

```

1  import torch
2  import torch.nn as nn
3  import torch.nn.functional as F
4  from torch.utils.data import DataLoader
5  from torchvision import datasets, transforms
6  from torchvision.utils import make_grid
7
8  import numpy as np
9  import pandas as pd
10 from sklearn.metrics import confusion_matrix
11 import matplotlib.pyplot as plt
12
13 %matplotlib inline

1  # Convert MNIST Image Files into a Tensor of 4-Dimensions (# of images, Height, Width, Color Channel)
2  transform = transforms.ToTensor()

1  # Train Data
2  train_data = datasets.MNIST(root='/cnn_data', train=True, download=True, transform=transform)

1  # test Data
2  test_data = datasets.MNIST(root='/cnn_data', train=False, download=True, transform=transform)

1  train_data

Dataset MNIST
  Number of datapoints: 60000
  Root location: /cnn_data
  Split: Train
  StandardTransform
  Transform: ToTensor()

1 test_data

Dataset MNIST
  Number of datapoints: 10000
  Root location: /cnn_data
  Split: Test
  StandardTransform
  Transform: ToTensor()

1 pwd

'/content'

1 ls

sample_data/

1 cd ../

/

1 ls

bin@          cuda-keyring_1.0-1_all.deb  home/  libx32@      opt/          run/
boot/         datalab/  lib@      media/      proc/        sbin@

```

`cnn_data/` `dev/`
`content/` `etc/`

`lib32@ mnt/`
`lib64@ NGC-DL-CONTAINER-LICENSE`

`python-apt/ srv/`
`root/ sys/`

```
1 cd cnn_data
```

`/cnn_data`

```
1 ls
```

```
2
```

`MNIST/`

```
1 cd /
```

```
2
```

`/`

```
1 ls
```

`bin@` `cuda-keyring_1.0-1_all.deb`
`boot/` `datalab/`
`cnn_data/` `dev/`
`content/` `etc/`

`home/` `libx32@`
`lib@` `media/`
`lib32@ mnt/`
`lib64@ NGC-DL-CONTAINER-LICENSE`

`opt/` `run/`
`proc/` `sbin@`
`python-apt/` `srv/`
`root/` `sys/`

```
1 cd content/
```

`/content`

```
1 ls -al
```

```
total 16
drwxr-xr-x 1 root root 4096 Oct 16 13:23 ./
drwxr-xr-x 1 root root 4096 Oct 17 17:51 ../
drwxr-xr-x 4 root root 4096 Oct 16 13:23 .config/
drwxr-xr-x 1 root root 4096 Oct 16 13:23 sample_data/
```