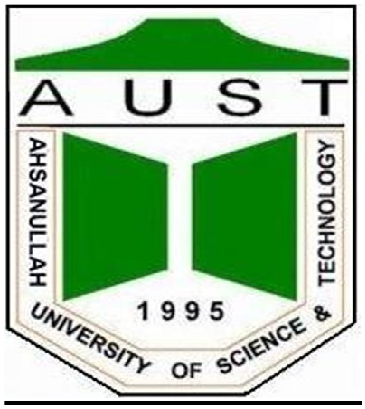
AHSANULLAH UNIVERSITY OF SCIENCE & TECHNOLOGY



Department of Computer Science & Engineering

Course No: CSE 4238

Course Name: Soft Computing Lab

Section : B
Lab Group: B1
Semester: Fall2021
Assignment No: 3

Submitted By:

Name: Amit Hasan

ID: 17.01.04.055

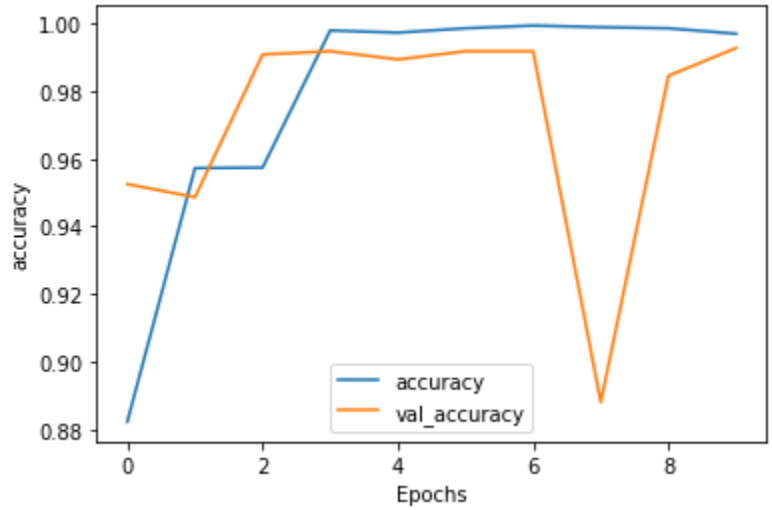
Dataset: **2**
Model: **Bidirectional LSTM**

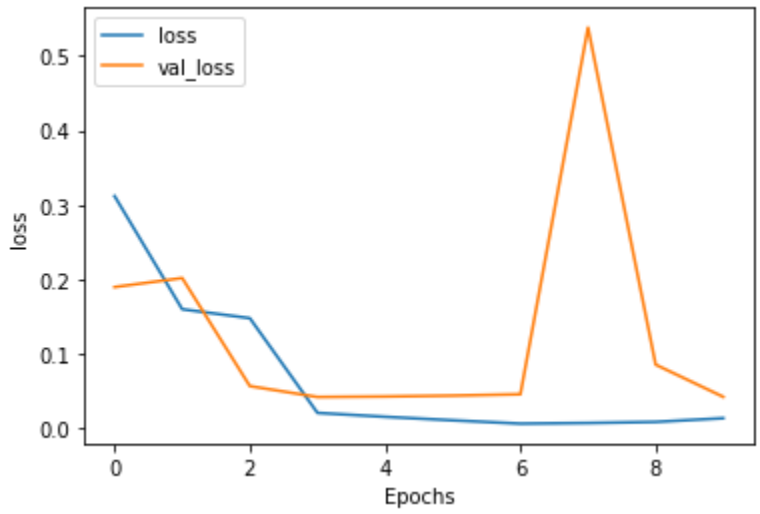
Hyperparameters:

Batch size: 256
Epochs:10
Test size = 0.2
layers = 4
Total params: 7,637,841
Trainable params: 7,637,841
Non-trainable params: 0

Model dissection:

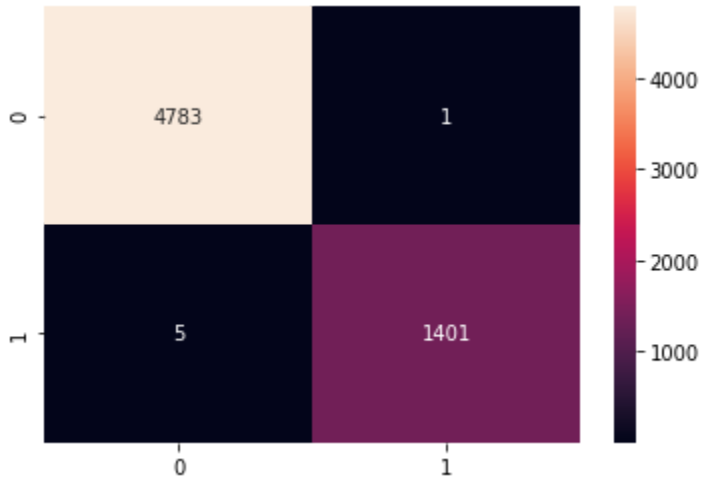
Accuray:





