Epoch 620/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.2618e-06 -
accuracy: 1.0000 - val_loss: 1.5974 - val_accuracy: 0.7692
Epoch 621/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.2492e-05 -
accuracy: 1.0000 - val_loss: 1.6002 - val_accuracy: 0.7692
Epoch 622/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.0347e-05 -
accuracy: 1.0000 - val_loss: 1.6007 - val_accuracy: 0.7692
Epoch 623/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.1798e-05 -
accuracy: 1.0000 - val_loss: 1.6024 - val_accuracy: 0.7692
Epoch 624/1000
1/1 [==============================] - 0s 37ms/step - loss: 3.0005e-06 -
accuracy: 1.0000 - val_loss: 1.6039 - val_accuracy: 0.7692
Epoch 625/1000
```

```
1/1 [==============================] - 0s 37ms/step - loss: 3.2329e-06 -
accuracy: 1.0000 - val_loss: 1.6047 - val_accuracy: 0.7692
Epoch 626/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.2282e-06 -
accuracy: 1.0000 - val_loss: 1.6060 - val_accuracy: 0.7692
Epoch 627/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0311e-05 -
accuracy: 1.0000 - val_loss: 1.6080 - val_accuracy: 0.7692
Epoch 628/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.1409e-06 -
accuracy: 1.0000 - val_loss: 1.6097 - val_accuracy: 0.7692
Epoch 629/1000
1/1 [==============================] - 0s 38ms/step - loss: 3.5402e-06 -
accuracy: 1.0000 - val_loss: 1.6113 - val_accuracy: 0.7692
Epoch 630/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.7863e-05 -
accuracy: 1.0000 - val_loss: 1.6142 - val_accuracy: 0.7692
Epoch 631/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.5122e-06 -
accuracy: 1.0000 - val_loss: 1.6163 - val_accuracy: 0.7692
Epoch 632/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.2728e-05 -
accuracy: 1.0000 - val_loss: 1.6198 - val_accuracy: 0.7692
Epoch 633/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.4402e-06 -
accuracy: 1.0000 - val_loss: 1.6228 - val_accuracy: 0.7692
Epoch 634/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.2748e-05 -
accuracy: 1.0000 - val_loss: 1.6230 - val_accuracy: 0.7692
Epoch 635/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.1200e-06 -
accuracy: 1.0000 - val_loss: 1.6231 - val_accuracy: 0.7692
Epoch 636/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.3216e-05 -
accuracy: 1.0000 - val_loss: 1.6243 - val_accuracy: 0.7692
Epoch 637/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.7301e-05 -
accuracy: 1.0000 - val_loss: 1.6243 - val_accuracy: 0.7692
Epoch 638/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.4026e-05 -
accuracy: 1.0000 - val_loss: 1.6222 - val_accuracy: 0.7692
Epoch 639/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.3383e-05 -
accuracy: 1.0000 - val_loss: 1.6198 - val_accuracy: 0.7692
Epoch 640/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.8388e-06 -
accuracy: 1.0000 - val_loss: 1.6176 - val_accuracy: 0.7692
Epoch 641/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 4.3122e-06 -
accuracy: 1.0000 - val_loss: 1.6152 - val_accuracy: 0.7692
Epoch 642/1000
1/1 [==============================] - 0s 38ms/step - loss: 3.1425e-06 -
accuracy: 1.0000 - val_loss: 1.6127 - val_accuracy: 0.7692
Epoch 643/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.1784e-06 -
accuracy: 1.0000 - val_loss: 1.6105 - val_accuracy: 0.7692
Epoch 644/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.6324e-06 -
accuracy: 1.0000 - val_loss: 1.6089 - val_accuracy: 0.7692
Epoch 645/1000
1/1 [==============================] - 0s 38ms/step - loss: 1.8437e-06 -
accuracy: 1.0000 - val_loss: 1.6077 - val_accuracy: 0.7692
Epoch 646/1000
1/1 [==============================] - 0s 38ms/step - loss: 6.0061e-06 -
accuracy: 1.0000 - val_loss: 1.6069 - val_accuracy: 0.7692
Epoch 647/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.8254e-06 -
accuracy: 1.0000 - val_loss: 1.6060 - val_accuracy: 0.7692
Epoch 648/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.5794e-06 -
accuracy: 1.0000 - val_loss: 1.6042 - val_accuracy: 0.7692
Epoch 649/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.8018e-05 -
accuracy: 1.0000 - val_loss: 1.6002 - val_accuracy: 0.7692
Epoch 650/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.6392e-05 -
accuracy: 1.0000 - val_loss: 1.5975 - val_accuracy: 0.7692
Epoch 651/1000
1/1 [==============================] - 0s 39ms/step - loss: 4.6505e-06 -
accuracy: 1.0000 - val_loss: 1.5949 - val_accuracy: 0.7692
Epoch 652/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.3407e-05 -
accuracy: 1.0000 - val_loss: 1.5907 - val_accuracy: 0.7692
Epoch 653/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.1425e-06 -
accuracy: 1.0000 - val_loss: 1.5868 - val_accuracy: 0.7692
Epoch 654/1000
1/1 [==============================] - 0s 37ms/step - loss: 7.5787e-06 -
accuracy: 1.0000 - val_loss: 1.5837 - val_accuracy: 0.7692
Epoch 655/1000
1/1 [==============================] - 0s 32ms/step - loss: 5.6111e-06 -
accuracy: 1.0000 - val_loss: 1.5815 - val_accuracy: 0.7692
Epoch 656/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.6575e-06 -
accuracy: 1.0000 - val_loss: 1.5804 - val_accuracy: 0.7692
Epoch 657/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 7.2353e-06 -
accuracy: 1.0000 - val_loss: 1.5794 - val_accuracy: 0.7692
Epoch 658/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.5099e-06 -
accuracy: 1.0000 - val_loss: 1.5784 - val_accuracy: 0.7692
Epoch 659/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.3786e-05 -
accuracy: 1.0000 - val_loss: 1.5775 - val_accuracy: 0.7692
Epoch 660/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.9592e-05 -
accuracy: 1.0000 - val_loss: 1.5767 - val_accuracy: 0.7692
Epoch 661/1000
1/1 [==============================] - 0s 39ms/step - loss: 1.0817e-05 -
accuracy: 1.0000 - val_loss: 1.5766 - val_accuracy: 0.7692
Epoch 662/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.1904e-05 -
accuracy: 1.0000 - val_loss: 1.5774 - val_accuracy: 0.7692
Epoch 663/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.8519e-06 -
accuracy: 1.0000 - val_loss: 1.5781 - val_accuracy: 0.7692
Epoch 664/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.5615e-06 -
accuracy: 1.0000 - val_loss: 1.5788 - val_accuracy: 0.7692
Epoch 665/1000
1/1 [==============================] - 0s 38ms/step - loss: 3.7958e-06 -
accuracy: 1.0000 - val_loss: 1.5798 - val_accuracy: 0.7692
Epoch 666/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.0600e-05 -
accuracy: 1.0000 - val_loss: 1.5801 - val_accuracy: 0.7692
Epoch 667/1000
1/1 [==============================] - 0s 39ms/step - loss: 8.0022e-06 -
accuracy: 1.0000 - val_loss: 1.5807 - val_accuracy: 0.7692
Epoch 668/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.0760e-05 -
accuracy: 1.0000 - val_loss: 1.5807 - val_accuracy: 0.7692
Epoch 669/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.0017e-06 -
accuracy: 1.0000 - val_loss: 1.5802 - val_accuracy: 0.7692
Epoch 670/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.6444e-06 -
accuracy: 1.0000 - val_loss: 1.5805 - val_accuracy: 0.7692
Epoch 671/1000
1/1 [==============================] - 0s 37ms/step - loss: 1.3520e-05 -
accuracy: 1.0000 - val_loss: 1.5814 - val_accuracy: 0.7692
Epoch 672/1000
1/1 [==============================] - 0s 39ms/step - loss: 1.4243e-05 -
accuracy: 1.0000 - val_loss: 1.5822 - val_accuracy: 0.7692
Epoch 673/1000
```

