AI学习笔记--Tensorflow--使用 tf.data 加载 NumPy 数据

本教程提供了将数据从 NumPy 数组加载到 tf.data.Dataset 的示例 本示例从一个 .npz 文件中加载 MNIST 数据集。但是，本实例中 NumPy 数据的来源并不重要。下例是一个用于读取 mnist.nzp 的例子。

- 从 .npz 文件中加载

```
from __future__ import absolute_import, division, print_function,
unicode_literals

import numpy as np
import tensorflow as tf
import tensorflow_datasets as tfds

DATA_URL = 'https://storage.googleapis.com/tensorflow/tf-keras-
datasets/mnist.npz'

path = tf.keras.utils.get_file('mnist.npz', DATA_URL)
with np.load(path) as data:
  train_examples = data['x_train']
  train_labels = data['y_train']
  test_examples = data['x_test']
  test_labels = data['y_test']

train_dataset = tf.data.Dataset.from_tensor_slices((train_examples,
train_labels))
test_dataset = tf.data.Dataset.from_tensor_slices((test_examples,
test_labels))
BATCH_SIZE = 64
SHUFFLE_BUFFER_SIZE = 100

train_dataset =
train_dataset.shuffle(SHUFFLE_BUFFER_SIZE).batch(BATCH_SIZE)
test_dataset = test_dataset.batch(BATCH_SIZE)

model = tf.keras.Sequential([
    tf.keras.layers.Flatten(input_shape=(28, 28)),
    tf.keras.layers.Dense(128, activation='relu'),
    tf.keras.layers.Dense(10, activation='softmax')
])

model.compile(optimizer=tf.keras.optimizers.RMSprop(),
                loss=tf.keras.losses.SparseCategoricalCrossentropy(),
                metrics=[tf.keras.metrics.SparseCategoricalAccuracy()])

model.fit(train_dataset, epochs=10)

test_loss, test_accuracy = model.evaluate(test_dataset)
```

```
print('\n\nTest Loss {}, Test Accuracy {}'.format(test_loss,
test_accuracy))
```

结果：

```
Test Loss 0.6353625568677638, Test Accuracy 0.958299994468689
```