Coding Tutorial

October 30, 2020

1 Introduction to TensorFlow

1.1 Coding tutorials

Section ??

Hello TensorFlow!

In [1]:
```
# Import TensorFlow

import tensorflow as tf
```

In [2]:
```
# Check its version

tf.__version__
```

Out[2]:
```
'2.0.0'
```

In [3]:
```
# Train a feedforward neural network for image classification

import numpy as np

print('Loading data...\n')
data = np.loadtxt('./data/mnist.csv', delimiter=',')
print('MNIST dataset loaded.\n')

x_train = data[:, 1:]
y_train = data[:, 0]
x_train = x_train/255.

model = tf.keras.models.Sequential([
  tf.keras.layers.Dense(16, activation='relu'),
  tf.keras.layers.Dense(10, activation='softmax')
])

model.compile(optimizer='adam',
```

```
                      loss='sparse_categorical_crossentropy',
                      metrics=['accuracy'])

        print('Training model...\n')
        model.fit(x_train, y_train, epochs=3, batch_size=32)

        print('Model trained successfully!')
```

```
Loading data...

MNIST dataset loaded.

Training model...

Train on 60000 samples
Epoch 1/3
60000/60000 [==============================] - 11s 183us/sample - loss: 0.4345 - accuracy: 0.87
Epoch 2/3
60000/60000 [==============================] - 10s 168us/sample - loss: 0.2555 - accuracy: 0.92
Epoch 3/3
60000/60000 [==============================] - 10s 168us/sample - loss: 0.2198 - accuracy: 0.93
Model trained successfully!
```