```
1/1 [==============================] - 0s 40ms/step - loss: 1.4644e-05 -
accuracy: 1.0000 - val_loss: 1.5827 - val_accuracy: 0.7692
Epoch 674/1000
1/1 [==============================] - 0s 38ms/step - loss: 5.3683e-06 -
accuracy: 1.0000 - val_loss: 1.5836 - val_accuracy: 0.7692
Epoch 675/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.6993e-05 -
accuracy: 1.0000 - val_loss: 1.5847 - val_accuracy: 0.7692
Epoch 676/1000
1/1 [==============================] - 0s 41ms/step - loss: 4.7796e-06 -
accuracy: 1.0000 - val_loss: 1.5862 - val_accuracy: 0.7692
Epoch 677/1000
1/1 [==============================] - 0s 37ms/step - loss: 9.4895e-06 -
accuracy: 1.0000 - val_loss: 1.5865 - val_accuracy: 0.7692
Epoch 678/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.1424e-05 -
accuracy: 1.0000 - val_loss: 1.5854 - val_accuracy: 0.7692
Epoch 679/1000
1/1 [==============================] - 0s 41ms/step - loss: 4.0695e-06 -
accuracy: 1.0000 - val_loss: 1.5853 - val_accuracy: 0.7692
Epoch 680/1000
1/1 [==============================] - 0s 38ms/step - loss: 2.6338e-06 -
accuracy: 1.0000 - val_loss: 1.5854 - val_accuracy: 0.7692
Epoch 681/1000
1/1 [==============================] - 0s 37ms/step - loss: 3.5686e-06 -
accuracy: 1.0000 - val_loss: 1.5852 - val_accuracy: 0.7692
Epoch 682/1000
1/1 [==============================] - 0s 37ms/step - loss: 6.9590e-06 -
accuracy: 1.0000 - val_loss: 1.5841 - val_accuracy: 0.7692
Epoch 683/1000
1/1 [==============================] - 0s 40ms/step - loss: 1.6696e-05 -
accuracy: 1.0000 - val_loss: 1.5835 - val_accuracy: 0.7692
Epoch 684/1000
1/1 [==============================] - 0s 38ms/step - loss: 1.8850e-06 -
accuracy: 1.0000 - val_loss: 1.5828 - val_accuracy: 0.7692
Epoch 685/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.1728e-05 -
accuracy: 1.0000 - val_loss: 1.5818 - val_accuracy: 0.7692
Epoch 686/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.6827e-06 -
accuracy: 1.0000 - val_loss: 1.5814 - val_accuracy: 0.7692
Epoch 687/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.7176e-06 -
accuracy: 1.0000 - val_loss: 1.5812 - val_accuracy: 0.7692
Epoch 688/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.5040e-06 -
accuracy: 1.0000 - val_loss: 1.5814 - val_accuracy: 0.7692
Epoch 689/1000
```

```
1/1 [==============================] - 0s 37ms/step - loss: 1.3605e-05 -
accuracy: 1.0000 - val_loss: 1.5815 - val_accuracy: 0.7692
Epoch 690/1000
1/1 [==============================] - 0s 37ms/step - loss: 6.9538e-06 -
accuracy: 1.0000 - val_loss: 1.5829 - val_accuracy: 0.7692
Epoch 691/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.0378e-05 -
accuracy: 1.0000 - val_loss: 1.5843 - val_accuracy: 0.7692
Epoch 692/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.1831e-06 -
accuracy: 1.0000 - val_loss: 1.5851 - val_accuracy: 0.7692
Epoch 693/1000
1/1 [==============================] - 0s 30ms/step - loss: 7.4935e-06 -
accuracy: 1.0000 - val_loss: 1.5850 - val_accuracy: 0.7692
Epoch 694/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.6324e-06 -
accuracy: 1.0000 - val_loss: 1.5858 - val_accuracy: 0.7692
Epoch 695/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.3096e-06 -
accuracy: 1.0000 - val_loss: 1.5872 - val_accuracy: 0.7692
Epoch 696/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.4878e-06 -
accuracy: 1.0000 - val_loss: 1.5887 - val_accuracy: 0.7692
Epoch 697/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.7841e-06 -
accuracy: 1.0000 - val_loss: 1.5904 - val_accuracy: 0.7692
Epoch 698/1000
1/1 [==============================] - 0s 39ms/step - loss: 1.9650e-06 -
accuracy: 1.0000 - val_loss: 1.5915 - val_accuracy: 0.7692
Epoch 699/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.9836e-06 -
accuracy: 1.0000 - val_loss: 1.5923 - val_accuracy: 0.7692
Epoch 700/1000
1/1 [==============================] - 0s 34ms/step - loss: 9.0144e-06 -
accuracy: 1.0000 - val_loss: 1.5923 - val_accuracy: 0.7692
Epoch 701/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.3413e-06 -
accuracy: 1.0000 - val_loss: 1.5920 - val_accuracy: 0.7692
Epoch 702/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.6239e-05 -
accuracy: 1.0000 - val_loss: 1.5932 - val_accuracy: 0.7692
Epoch 703/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0974e-05 -
accuracy: 1.0000 - val_loss: 1.5934 - val_accuracy: 0.7692
Epoch 704/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.2508e-05 -
accuracy: 1.0000 - val_loss: 1.5926 - val_accuracy: 0.7692
Epoch 705/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 8.3482e-06 -
accuracy: 1.0000 - val_loss: 1.5918 - val_accuracy: 0.7692
Epoch 706/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.1147e-05 -
accuracy: 1.0000 - val_loss: 1.5912 - val_accuracy: 0.7692
Epoch 707/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.2437e-06 -
accuracy: 1.0000 - val_loss: 1.5903 - val_accuracy: 0.7692
Epoch 708/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.1094e-06 -
accuracy: 1.0000 - val_loss: 1.5905 - val_accuracy: 0.7692
Epoch 709/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.2127e-06 -
accuracy: 1.0000 - val_loss: 1.5913 - val_accuracy: 0.7692
Epoch 710/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.1240e-05 -
accuracy: 1.0000 - val_loss: 1.5938 - val_accuracy: 0.7692
Epoch 711/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.4399e-06 -
accuracy: 1.0000 - val_loss: 1.5959 - val_accuracy: 0.7692
Epoch 712/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.0564e-06 -
accuracy: 1.0000 - val_loss: 1.5978 - val_accuracy: 0.7692
Epoch 713/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.1155e-05 -
accuracy: 1.0000 - val_loss: 1.6002 - val_accuracy: 0.7692
Epoch 714/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.2725e-05 -
accuracy: 1.0000 - val_loss: 1.6011 - val_accuracy: 0.7692
Epoch 715/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.5023e-05 -
accuracy: 1.0000 - val_loss: 1.6044 - val_accuracy: 0.7692
Epoch 716/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.4169e-06 -
accuracy: 1.0000 - val_loss: 1.6074 - val_accuracy: 0.7692
Epoch 717/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.1991e-06 -
accuracy: 1.0000 - val_loss: 1.6096 - val_accuracy: 0.7692
Epoch 718/1000
1/1 [==============================] - 0s 30ms/step - loss: 7.0752e-06 -
accuracy: 1.0000 - val_loss: 1.6096 - val_accuracy: 0.7692
Epoch 719/1000
1/1 [==============================] - 0s 33ms/step - loss: 9.2855e-06 -
accuracy: 1.0000 - val_loss: 1.6076 - val_accuracy: 0.7692
Epoch 720/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.0295e-05 -
accuracy: 1.0000 - val_loss: 1.6062 - val_accuracy: 0.7692
Epoch 721/1000
```