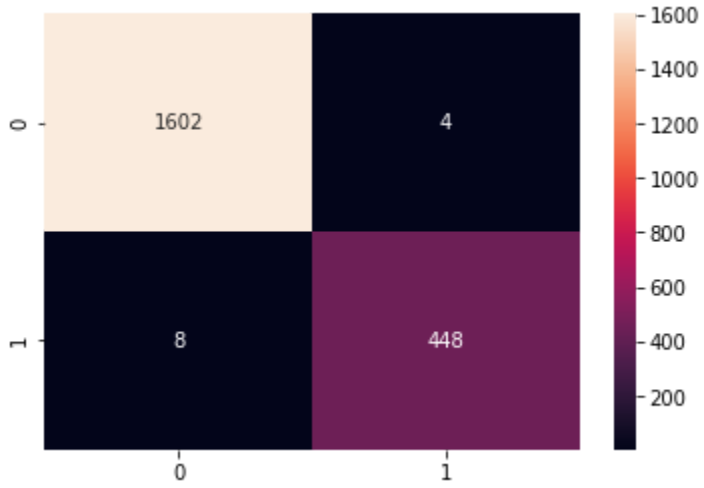
Train Data Performance:

```
194/194 [==============================] - 19s 82ms/step - loss: 0.0080 - accuracy: 0.9990
Train Loss: 0.008008589968085289
Train Accuracy: 0.9990307092666626 (Model Metric)
Train Accuracy: 0.9990306946688207 (sklearn Metric)
Train Precision: 0.9992867332382311
Train Recall: 0.9964438122332859
Train F1-score: 0.9978632478632479
<matplotlib.axes._subplots.AxesSubplot at 0x7f1c03583c50>
```



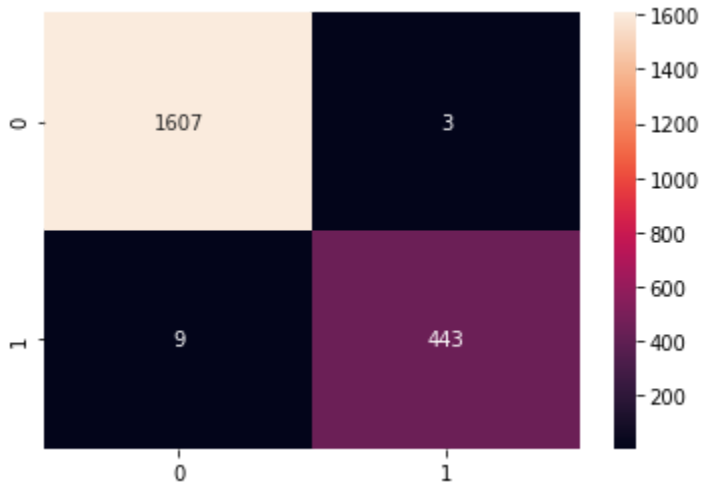
Val Data Performance:

```
65/65 [==============================] - 5s 69ms/step - loss: 0.0366 - accuracy: 0.9942
Validation Loss: 0.03659782558679581
Validation Accuracy: 0.9941803812980652 (Model Metric)
Validation Accuracy: 0.9941804073714839 (sklearn Metric)
Validation Precision: 0.9911504424778761
Validation Recall: 0.9824561403508771
Validation F1-score: 0.9867841409691629
<matplotlib.axes._subplots.AxesSubplot at 0x7f1be6d60310>
```



Test Data Performance

```
65/65 [==============================] - 7s 63ms/step - loss: 0.0324 - accuracy: 0.9942
Test Loss: 0.032363008707761765
Test Accuracy: 0.9941803812980652 (Model Metric)
Test Accuracy: 0.9941804073714839 (sklearn Metric)
Test Precision: 0.9932735426008968
Test Recall: 0.9800884955752213
Test F1-score: 0.9866369710467706
<matplotlib.axes._subplots.AxesSubplot at 0x7f1c03681ad0>
```



Github Link: https://github.com/gunner73/Bi-Directional-LSTM.git