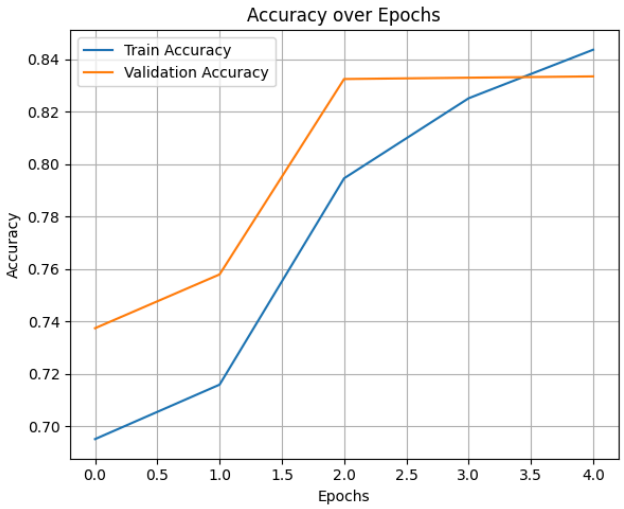
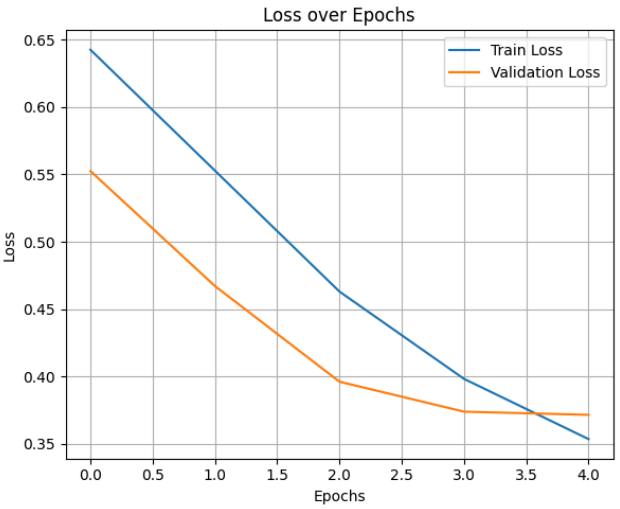
S19323
Tweets Classification
Programming Assignment Report

Performance Comparison: LSTM vs BiLSTM - Accuracy & Loss

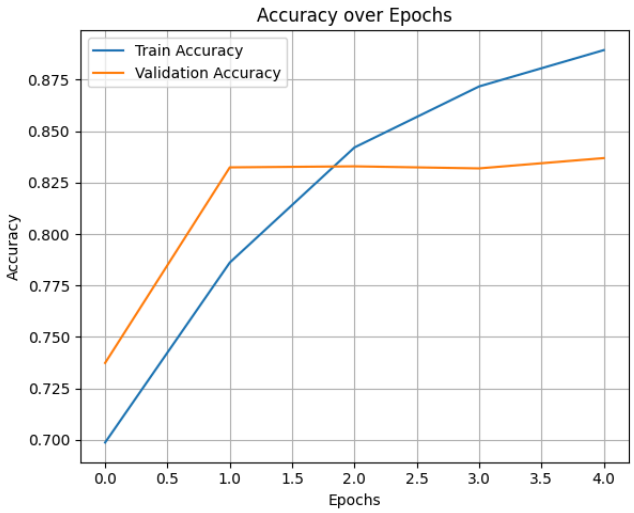
Metric	LSTM plot	BiLSTM plot
Training Accuracy	Steady increase, reaching ~0.85 by epoch 5	Faster and higher increase, reaching ~0.89
Validation Accuracy	Plateaus early at ~0.83	Slightly higher and more stable (~0.84–0.85)
Training Loss	Consistently decreases to ~0.35	Decreases faster, reaches ~0.26
Validation Loss	Smooth decrease, then plateaus (~0.37)	Slight fluctuations but overall lower (~0.34)