```
1/1 [==============================] - 0s 36ms/step - loss: 4.7667e-06 -
accuracy: 1.0000 - val_loss: 1.6040 - val_accuracy: 0.7692
Epoch 722/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.9423e-06 -
accuracy: 1.0000 - val_loss: 1.6023 - val_accuracy: 0.7692
Epoch 723/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.3845e-06 -
accuracy: 1.0000 - val_loss: 1.6014 - val_accuracy: 0.7692
Epoch 724/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.0824e-06 -
accuracy: 1.0000 - val_loss: 1.6005 - val_accuracy: 0.7692
Epoch 725/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.4723e-06 -
accuracy: 1.0000 - val_loss: 1.5994 - val_accuracy: 0.7692
Epoch 726/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.2897e-06 -
accuracy: 1.0000 - val_loss: 1.5985 - val_accuracy: 0.7692
Epoch 727/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.7932e-06 -
accuracy: 1.0000 - val_loss: 1.5980 - val_accuracy: 0.7692
Epoch 728/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.3319e-05 -
accuracy: 1.0000 - val_loss: 1.5980 - val_accuracy: 0.7692
Epoch 729/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.0373e-06 -
accuracy: 1.0000 - val_loss: 1.5983 - val_accuracy: 0.7692
Epoch 730/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.0308e-06 -
accuracy: 1.0000 - val_loss: 1.5978 - val_accuracy: 0.7692
Epoch 731/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.0197e-05 -
accuracy: 1.0000 - val_loss: 1.5990 - val_accuracy: 0.7692
Epoch 732/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.4735e-06 -
accuracy: 1.0000 - val_loss: 1.5997 - val_accuracy: 0.7692
Epoch 733/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.4172e-06 -
accuracy: 1.0000 - val_loss: 1.5997 - val_accuracy: 0.7692
Epoch 734/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.3036e-06 -
accuracy: 1.0000 - val_loss: 1.6000 - val_accuracy: 0.7692
Epoch 735/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.7481e-06 -
accuracy: 1.0000 - val_loss: 1.6003 - val_accuracy: 0.7692
Epoch 736/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.7507e-06 -
accuracy: 1.0000 - val_loss: 1.6005 - val_accuracy: 0.7692
Epoch 737/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 6.6723e-06 -
accuracy: 1.0000 - val_loss: 1.6001 - val_accuracy: 0.7692
Epoch 738/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.1890e-06 -
accuracy: 1.0000 - val_loss: 1.5999 - val_accuracy: 0.7692
Epoch 739/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.2721e-06 -
accuracy: 1.0000 - val_loss: 1.6010 - val_accuracy: 0.7692
Epoch 740/1000
1/1 [==============================] - 0s 37ms/step - loss: 3.3465e-06 -
accuracy: 1.0000 - val_loss: 1.6023 - val_accuracy: 0.7692
Epoch 741/1000
1/1 [==============================] - 0s 32ms/step - loss: 7.8369e-06 -
accuracy: 1.0000 - val_loss: 1.6040 - val_accuracy: 0.7692
Epoch 742/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.6467e-06 -
accuracy: 1.0000 - val_loss: 1.6056 - val_accuracy: 0.7692
Epoch 743/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.6451e-06 -
accuracy: 1.0000 - val_loss: 1.6069 - val_accuracy: 0.7692
Epoch 744/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.3288e-05 -
accuracy: 1.0000 - val_loss: 1.6062 - val_accuracy: 0.7692
Epoch 745/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.3052e-06 -
accuracy: 1.0000 - val_loss: 1.6049 - val_accuracy: 0.7692
Epoch 746/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.2387e-06 -
accuracy: 1.0000 - val_loss: 1.6037 - val_accuracy: 0.7692
Epoch 747/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.5751e-06 -
accuracy: 1.0000 - val_loss: 1.6025 - val_accuracy: 0.7692
Epoch 748/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.8139e-06 -
accuracy: 1.0000 - val_loss: 1.6023 - val_accuracy: 0.7692
Epoch 749/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.0390e-06 -
accuracy: 1.0000 - val_loss: 1.6007 - val_accuracy: 0.7692
Epoch 750/1000
1/1 [==============================] - 0s 34ms/step - loss: 7.5425e-06 -
accuracy: 1.0000 - val_loss: 1.5997 - val_accuracy: 0.7692
Epoch 751/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.8294e-06 -
accuracy: 1.0000 - val_loss: 1.5989 - val_accuracy: 0.7692
Epoch 752/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.1018e-05 -
accuracy: 1.0000 - val_loss: 1.5977 - val_accuracy: 0.7692
Epoch 753/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 4.1341e-06 -
accuracy: 1.0000 - val_loss: 1.5970 - val_accuracy: 0.7692
Epoch 754/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.2136e-05 -
accuracy: 1.0000 - val_loss: 1.5992 - val_accuracy: 0.7692
Epoch 755/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.4124e-06 -
accuracy: 1.0000 - val_loss: 1.6011 - val_accuracy: 0.7692
Epoch 756/1000
1/1 [==============================] - 0s 38ms/step - loss: 9.2106e-06 -
accuracy: 1.0000 - val_loss: 1.6017 - val_accuracy: 0.7692
Epoch 757/1000
1/1 [==============================] - 0s 31ms/step - loss: 9.7735e-06 -
accuracy: 1.0000 - val_loss: 1.6011 - val_accuracy: 0.7692
Epoch 758/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.6519e-06 -
accuracy: 1.0000 - val_loss: 1.6006 - val_accuracy: 0.7692
Epoch 759/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.1223e-06 -
accuracy: 1.0000 - val_loss: 1.5996 - val_accuracy: 0.7692
Epoch 760/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.0913e-06 -
accuracy: 1.0000 - val_loss: 1.5983 - val_accuracy: 0.7692
Epoch 761/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.6132e-06 -
accuracy: 1.0000 - val_loss: 1.5975 - val_accuracy: 0.7692
Epoch 762/1000
1/1 [==============================] - 0s 35ms/step - loss: 6.8789e-06 -
accuracy: 1.0000 - val_loss: 1.5966 - val_accuracy: 0.7692
Epoch 763/1000
1/1 [==============================] - 0s 30ms/step - loss: 8.2371e-06 -
accuracy: 1.0000 - val_loss: 1.5946 - val_accuracy: 0.7692
Epoch 764/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.4512e-06 -
accuracy: 1.0000 - val_loss: 1.5927 - val_accuracy: 0.7692
Epoch 765/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.5207e-06 -
accuracy: 1.0000 - val_loss: 1.5901 - val_accuracy: 0.7692
Epoch 766/1000
1/1 [==============================] - 0s 32ms/step - loss: 8.2681e-06 -
accuracy: 1.0000 - val_loss: 1.5874 - val_accuracy: 0.7692
Epoch 767/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.5388e-06 -
accuracy: 1.0000 - val_loss: 1.5855 - val_accuracy: 0.7692
Epoch 768/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.0993e-06 -
accuracy: 1.0000 - val_loss: 1.5840 - val_accuracy: 0.7692
Epoch 769/1000
```

