

```
import numpy as np
```

1. Tensorflow

```
import tensorflow as tf
```

```
print(tf.__version__)
```

```
2.10.0
```

2. Keras

```
from keras import datasets
# Load MNIST datasets from keras
(train_images, train_labels), (test_images, test_labels) = datasets.mnist.load_data()
```

```
train_images.shape
```

```
(60000, 28, 28)
```

```
test_images.shape
```

```
(10000, 28, 28)
```

3. Theano

```
!pip install Theano
```

```
Requirement already satisfied: Theano in ./anaconda3/lib/python3.8/site-packages (1.0.5)
Requirement already satisfied: numpy>=1.9.1 in ./anaconda3/lib/python3.8/site-packages (from Theano) (1.20.1)
Requirement already satisfied: scipy>=0.14 in ./anaconda3/lib/python3.8/site-packages (from Theano) (1.6.2)
Requirement already satisfied: six>=1.9.0 in ./anaconda3/lib/python3.8/site-packages (from Theano) (1.15.0)
```

```
import theano.tensor as T
from theano import function
```

```
# Declaring 2 variables
x = T.dscalar('x')
y = T.dscalar('y')
```

```
# Summing up the 2 numbers
z = x + y
```

```
# Converting it to a callable object so that it takes matrix as parameters
f = function([x, y], z)
```

```
f(5, 7)
```

```
array(12.)
```

4. PyTorch

```
!pip3 install torch torchvision torchaudio --extra-index-url https://download.pytorch.org/whl/cu115
```

```
Looking in indexes: https://pypi.org/simple, https://download.pytorch.org/whl/cu115
Requirement already satisfied: torch in ./anaconda3/lib/python3.8/site-packages (1.12.1)
Requirement already satisfied: torchvision in ./anaconda3/lib/python3.8/site-packages (0.13.1)
Requirement already satisfied: torchaudio in ./anaconda3/lib/python3.8/site-packages (0.12.1)
Requirement already satisfied: typing-extensions in ./anaconda3/lib/python3.8/site-packages (from torch) (3.7.4.3)
Requirement already satisfied: requests in ./anaconda3/lib/python3.8/site-packages (from torchvision) (2.25.1)
Requirement already satisfied: pillow!=8.3.*,>=5.3.0 in ./anaconda3/lib/python3.8/site-packages (from torchvision) (8.2.0)
Requirement already satisfied: numpy in ./anaconda3/lib/python3.8/site-packages (from torchvision) (1.20.1)
Requirement already satisfied: chardet<5,>=3.0.2 in ./anaconda3/lib/python3.8/site-packages (from requests->torchvision) (4.0.6)
Requirement already satisfied: idna<3,>=2.5 in ./anaconda3/lib/python3.8/site-packages (from requests->torchvision) (2.10)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in ./anaconda3/lib/python3.8/site-packages (from requests->torchvision) (1.26.13)
Requirement already satisfied: certifi>=2017.4.17 in ./anaconda3/lib/python3.8/site-packages (from requests->torchvision) (2025.8.3)
```

```
import torch
import torch.nn as nn
```

```
print(torch.__version__)
```

```
1.12.1+cu102
```

```
torch.cuda.is_available()
```

```
False
```