

Evaluation Metrics:

Model: LSTM (Long Short Term Memory)

Metrics:

- Accuracy: 0.77
- Recall: 0.75
- Precision: 0.75
- Loss: 0.49

```
Total params: 0 (0.00 B)
Trainable params: 0 (0.00 B)
Non-trainable params: 0 (0.00 B)
Process Long Short Term Memory model for train
8000/8000 ————— 432s 54ms/step - accuracy: 0.7533 - loss: 0.4994 - precision: 0.7533 - recall: 0.7533 - val_accuracy: 0.7783 - val_loss: 0.46
32 - val_precision: 0.7783 - val_recall: 0.7783
<keras.src.callbacks.history.history object at 0x0000022A488A0450>
Detailed Training and Validation Metrics:
Epoch 1: Accuracy = 0.7674, Precision = 0.7674, Recall = 0.7674
Process the Long Short Term Memory for test
2500/2500 ————— 46s 18ms/step - accuracy: 0.7787 - loss: 0.4616 - precision: 0.7787 - recall: 0.7787
Test Loss: 0.4622, Test Accuracy: 0.7781, Test Precision: 0.7781, Test Recall: 0.7781
```

Model: LSTM (Long Short Term Memory)

Metrics:

- mse (mean squared error): 0.1392
- val_loss (loss): 0.1466
- Val_mae (mean_absolute_error): 0.2809
- Val_mape (mean_absolute_percentage_error): 140474592.0000
- val_mse: 0.1466

```
Loading train and test data
Data loaded
Tokenizing and padding data
Tokenizing and padding complete
Creating the LSTM model
/Users/abhijeetkhedekar/Documents/SWM Project/Twitter-Sentiment-Analysis/swmenv/lib/python3.11/site-packages/keras/src/layers/core/embedding.py:86: UserWarning: Argument 'input_length' is deprecated. Just remove it.
warnings.warn(
Model: "sequential"
```

Layer (type)	Output Shape	Param #
embedding (Embedding)	?	0 (unbuilt)
spatial_dropout1d (SpatialDropout1D)	?	0
lstm (LSTM)	?	0 (unbuilt)
dense (Dense)	?	0 (unbuilt)

```
Total params: 0 (0.00 B)
Trainable params: 0 (0.00 B)
Non-trainable params: 0 (0.00 B)
Training the LSTM model
Epoch 1/10
8000/8000 ————— 623s 78ms/step - loss: 0.1664 - mae: 0.3319 - mape: 165934864.0000 - mse: 0.1664 - val_loss: 0.1516 - val_mae: 0.3038 - val_mape: 151985872.0000 - val_mse: 0.1516
Epoch 2/10
8000/8000 ————— 624s 78ms/step - loss: 0.1513 - mae: 0.3023 - mape: 151153584.0000 - mse: 0.1513 - val_loss: 0.1496 - val_mae: 0.2966 - val_mape: 148324112.0000 - val_mse: 0.1496
Epoch 3/10
8000/8000 ————— 629s 79ms/step - loss: 0.1486 - mae: 0.2966 - mape: 148319120.0000 - mse: 0.1486 - val_loss: 0.1486 - val_mae: 0.2918 - val_mape: 146898224.0000 - val_mse: 0.1486
Epoch 4/10
8000/8000 ————— 627s 78ms/step - loss: 0.1465 - mae: 0.2923 - mape: 146146832.0000 - mse: 0.1465 - val_loss: 0.1475 - val_mae: 0.2899 - val_mape: 144942368.0000 - val_mse: 0.1475
Epoch 5/10
8000/8000 ————— 635s 79ms/step - loss: 0.1448 - mae: 0.2890 - mape: 144479184.0000 - mse: 0.1448 - val_loss: 0.1470 - val_mae: 0.2892 - val_mape: 144585632.0000 - val_mse: 0.1470
Epoch 6/10
8000/8000 ————— 635s 79ms/step - loss: 0.1436 - mae: 0.2864 - mape: 143185648.0000 - mse: 0.1436 - val_loss: 0.1469 - val_mae: 0.2861 - val_mape: 143035456.0000 - val_mse: 0.1469
Epoch 7/10
8000/8000 ————— 634s 79ms/step - loss: 0.1419 - mae: 0.2826 - mape: 141284256.0000 - mse: 0.1419 - val_loss: 0.1473 - val_mae: 0.2869 - val_mape: 143436496.0000 - val_mse: 0.1473
Epoch 8/10
8000/8000 ————— 642s 80ms/step - loss: 0.1412 - mae: 0.2811 - mape: 140525232.0000 - mse: 0.1412 - val_loss: 0.1467 - val_mae: 0.2807 - val_mape: 140327440.0000 - val_mse: 0.1467
Epoch 9/10
8000/8000 ————— 638s 80ms/step - loss: 0.1397 - mae: 0.2778 - mape: 138893456.0000 - mse: 0.1397 - val_loss: 0.1468 - val_mae: 0.2804 - val_mape: 140180608.0000 - val_mse: 0.1468
Epoch 10/10
8000/8000 ————— 646s 81ms/step - loss: 0.1392 - mae: 0.2767 - mape: 138325008.0000 - mse: 0.1392 - val_loss: 0.1466 - val_mae: 0.2809 - val_mape: 140474592.0000 - val_mse: 0.1466
<keras.src.callbacks.history.history object at 0x2c0a9090>
```