COSC4337_Tensorboard_example

September 17, 2021

```python
[1]: ## Import the library
     import tensorflow as tf
     import numpy as np
```

```python
[2]: %load_ext tensorboard
```

```python
[3]: import tensorflow as tf
     import datetime
```

```python
[4]: mnist = tf.keras.datasets.mnist

     (x_train, y_train),(x_test, y_test) = mnist.load_data()
     x_train, x_test = x_train / 255.0, x_test / 255.0

     def create_model():
       return tf.keras.models.Sequential([
         tf.keras.layers.Flatten(input_shape=(28, 28)),
         tf.keras.layers.Dense(512, activation='relu'),
         tf.keras.layers.Dropout(0.2),
         tf.keras.layers.Dense(10, activation='softmax')
       ])
```

```python
[5]: model = create_model()
     model.compile(optimizer='adam',
                   loss='sparse_categorical_crossentropy',
                   metrics=['accuracy'])

     log_dir = "logs" + datetime.datetime.now().strftime("%Y%m%d-%H%M%S")
     tensorboard_callback = tf.keras.callbacks.TensorBoard(log_dir=log_dir,␣
      ↪histogram_freq=1)

     model.fit(x=x_train,
               y=y_train,
               epochs=5,
               validation_data=(x_test, y_test),
               callbacks=[tensorboard_callback])
```

WARNING:tensorflow:From C:\Users\RizkN\.conda\envs\tf1\lib\site-

```
packages\tensorflow_core\python\ops\resource_variable_ops.py:1630: calling
BaseResourceVariable.__init__ (from tensorflow.python.ops.resource_variable_ops)
with constraint is deprecated and will be removed in a future version.
Instructions for updating:
If using Keras pass *_constraint arguments to layers.
Train on 60000 samples, validate on 10000 samples
Epoch 1/5
60000/60000 [==============================] - 18s 292us/sample - loss: 0.2181 -
acc: 0.9356 - val_loss: 0.1009 - val_acc: 0.9704
Epoch 2/5
60000/60000 [==============================] - 18s 303us/sample - loss: 0.0976 -
acc: 0.9702 - val_loss: 0.0834 - val_acc: 0.9717
Epoch 3/5
60000/60000 [==============================] - 14s 231us/sample - loss: 0.0675 -
acc: 0.9783 - val_loss: 0.0649 - val_acc: 0.9797
Epoch 4/5
60000/60000 [==============================] - 15s 245us/sample - loss: 0.0541 -
acc: 0.9827 - val_loss: 0.0763 - val_acc: 0.9775
Epoch 5/5
60000/60000 [==============================] - 20s 341us/sample - loss: 0.0436 -
acc: 0.9863 - val_loss: 0.0693 - val_acc: 0.9810
```

[5]: <tensorflow.python.keras.callbacks.History at 0x1854fa6f9c8>

[9]: ```
#acitvate VirtEnv
```

[10]: ```
#tensorboard --logdir logs
```

[11]: ```
#http://DESKTOP-GLIDMOC:6006/   run it in webbrowser
```