```
1/1 [==============================] - 0s 32ms/step - loss: 9.9259e-06 -
accuracy: 1.0000 - val_loss: 1.5824 - val_accuracy: 0.7692
Epoch 770/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.0106e-06 -
accuracy: 1.0000 - val_loss: 1.5812 - val_accuracy: 0.7692
Epoch 771/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.2949e-06 -
accuracy: 1.0000 - val_loss: 1.5804 - val_accuracy: 0.7692
Epoch 772/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.6904e-06 -
accuracy: 1.0000 - val_loss: 1.5809 - val_accuracy: 0.7692
Epoch 773/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.1695e-06 -
accuracy: 1.0000 - val_loss: 1.5820 - val_accuracy: 0.7692
Epoch 774/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.2045e-06 -
accuracy: 1.0000 - val_loss: 1.5835 - val_accuracy: 0.7692
Epoch 775/1000
1/1 [==============================] - 0s 36ms/step - loss: 7.5090e-06 -
accuracy: 1.0000 - val_loss: 1.5836 - val_accuracy: 0.7692
Epoch 776/1000
1/1 [==============================] - 0s 30ms/step - loss: 9.1641e-06 -
accuracy: 1.0000 - val_loss: 1.5838 - val_accuracy: 0.7692
Epoch 777/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.7632e-06 -
accuracy: 1.0000 - val_loss: 1.5837 - val_accuracy: 0.7692
Epoch 778/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.4444e-06 -
accuracy: 1.0000 - val_loss: 1.5836 - val_accuracy: 0.7692
Epoch 779/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.1953e-06 -
accuracy: 1.0000 - val_loss: 1.5834 - val_accuracy: 0.7692
Epoch 780/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.2859e-06 -
accuracy: 1.0000 - val_loss: 1.5833 - val_accuracy: 0.7692
Epoch 781/1000
1/1 [==============================] - 0s 29ms/step - loss: 7.8446e-06 -
accuracy: 1.0000 - val_loss: 1.5835 - val_accuracy: 0.7692
Epoch 782/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.8557e-06 -
accuracy: 1.0000 - val_loss: 1.5844 - val_accuracy: 0.7692
Epoch 783/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.7273e-06 -
accuracy: 1.0000 - val_loss: 1.5848 - val_accuracy: 0.7692
Epoch 784/1000
1/1 [==============================] - 0s 34ms/step - loss: 8.1597e-07 -
accuracy: 1.0000 - val_loss: 1.5851 - val_accuracy: 0.7692
Epoch 785/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 1.1868e-05 -
accuracy: 1.0000 - val_loss: 1.5883 - val_accuracy: 0.7692
Epoch 786/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.1927e-05 -
accuracy: 1.0000 - val_loss: 1.5922 - val_accuracy: 0.7692
Epoch 787/1000
1/1 [==============================] - 0s 36ms/step - loss: 6.3392e-06 -
accuracy: 1.0000 - val_loss: 1.5947 - val_accuracy: 0.7692
Epoch 788/1000
1/1 [==============================] - 0s 30ms/step - loss: 6.0552e-06 -
accuracy: 1.0000 - val_loss: 1.5984 - val_accuracy: 0.7692
Epoch 789/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.0845e-06 -
accuracy: 1.0000 - val_loss: 1.6015 - val_accuracy: 0.7692
Epoch 790/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.2110e-06 -
accuracy: 1.0000 - val_loss: 1.6045 - val_accuracy: 0.7692
Epoch 791/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.8197e-06 -
accuracy: 1.0000 - val_loss: 1.6073 - val_accuracy: 0.7692
Epoch 792/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.9460e-06 -
accuracy: 1.0000 - val_loss: 1.6088 - val_accuracy: 0.7692
Epoch 793/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.5303e-06 -
accuracy: 1.0000 - val_loss: 1.6100 - val_accuracy: 0.7692
Epoch 794/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.7364e-06 -
accuracy: 1.0000 - val_loss: 1.6097 - val_accuracy: 0.7692
Epoch 795/1000
1/1 [==============================] - 0s 29ms/step - loss: 5.5104e-06 -
accuracy: 1.0000 - val_loss: 1.6092 - val_accuracy: 0.7692
Epoch 796/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.3782e-06 -
accuracy: 1.0000 - val_loss: 1.6087 - val_accuracy: 0.7692
Epoch 797/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.4627e-06 -
accuracy: 1.0000 - val_loss: 1.6084 - val_accuracy: 0.7692
Epoch 798/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.9268e-06 -
accuracy: 1.0000 - val_loss: 1.6079 - val_accuracy: 0.7692
Epoch 799/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.6571e-06 -
accuracy: 1.0000 - val_loss: 1.6078 - val_accuracy: 0.7692
Epoch 800/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.4789e-06 -
accuracy: 1.0000 - val_loss: 1.6071 - val_accuracy: 0.7692
Epoch 801/1000
```

```
1/1 [==============================] - 0s 30ms/step - loss: 3.9714e-06 -
accuracy: 1.0000 - val_loss: 1.6071 - val_accuracy: 0.7692
Epoch 802/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.3815e-06 -
accuracy: 1.0000 - val_loss: 1.6069 - val_accuracy: 0.7692
Epoch 803/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.1845e-06 -
accuracy: 1.0000 - val_loss: 1.6067 - val_accuracy: 0.7692
Epoch 804/1000
1/1 [==============================] - 0s 35ms/step - loss: 9.2519e-06 -
accuracy: 1.0000 - val_loss: 1.6047 - val_accuracy: 0.7692
Epoch 805/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.5744e-06 -
accuracy: 1.0000 - val_loss: 1.6033 - val_accuracy: 0.7692
Epoch 806/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.3613e-06 -
accuracy: 1.0000 - val_loss: 1.6017 - val_accuracy: 0.7692
Epoch 807/1000
1/1 [==============================] - 0s 33ms/step - loss: 3.0909e-05 -
accuracy: 1.0000 - val_loss: 1.6002 - val_accuracy: 0.7692
Epoch 808/1000
1/1 [==============================] - 0s 31ms/step - loss: 7.1655e-06 -
accuracy: 1.0000 - val_loss: 1.5986 - val_accuracy: 0.7692
Epoch 809/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.8564e-05 -
accuracy: 1.0000 - val_loss: 1.5976 - val_accuracy: 0.7692
Epoch 810/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.6887e-06 -
accuracy: 1.0000 - val_loss: 1.5967 - val_accuracy: 0.7692
Epoch 811/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.1967e-06 -
accuracy: 1.0000 - val_loss: 1.5952 - val_accuracy: 0.7692
Epoch 812/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.6800e-05 -
accuracy: 1.0000 - val_loss: 1.5942 - val_accuracy: 0.7692
Epoch 813/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.2019e-06 -
accuracy: 1.0000 - val_loss: 1.5933 - val_accuracy: 0.7692
Epoch 814/1000
1/1 [==============================] - 0s 33ms/step - loss: 9.3139e-06 -
accuracy: 1.0000 - val_loss: 1.5929 - val_accuracy: 0.7692
Epoch 815/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.4092e-06 -
accuracy: 1.0000 - val_loss: 1.5923 - val_accuracy: 0.7692
Epoch 816/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.6169e-06 -
accuracy: 1.0000 - val_loss: 1.5921 - val_accuracy: 0.7692
Epoch 817/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 1.3324e-06 -
accuracy: 1.0000 - val_loss: 1.5919 - val_accuracy: 0.7692
Epoch 818/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.0604e-06 -
accuracy: 1.0000 - val_loss: 1.5919 - val_accuracy: 0.7692
Epoch 819/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.1399e-06 -
accuracy: 1.0000 - val_loss: 1.5920 - val_accuracy: 0.7692
Epoch 820/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.8829e-06 -
accuracy: 1.0000 - val_loss: 1.5924 - val_accuracy: 0.7692
Epoch 821/1000
1/1 [==============================] - 0s 30ms/step - loss: 9.4740e-06 -
accuracy: 1.0000 - val_loss: 1.5957 - val_accuracy: 0.7692
Epoch 822/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.4634e-06 -
accuracy: 1.0000 - val_loss: 1.5982 - val_accuracy: 0.7692
Epoch 823/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.0733e-06 -
accuracy: 1.0000 - val_loss: 1.6022 - val_accuracy: 0.7692
Epoch 824/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.0845e-06 -
accuracy: 1.0000 - val_loss: 1.6057 - val_accuracy: 0.7692
Epoch 825/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.2671e-06 -
accuracy: 1.0000 - val_loss: 1.6084 - val_accuracy: 0.7692
Epoch 826/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.0378e-05 -
accuracy: 1.0000 - val_loss: 1.6121 - val_accuracy: 0.7692
Epoch 827/1000
1/1 [==============================] - 0s 33ms/step - loss: 7.2301e-06 -
accuracy: 1.0000 - val_loss: 1.6140 - val_accuracy: 0.7692
Epoch 828/1000
1/1 [==============================] - 0s 37ms/step - loss: 5.8564e-06 -
accuracy: 1.0000 - val_loss: 1.6159 - val_accuracy: 0.7692
Epoch 829/1000
1/1 [==============================] - 0s 38ms/step - loss: 7.5890e-06 -
accuracy: 1.0000 - val_loss: 1.6174 - val_accuracy: 0.7692
Epoch 830/1000
1/1 [==============================] - 0s 37ms/step - loss: 5.8460e-06 -
accuracy: 1.0000 - val_loss: 1.6181 - val_accuracy: 0.7692
Epoch 831/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.0043e-06 -
accuracy: 1.0000 - val_loss: 1.6190 - val_accuracy: 0.7692
Epoch 832/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.2406e-06 -
accuracy: 1.0000 - val_loss: 1.6199 - val_accuracy: 0.7692
Epoch 833/1000
```

