

```
1 "D:\Users\Mark Garcia\Desktop\CSULB\Y4 S1\CECS 378\
  Lab-2\test\Scripts\python.exe" "C:\Program Files\
  JetBrains\PyCharm 2021.1.1\plugins\python\helpers\
  pydev\pydevconsole.py" --mode=client --port=59655
2
3 import sys; print('Python %s on %s' % (sys.version,
  sys.platform))
4 sys.path.extend(['D:\\Users\\Mark Garcia\\Desktop\\
  CSULB\\Y4 S2\\CECS 456\\test', 'D:/Users/Mark Garcia/
  Desktop/CSULB/Y4 S2/CECS 456/test'])
5
6 PyDev console: starting.
7
8 Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:
  13:41) [MSC v.1929 64 bit (AMD64)] on win32
9 >>> runfile('D:/Users/Mark Garcia/Desktop/CSULB/Y4 S2
  /CECS 456/test/lstm.py', wdir='D:/Users/Mark Garcia/
  Desktop/CSULB/Y4 S2/CECS 456/test')
10 2022-05-03 11:46:03.546681: W tensorflow/
  stream_executor/platform/default/dso_loader.cc:64]
  Could not load dynamic library 'cudart64_110.dll';
  dlerror: cudart64_110.dll not found
11 2022-05-03 11:46:03.546812: I tensorflow/
  stream_executor/cuda/cudart_stub.cc:29] Ignore above
  cudart dlerror if you do not have a GPU set up on
  your machine.
12 2022-05-03 11:46:07.005515: W tensorflow/
  stream_executor/platform/default/dso_loader.cc:64]
  Could not load dynamic library 'cudart64_110.dll';
  dlerror: cudart64_110.dll not found
13 2022-05-03 11:46:07.006620: W tensorflow/
  stream_executor/platform/default/dso_loader.cc:64]
  Could not load dynamic library 'cublas64_11.dll';
  dlerror: cublas64_11.dll not found
14 2022-05-03 11:46:07.007688: W tensorflow/
  stream_executor/platform/default/dso_loader.cc:64]
  Could not load dynamic library 'cublasLt64_11.dll';
  dlerror: cublasLt64_11.dll not found
15 2022-05-03 11:46:07.008783: W tensorflow/
  stream_executor/platform/default/dso_loader.cc:64]
  Could not load dynamic library 'cufft64_10.dll';
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15 dlerror: cufft64_10.dll not found
16 2022-05-03 11:46:07.009865: W tensorflow/
    stream_executor/platform/default/dso_loader.cc:64]
    Could not load dynamic library 'curand64_10.dll';
    dlerror: curand64_10.dll not found
17 2022-05-03 11:46:07.010896: W tensorflow/
    stream_executor/platform/default/dso_loader.cc:64]
    Could not load dynamic library 'cusolver64_11.dll';
    dlerror: cusolver64_11.dll not found
18 2022-05-03 11:46:07.011989: W tensorflow/
    stream_executor/platform/default/dso_loader.cc:64]
    Could not load dynamic library 'cuspars64_11.dll';
    dlerror: cuspars64_11.dll not found
19 2022-05-03 11:46:07.013072: W tensorflow/
    stream_executor/platform/default/dso_loader.cc:64]
    Could not load dynamic library 'cudnn64_8.dll';
    dlerror: cudnn64_8.dll not found
20 2022-05-03 11:46:07.013274: W tensorflow/core/
    common_runtime/gpu/gpu_device.cc:1850] Cannot dlopen
    some GPU libraries. Please make sure the missing
    libraries mentioned above are installed properly if
    you would like to use GPU. Follow the guide at https
    ://www.tensorflow.org/install/gpu for how to download
    and setup the required libraries for your platform.
21 Skipping registering GPU devices...
22 2022-05-03 11:46:07.013875: I tensorflow/core/
    platform/cpu_feature_guard.cc:151] This TensorFlow
    binary is optimized with oneAPI Deep Neural Network
    Library (oneDNN) to use the following CPU
    instructions in performance-critical operations:  AVX
    AVX2
23 To enable them in other operations, rebuild
    TensorFlow with the appropriate compiler flags.
24 Epoch 1/3
25 1875/1875 [=====] - 39s 20ms
    /step - loss: 0.6346 - accuracy: 0.7933 - val_loss: 0
    .1593 - val_accuracy: 0.9527
26 Epoch 2/3
27 1875/1875 [=====] - 38s 20ms
    /step - loss: 0.1757 - accuracy: 0.9517 - val_loss: 0
    .1210 - val_accuracy: 0.9663
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28 Epoch 3/3
29 1875/1875 [=====] - 39s 21ms
   /step - loss: 0.1148 - accuracy: 0.9693 - val_loss: 0
   .0797 - val_accuracy: 0.9745
30 Model has an accuracy of [0.7933499813079834, 0.
   9516833424568176, 0.9693166613578796]
31 Model has a loss of [0.6346096992492676, 0.
   17567315697669983, 0.11482764035463333]
32 Model: "sequential"
33 -----
   -----
34 Layer (type)                      Output Shape
   Param #
35 =====
   =====
36 lstm (LSTM)                        (None, 28, 128
   )                      80384
37
38 dropout (Dropout)                 (None, 28, 128
   )                      0
39
40 lstm_1 (LSTM)                     (None, 128
   )                      131584
41
42 dropout_1 (Dropout)               (None, 128
   )                      0
43
44 dense (Dense)                     (None, 32
   )                      4128
45
46 dropout_2 (Dropout)               (None, 32
   )                      0
47
48 dense_1 (Dense)                   (None, 10
   )                      330

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49

50 =====
=====

51 Total params: 216,426

52 Trainable params: 216,426

53 Non-trainable params: 0

54 -----

55 Image 0 is similar to: 0

56 Image 1 is similar to: 1

57 Image 2 is similar to: 2

58 Image 3 is similar to: 3

59 Image 4 is similar to: 4

60 Image 5 is similar to: 5

61 Image 6 is similar to: 0

62 Image 7 is similar to: 3

63 Image 8 is similar to: 8

64 Image 9 is similar to: 9

65