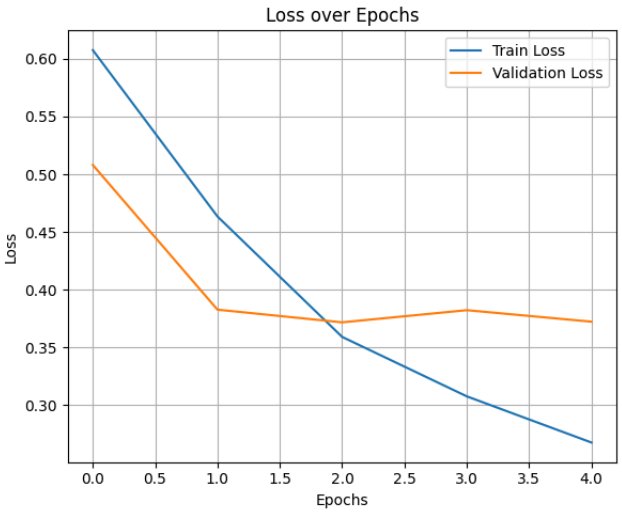
For LSTM





For BiLSTM

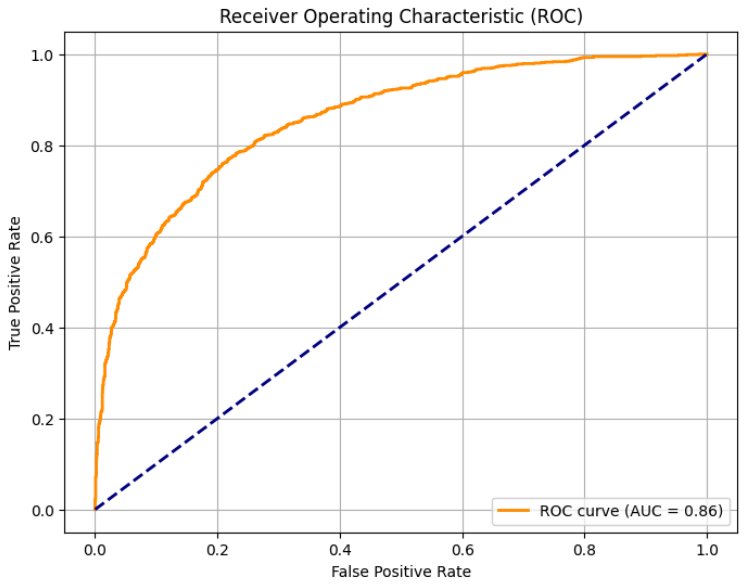




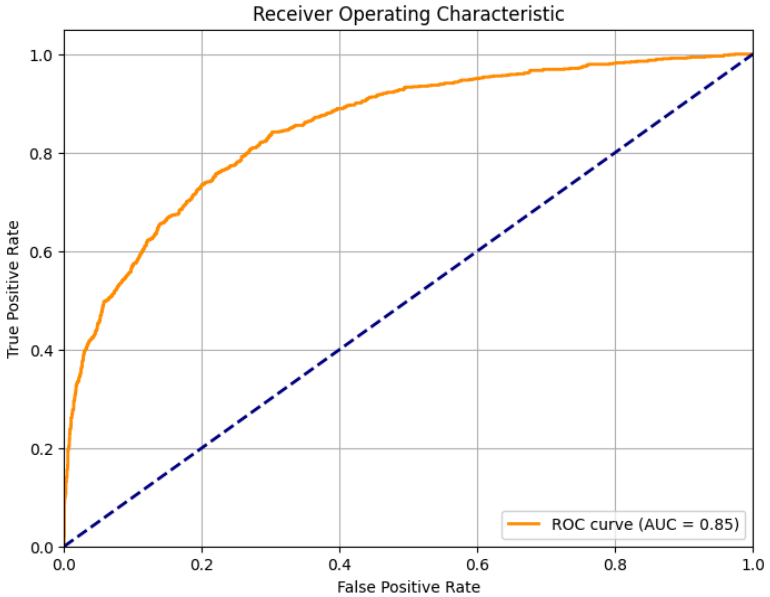
AUC Comparison:

- **BiLSTM shows a higher AUC value**, indicating **better discriminatory power** in distinguishing between the two classes compared to LSTM.

For BiLSTM



For LSTM



BiLSTM outperforms LSTM in terms of training accuracy, lower training/validation loss, and AUC.

Even though both models plateau in validation accuracy, BiLSTM starts at a higher value and exhibits more robust generalisation.

The **gap between training and validation loss** is narrower for BiLSTM, indicating **less overfitting** compared to LSTM.