```
1/1 [==============================] - 0s 34ms/step - loss: 1.8256e-06 -
accuracy: 1.0000 - val_loss: 1.6205 - val_accuracy: 0.7692
Epoch 834/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.2470e-06 -
accuracy: 1.0000 - val_loss: 1.6219 - val_accuracy: 0.7692
Epoch 835/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.2716e-06 -
accuracy: 1.0000 - val_loss: 1.6232 - val_accuracy: 0.7692
Epoch 836/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.7326e-06 -
accuracy: 1.0000 - val_loss: 1.6244 - val_accuracy: 0.7692
Epoch 837/1000
1/1 [==============================] - 0s 36ms/step - loss: 7.2740e-06 -
accuracy: 1.0000 - val_loss: 1.6243 - val_accuracy: 0.7692
Epoch 838/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.3052e-06 -
accuracy: 1.0000 - val_loss: 1.6240 - val_accuracy: 0.7692
Epoch 839/1000
1/1 [==============================] - 0s 30ms/step - loss: 4.5420e-06 -
accuracy: 1.0000 - val_loss: 1.6244 - val_accuracy: 0.7692
Epoch 840/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.6958e-06 -
accuracy: 1.0000 - val_loss: 1.6250 - val_accuracy: 0.7692
Epoch 841/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.9230e-06 -
accuracy: 1.0000 - val_loss: 1.6257 - val_accuracy: 0.7692
Epoch 842/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.6531e-06 -
accuracy: 1.0000 - val_loss: 1.6260 - val_accuracy: 0.7692
Epoch 843/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.6125e-06 -
accuracy: 1.0000 - val_loss: 1.6260 - val_accuracy: 0.7692
Epoch 844/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.2747e-06 -
accuracy: 1.0000 - val_loss: 1.6261 - val_accuracy: 0.7692
Epoch 845/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.5409e-06 -
accuracy: 1.0000 - val_loss: 1.6259 - val_accuracy: 0.7692
Epoch 846/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.4510e-06 -
accuracy: 1.0000 - val_loss: 1.6258 - val_accuracy: 0.7692
Epoch 847/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.6409e-06 -
accuracy: 1.0000 - val_loss: 1.6260 - val_accuracy: 0.7692
Epoch 848/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.1225e-06 -
accuracy: 1.0000 - val_loss: 1.6260 - val_accuracy: 0.7692
Epoch 849/1000
```

```
1/1 [==============================] - 0s 30ms/step - loss: 3.3129e-06 -
accuracy: 1.0000 - val_loss: 1.6265 - val_accuracy: 0.7692
Epoch 850/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.6113e-06 -
accuracy: 1.0000 - val_loss: 1.6272 - val_accuracy: 0.7692
Epoch 851/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.1068e-06 -
accuracy: 1.0000 - val_loss: 1.6268 - val_accuracy: 0.7692
Epoch 852/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.3472e-06 -
accuracy: 1.0000 - val_loss: 1.6268 - val_accuracy: 0.7692
Epoch 853/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.2152e-05 -
accuracy: 1.0000 - val_loss: 1.6255 - val_accuracy: 0.7692
Epoch 854/1000
1/1 [==============================] - 0s 32ms/step - loss: 4.4233e-06 -
accuracy: 1.0000 - val_loss: 1.6251 - val_accuracy: 0.7692
Epoch 855/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.5111e-06 -
accuracy: 1.0000 - val_loss: 1.6248 - val_accuracy: 0.7692
Epoch 856/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.9977e-07 -
accuracy: 1.0000 - val_loss: 1.6244 - val_accuracy: 0.7692
Epoch 857/1000
1/1 [==============================] - 0s 36ms/step - loss: 4.7589e-06 -
accuracy: 1.0000 - val_loss: 1.6238 - val_accuracy: 0.7692
Epoch 858/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.9604e-06 -
accuracy: 1.0000 - val_loss: 1.6236 - val_accuracy: 0.7692
Epoch 859/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.7498e-06 -
accuracy: 1.0000 - val_loss: 1.6245 - val_accuracy: 0.7692
Epoch 860/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.1521e-06 -
accuracy: 1.0000 - val_loss: 1.6254 - val_accuracy: 0.7692
Epoch 861/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.6726e-05 -
accuracy: 1.0000 - val_loss: 1.6263 - val_accuracy: 0.7692
Epoch 862/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.5317e-06 -
accuracy: 1.0000 - val_loss: 1.6260 - val_accuracy: 0.7692
Epoch 863/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.3911e-06 -
accuracy: 1.0000 - val_loss: 1.6256 - val_accuracy: 0.7692
Epoch 864/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.8310e-07 -
accuracy: 1.0000 - val_loss: 1.6252 - val_accuracy: 0.7692
Epoch 865/1000
```

```
1/1 [==============================] - 0s 30ms/step - loss: 8.5728e-07 -
accuracy: 1.0000 - val_loss: 1.6249 - val_accuracy: 0.7692
Epoch 866/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.3763e-06 -
accuracy: 1.0000 - val_loss: 1.6247 - val_accuracy: 0.7692
Epoch 867/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.0948e-06 -
accuracy: 1.0000 - val_loss: 1.6247 - val_accuracy: 0.7692
Epoch 868/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.9991e-06 -
accuracy: 1.0000 - val_loss: 1.6250 - val_accuracy: 0.7692
Epoch 869/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.8230e-06 -
accuracy: 1.0000 - val_loss: 1.6249 - val_accuracy: 0.7692
Epoch 870/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.2594e-06 -
accuracy: 1.0000 - val_loss: 1.6248 - val_accuracy: 0.7692
Epoch 871/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.3165e-05 -
accuracy: 1.0000 - val_loss: 1.6249 - val_accuracy: 0.7692
Epoch 872/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.8430e-06 -
accuracy: 1.0000 - val_loss: 1.6246 - val_accuracy: 0.7692
Epoch 873/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.8017e-06 -
accuracy: 1.0000 - val_loss: 1.6243 - val_accuracy: 0.7692
Epoch 874/1000
1/1 [==============================] - 0s 30ms/step - loss: 5.9493e-06 -
accuracy: 1.0000 - val_loss: 1.6255 - val_accuracy: 0.7692
Epoch 875/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.7836e-06 -
accuracy: 1.0000 - val_loss: 1.6269 - val_accuracy: 0.7692
Epoch 876/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.1418e-06 -
accuracy: 1.0000 - val_loss: 1.6285 - val_accuracy: 0.7692
Epoch 877/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.0683e-06 -
accuracy: 1.0000 - val_loss: 1.6305 - val_accuracy: 0.7692
Epoch 878/1000
1/1 [==============================] - 0s 30ms/step - loss: 7.0571e-06 -
accuracy: 1.0000 - val_loss: 1.6318 - val_accuracy: 0.7692
Epoch 879/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.2375e-05 -
accuracy: 1.0000 - val_loss: 1.6336 - val_accuracy: 0.7692
Epoch 880/1000
1/1 [==============================] - 0s 35ms/step - loss: 3.9301e-06 -
accuracy: 1.0000 - val_loss: 1.6340 - val_accuracy: 0.7692
Epoch 881/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 2.5073e-06 -
accuracy: 1.0000 - val_loss: 1.6347 - val_accuracy: 0.7692
Epoch 882/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.7606e-07 -
accuracy: 1.0000 - val_loss: 1.6351 - val_accuracy: 0.7692
Epoch 883/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.7164e-06 -
accuracy: 1.0000 - val_loss: 1.6352 - val_accuracy: 0.7692
Epoch 884/1000
1/1 [==============================] - 0s 35ms/step - loss: 5.2108e-06 -
accuracy: 1.0000 - val_loss: 1.6349 - val_accuracy: 0.7692
Epoch 885/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.2860e-05 -
accuracy: 1.0000 - val_loss: 1.6346 - val_accuracy: 0.7692
Epoch 886/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.7343e-06 -
accuracy: 1.0000 - val_loss: 1.6349 - val_accuracy: 0.7692
Epoch 887/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.0031e-06 -
accuracy: 1.0000 - val_loss: 1.6355 - val_accuracy: 0.7692
Epoch 888/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.6573e-05 -
accuracy: 1.0000 - val_loss: 1.6367 - val_accuracy: 0.7692
Epoch 889/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.2387e-06 -
accuracy: 1.0000 - val_loss: 1.6377 - val_accuracy: 0.7692
Epoch 890/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.1491e-06 -
accuracy: 1.0000 - val_loss: 1.6386 - val_accuracy: 0.7692
Epoch 891/1000
1/1 [==============================] - 0s 34ms/step - loss: 5.6007e-06 -
accuracy: 1.0000 - val_loss: 1.6389 - val_accuracy: 0.7692
Epoch 892/1000
1/1 [==============================] - 0s 37ms/step - loss: 2.8223e-06 -
accuracy: 1.0000 - val_loss: 1.6386 - val_accuracy: 0.7692
Epoch 893/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.1064e-06 -
accuracy: 1.0000 - val_loss: 1.6378 - val_accuracy: 0.7692
Epoch 894/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.3503e-06 -
accuracy: 1.0000 - val_loss: 1.6360 - val_accuracy: 0.7692
Epoch 895/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.6087e-06 -
accuracy: 1.0000 - val_loss: 1.6347 - val_accuracy: 0.7692
Epoch 896/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.0237e-06 -
accuracy: 1.0000 - val_loss: 1.6339 - val_accuracy: 0.7692
Epoch 897/1000
```

```
1/1 [==============================] - 0s 39ms/step - loss: 3.6667e-06 -
accuracy: 1.0000 - val_loss: 1.6331 - val_accuracy: 0.7692
Epoch 898/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.8127e-06 -
accuracy: 1.0000 - val_loss: 1.6320 - val_accuracy: 0.7692
Epoch 899/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.3697e-06 -
accuracy: 1.0000 - val_loss: 1.6313 - val_accuracy: 0.7692
Epoch 900/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.9488e-06 -
accuracy: 1.0000 - val_loss: 1.6313 - val_accuracy: 0.7692
Epoch 901/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.4951e-06 -
accuracy: 1.0000 - val_loss: 1.6312 - val_accuracy: 0.7692
Epoch 902/1000
1/1 [==============================] - 0s 33ms/step - loss: 6.8118e-06 -
accuracy: 1.0000 - val_loss: 1.6330 - val_accuracy: 0.7692
Epoch 903/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.4841e-06 -
accuracy: 1.0000 - val_loss: 1.6346 - val_accuracy: 0.7692
Epoch 904/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.9754e-06 -
accuracy: 1.0000 - val_loss: 1.6358 - val_accuracy: 0.7692
Epoch 905/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.2627e-06 -
accuracy: 1.0000 - val_loss: 1.6367 - val_accuracy: 0.7692
Epoch 906/1000
1/1 [==============================] - 0s 34ms/step - loss: 9.7606e-07 -
accuracy: 1.0000 - val_loss: 1.6376 - val_accuracy: 0.7692
Epoch 907/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.5395e-06 -
accuracy: 1.0000 - val_loss: 1.6375 - val_accuracy: 0.7692
Epoch 908/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.0447e-05 -
accuracy: 1.0000 - val_loss: 1.6369 - val_accuracy: 0.7692
Epoch 909/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.4409e-06 -
accuracy: 1.0000 - val_loss: 1.6365 - val_accuracy: 0.7692
Epoch 910/1000
1/1 [==============================] - 0s 31ms/step - loss: 5.7324e-06 -
accuracy: 1.0000 - val_loss: 1.6357 - val_accuracy: 0.7692
Epoch 911/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.8545e-06 -
accuracy: 1.0000 - val_loss: 1.6362 - val_accuracy: 0.7692
Epoch 912/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.7003e-06 -
accuracy: 1.0000 - val_loss: 1.6376 - val_accuracy: 0.7692
Epoch 913/1000
```

```
1/1 [==============================] - 0s 32ms/step - loss: 4.0643e-06 -
accuracy: 1.0000 - val_loss: 1.6401 - val_accuracy: 0.7692
Epoch 914/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.3350e-06 -
accuracy: 1.0000 - val_loss: 1.6418 - val_accuracy: 0.7692
Epoch 915/1000
1/1 [==============================] - 0s 31ms/step - loss: 6.2437e-06 -
accuracy: 1.0000 - val_loss: 1.6441 - val_accuracy: 0.7692
Epoch 916/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.5399e-07 -
accuracy: 1.0000 - val_loss: 1.6461 - val_accuracy: 0.7692
Epoch 917/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.6209e-06 -
accuracy: 1.0000 - val_loss: 1.6479 - val_accuracy: 0.7692
Epoch 918/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.3801e-06 -
accuracy: 1.0000 - val_loss: 1.6501 - val_accuracy: 0.7692
Epoch 919/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.9266e-05 -
accuracy: 1.0000 - val_loss: 1.6524 - val_accuracy: 0.7692
Epoch 920/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.2043e-07 -
accuracy: 1.0000 - val_loss: 1.6543 - val_accuracy: 0.8077
Epoch 921/1000
1/1 [==============================] - 0s 35ms/step - loss: 8.0925e-06 -
accuracy: 1.0000 - val_loss: 1.6534 - val_accuracy: 0.7692
Epoch 922/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.0547e-06 -
accuracy: 1.0000 - val_loss: 1.6523 - val_accuracy: 0.7692
Epoch 923/1000
1/1 [==============================] - 0s 32ms/step - loss: 8.3146e-06 -
accuracy: 1.0000 - val_loss: 1.6522 - val_accuracy: 0.7692
Epoch 924/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.7925e-06 -
accuracy: 1.0000 - val_loss: 1.6519 - val_accuracy: 0.7692
Epoch 925/1000
1/1 [==============================] - 0s 36ms/step - loss: 1.0158e-05 -
accuracy: 1.0000 - val_loss: 1.6522 - val_accuracy: 0.7692
Epoch 926/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.8545e-06 -
accuracy: 1.0000 - val_loss: 1.6508 - val_accuracy: 0.7692
Epoch 927/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.1542e-06 -
accuracy: 1.0000 - val_loss: 1.6496 - val_accuracy: 0.7692
Epoch 928/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.9661e-05 -
accuracy: 1.0000 - val_loss: 1.6488 - val_accuracy: 0.7692
Epoch 929/1000
```

```
1/1 [==============================] - 0s 32ms/step - loss: 8.7432e-06 -
accuracy: 1.0000 - val_loss: 1.6468 - val_accuracy: 0.7692
Epoch 930/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.7247e-06 -
accuracy: 1.0000 - val_loss: 1.6449 - val_accuracy: 0.7692
Epoch 931/1000
1/1 [==============================] - 0s 35ms/step - loss: 1.0401e-05 -
accuracy: 1.0000 - val_loss: 1.6451 - val_accuracy: 0.7692
Epoch 932/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.1451e-06 -
accuracy: 1.0000 - val_loss: 1.6453 - val_accuracy: 0.7692
Epoch 933/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.1723e-06 -
accuracy: 1.0000 - val_loss: 1.6457 - val_accuracy: 0.8077
Epoch 934/1000
1/1 [==============================] - 0s 36ms/step - loss: 5.0611e-06 -
accuracy: 1.0000 - val_loss: 1.6448 - val_accuracy: 0.8077
Epoch 935/1000
1/1 [==============================] - 0s 32ms/step - loss: 8.4489e-06 -
accuracy: 1.0000 - val_loss: 1.6436 - val_accuracy: 0.7692
Epoch 936/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.0526e-06 -
accuracy: 1.0000 - val_loss: 1.6432 - val_accuracy: 0.7692
Epoch 937/1000
1/1 [==============================] - 0s 32ms/step - loss: 9.0634e-07 -
accuracy: 1.0000 - val_loss: 1.6429 - val_accuracy: 0.8077
Epoch 938/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.7010e-06 -
accuracy: 1.0000 - val_loss: 1.6433 - val_accuracy: 0.8077
Epoch 939/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.5409e-06 -
accuracy: 1.0000 - val_loss: 1.6437 - val_accuracy: 0.8077
Epoch 940/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.7294e-06 -
accuracy: 1.0000 - val_loss: 1.6444 - val_accuracy: 0.8077
Epoch 941/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.4305e-06 -
accuracy: 1.0000 - val_loss: 1.6449 - val_accuracy: 0.8077
Epoch 942/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.1078e-06 -
accuracy: 1.0000 - val_loss: 1.6456 - val_accuracy: 0.8077
Epoch 943/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.7331e-06 -
accuracy: 1.0000 - val_loss: 1.6454 - val_accuracy: 0.8077
Epoch 944/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.3686e-06 -
accuracy: 1.0000 - val_loss: 1.6451 - val_accuracy: 0.8077
Epoch 945/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 3.4601e-06 -
accuracy: 1.0000 - val_loss: 1.6440 - val_accuracy: 0.8077
Epoch 946/1000
1/1 [==============================] - 0s 98ms/step - loss: 5.0482e-06 -
accuracy: 1.0000 - val_loss: 1.6425 - val_accuracy: 0.8077
Epoch 947/1000
1/1 [==============================] - 0s 33ms/step - loss: 2.4711e-06 -
accuracy: 1.0000 - val_loss: 1.6407 - val_accuracy: 0.7692
Epoch 948/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.3679e-06 -
accuracy: 1.0000 - val_loss: 1.6393 - val_accuracy: 0.7692
Epoch 949/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.8869e-06 -
accuracy: 1.0000 - val_loss: 1.6381 - val_accuracy: 0.7692
Epoch 950/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.2136e-06 -
accuracy: 1.0000 - val_loss: 1.6369 - val_accuracy: 0.7692
Epoch 951/1000
1/1 [==============================] - 0s 37ms/step - loss: 9.0634e-07 -
accuracy: 1.0000 - val_loss: 1.6357 - val_accuracy: 0.7692
Epoch 952/1000
1/1 [==============================] - 0s 32ms/step - loss: 7.9789e-07 -
accuracy: 1.0000 - val_loss: 1.6345 - val_accuracy: 0.7692
Epoch 953/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.5357e-06 -
accuracy: 1.0000 - val_loss: 1.6338 - val_accuracy: 0.7692
Epoch 954/1000
1/1 [==============================] - 0s 38ms/step - loss: 6.1043e-06 -
accuracy: 1.0000 - val_loss: 1.6334 - val_accuracy: 0.7692
Epoch 955/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.5279e-06 -
accuracy: 1.0000 - val_loss: 1.6335 - val_accuracy: 0.7692
Epoch 956/1000
1/1 [==============================] - 0s 35ms/step - loss: 2.1484e-06 -
accuracy: 1.0000 - val_loss: 1.6337 - val_accuracy: 0.7692
Epoch 957/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.4841e-06 -
accuracy: 1.0000 - val_loss: 1.6343 - val_accuracy: 0.7692
Epoch 958/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.7869e-06 -
accuracy: 1.0000 - val_loss: 1.6353 - val_accuracy: 0.7692
Epoch 959/1000
1/1 [==============================] - 0s 36ms/step - loss: 7.1268e-07 -
accuracy: 1.0000 - val_loss: 1.6362 - val_accuracy: 0.7692
Epoch 960/1000
1/1 [==============================] - 0s 31ms/step - loss: 3.3981e-06 -
accuracy: 1.0000 - val_loss: 1.6380 - val_accuracy: 0.7692
Epoch 961/1000
```

```
1/1 [==============================] - 0s 31ms/step - loss: 1.7791e-06 -
accuracy: 1.0000 - val_loss: 1.6394 - val_accuracy: 0.7692
Epoch 962/1000
1/1 [==============================] - 0s 32ms/step - loss: 6.9176e-06 -
accuracy: 1.0000 - val_loss: 1.6410 - val_accuracy: 0.7692
Epoch 963/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.4505e-06 -
accuracy: 1.0000 - val_loss: 1.6416 - val_accuracy: 0.7692
Epoch 964/1000
1/1 [==============================] - 0s 34ms/step - loss: 4.3510e-06 -
accuracy: 1.0000 - val_loss: 1.6415 - val_accuracy: 0.7692
Epoch 965/1000
1/1 [==============================] - 0s 31ms/step - loss: 4.9320e-07 -
accuracy: 1.0000 - val_loss: 1.6415 - val_accuracy: 0.7692
Epoch 966/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.9204e-06 -
accuracy: 1.0000 - val_loss: 1.6417 - val_accuracy: 0.7692
Epoch 967/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.7733e-06 -
accuracy: 1.0000 - val_loss: 1.6424 - val_accuracy: 0.7692
Epoch 968/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.5596e-06 -
accuracy: 1.0000 - val_loss: 1.6431 - val_accuracy: 0.7692
Epoch 969/1000
1/1 [==============================] - 0s 35ms/step - loss: 4.2812e-06 -
accuracy: 1.0000 - val_loss: 1.6439 - val_accuracy: 0.7692
Epoch 970/1000
1/1 [==============================] - 0s 29ms/step - loss: 2.7681e-06 -
accuracy: 1.0000 - val_loss: 1.6444 - val_accuracy: 0.7692
Epoch 971/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.1897e-06 -
accuracy: 1.0000 - val_loss: 1.6446 - val_accuracy: 0.7692
Epoch 972/1000
1/1 [==============================] - 0s 34ms/step - loss: 1.6629e-06 -
accuracy: 1.0000 - val_loss: 1.6445 - val_accuracy: 0.7692
Epoch 973/1000
1/1 [==============================] - 0s 31ms/step - loss: 1.4202e-06 -
accuracy: 1.0000 - val_loss: 1.6446 - val_accuracy: 0.7692
Epoch 974/1000
1/1 [==============================] - 0s 34ms/step - loss: 3.0082e-06 -
accuracy: 1.0000 - val_loss: 1.6437 - val_accuracy: 0.7692
Epoch 975/1000
1/1 [==============================] - 0s 30ms/step - loss: 1.7946e-06 -
accuracy: 1.0000 - val_loss: 1.6428 - val_accuracy: 0.7692
Epoch 976/1000
1/1 [==============================] - 0s 31ms/step - loss: 2.7294e-06 -
accuracy: 1.0000 - val_loss: 1.6412 - val_accuracy: 0.7692
Epoch 977/1000
```

```
1/1 [==============================] - 0s 33ms/step - loss: 4.1496e-06 -
accuracy: 1.0000 - val_loss: 1.6401 - val_accuracy: 0.7692
Epoch 978/1000
1/1 [==============================] - 0s 36ms/step - loss: 3.8681e-06 -
accuracy: 1.0000 - val_loss: 1.6389 - val_accuracy: 0.7692
Epoch 979/1000
1/1 [==============================] - 0s 34ms/step - loss: 6.0345e-06 -
accuracy: 1.0000 - val_loss: 1.6374 - val_accuracy: 0.7692
Epoch 980/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.9113e-06 -
accuracy: 1.0000 - val_loss: 1.6365 - val_accuracy: 0.7692
Epoch 981/1000
1/1 [==============================] - 0s 33ms/step - loss: 5.4794e-06 -
accuracy: 1.0000 - val_loss: 1.6364 - val_accuracy: 0.7692
Epoch 982/1000
1/1 [==============================] - 0s 33ms/step - loss: 4.8183e-06 -
accuracy: 1.0000 - val_loss: 1.6366 - val_accuracy: 0.7692
Epoch 983/1000
1/1 [==============================] - 0s 32ms/step - loss: 1.6113e-06 -
accuracy: 1.0000 - val_loss: 1.6372 - val_accuracy: 0.7692
Epoch 984/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.5958e-06 -
accuracy: 1.0000 - val_loss: 1.6379 - val_accuracy: 0.7692
Epoch 985/1000
1/1 [==============================] - 0s 35ms/step - loss: 7.6794e-06 -
accuracy: 1.0000 - val_loss: 1.6389 - val_accuracy: 0.7692
Epoch 986/1000
1/1 [==============================] - 0s 30ms/step - loss: 2.5770e-06 -
accuracy: 1.0000 - val_loss: 1.6398 - val_accuracy: 0.7692
Epoch 987/1000
1/1 [==============================] - 0s 32ms/step - loss: 2.3937e-06 -
accuracy: 1.0000 - val_loss: 1.6406 - val_accuracy: 0.7692
Epoch 988/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.3059e-06 -
accuracy: 1.0000 - val_loss: 1.6404 - val_accuracy: 0.7692
Epoch 989/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.7571e-06 -
accuracy: 1.0000 - val_loss: 1.6385 - val_accuracy: 0.7692
Epoch 990/1000
1/1 [==============================] - 0s 36ms/step - loss: 2.0089e-06 -
accuracy: 1.0000 - val_loss: 1.6369 - val_accuracy: 0.7692
Epoch 991/1000
1/1 [==============================] - 0s 30ms/step - loss: 5.6498e-06 -
accuracy: 1.0000 - val_loss: 1.6336 - val_accuracy: 0.7692
Epoch 992/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.3892e-06 -
accuracy: 1.0000 - val_loss: 1.6303 - val_accuracy: 0.7692
Epoch 993/1000
```

```
1/1 [==============================] - 0s 35ms/step - loss: 3.3672e-06 -
accuracy: 1.0000 - val_loss: 1.6283 - val_accuracy: 0.7692
Epoch 994/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.7261e-06 -
accuracy: 1.0000 - val_loss: 1.6272 - val_accuracy: 0.7692
Epoch 995/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.3594e-06 -
accuracy: 1.0000 - val_loss: 1.6272 - val_accuracy: 0.7692
Epoch 996/1000
1/1 [==============================] - 0s 32ms/step - loss: 3.4162e-06 -
accuracy: 1.0000 - val_loss: 1.6272 - val_accuracy: 0.7692
Epoch 997/1000
1/1 [==============================] - 0s 33ms/step - loss: 1.8927e-06 -
accuracy: 1.0000 - val_loss: 1.6274 - val_accuracy: 0.7692
Epoch 998/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.1329e-06 -
accuracy: 1.0000 - val_loss: 1.6270 - val_accuracy: 0.7692
Epoch 999/1000
1/1 [==============================] - 0s 34ms/step - loss: 2.6364e-06 -
accuracy: 1.0000 - val_loss: 1.6263 - val_accuracy: 0.7692
Epoch 1000/1000
1/1 [==============================] - 0s 30ms/step - loss: 3.4653e-06 -
accuracy: 1.0000 - val_loss: 1.6268 - val_accuracy: 0.7692
Model saved.
```

[49]:
```
classifier_fake.evaluate(all_test_images, all_test_labels)
```
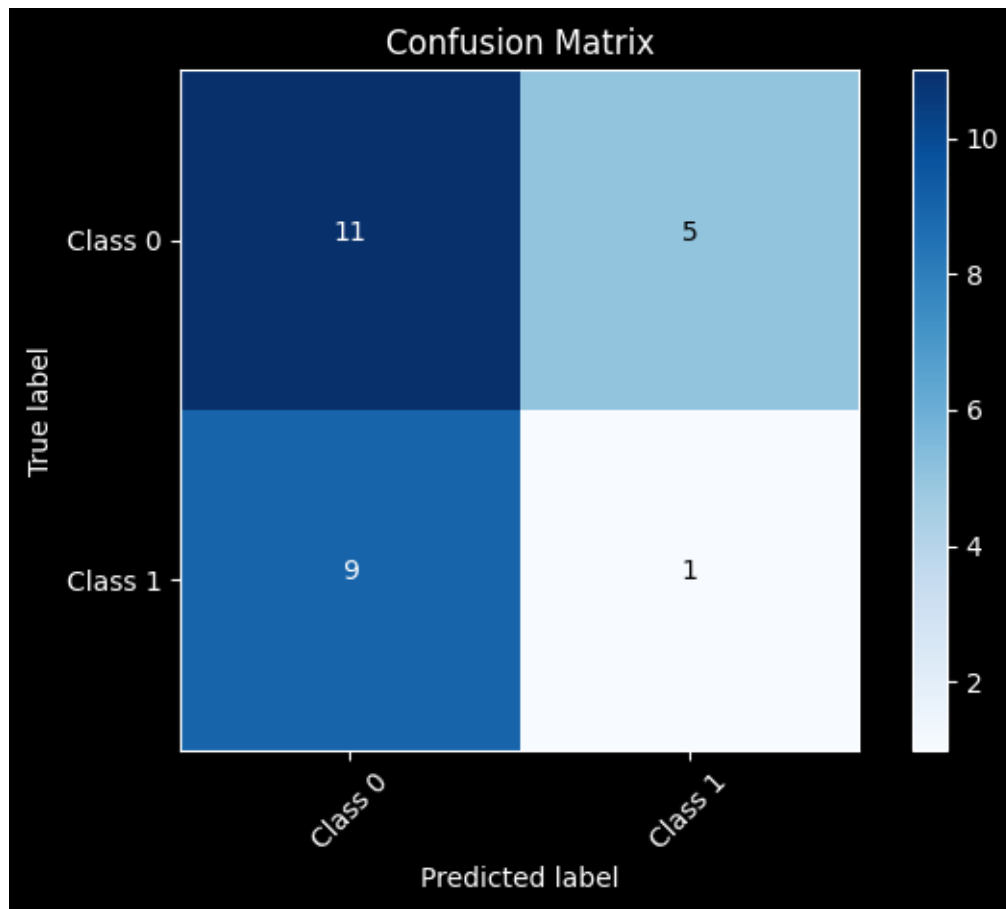
```
1/1 [==============================] - 0s 42ms/step - loss: 4.4502 - accuracy:
0.4615
Test Loss: 4.45016622543335
Test Accuracy: 0.46153849363327026
1/1 [==============================] - 0s 54ms/step
Confusion Matrix:
[[11  5]
 [ 9  1]]

Classification Report:
              precision    recall  f1-score   support

           0       0.55      0.69      0.61        16
           1       0.17      0.10      0.12        10

    accuracy                           0.46        26
   macro avg       0.36      0.39      0.37        26
weighted avg       0.40      0.46      0.42        26
```

Confusion Matrix

[ ]: