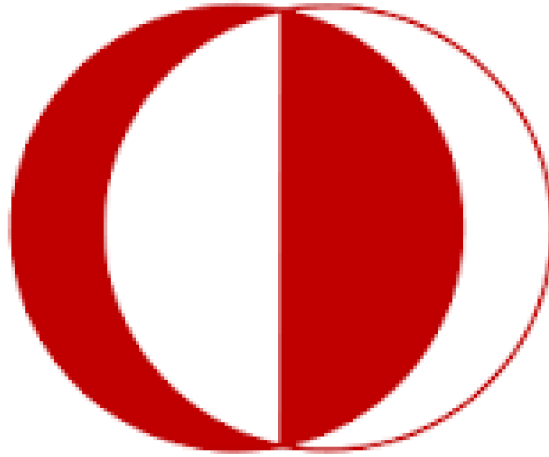


MIDDLE EAST TECHNICAL UNIVERSITY



IS 784: Deep Learning for Text Analytics
Assignment III

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In the second part of the assignment, weights and biases website is used in order to check how the parameters affect the test accuracy, test loss, validation accuracy and validation loss. This part was similar to grid search in the scikit-learn library. Weights and biases, trains every combination of given parameters and logs the results on the website. In the following figures, Figure 1 shows a parallel combination of the parameters and accuracy results. Figure 2 shows a parallel combination of the parameters and losses.

As can be seen, with learning rate = 0.05, the model did not work very well.

LSTM

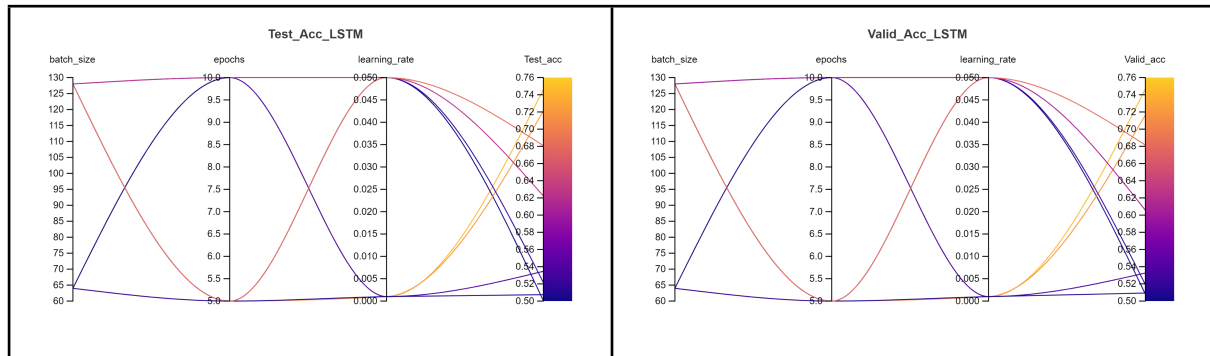


Figure 1: Parallel Combination of Parameters and Accuracies

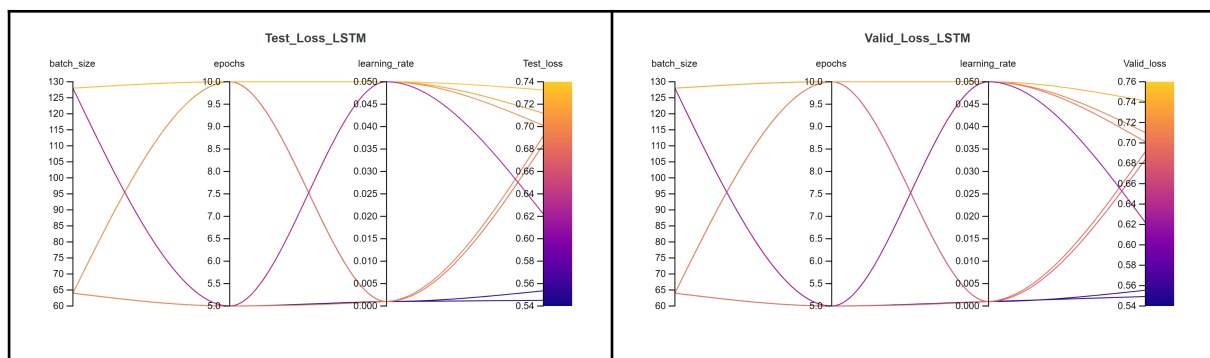


Figure 2: Parallel Combination of Parameters and Losses

According to **test accuracy**, the best combination is :

Batch Size	64
Epochs	10
Learning Rate	0.001

According to **test loss**, the best combination is :

Batch Size	64
Epochs	5

Learning Rate	0.001
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According to **valid accuracy**, the best combination is :

Batch Size	64
Epochs	10
Learning Rate	0.001

According to **valid loss**, the best combination is :

Batch Size	64
Epochs	5
Learning Rate	0.001

BiLSTM

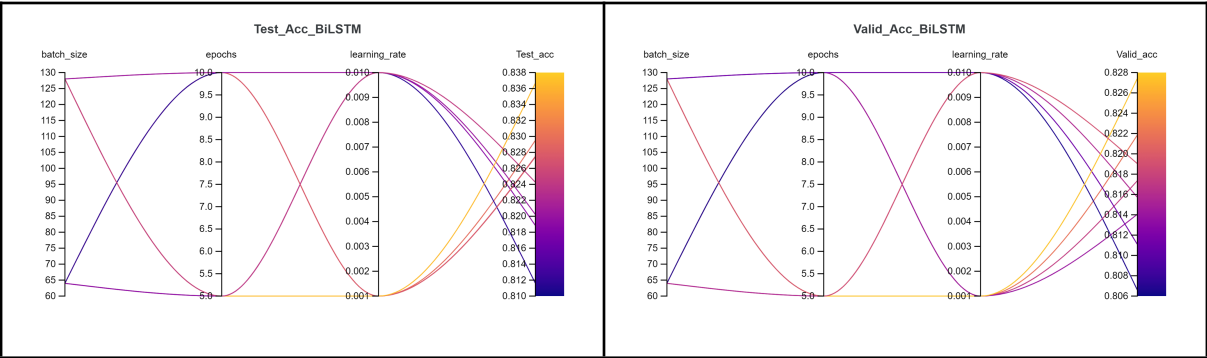


Figure 3: Parallel Combination of Parameters and Accuracies

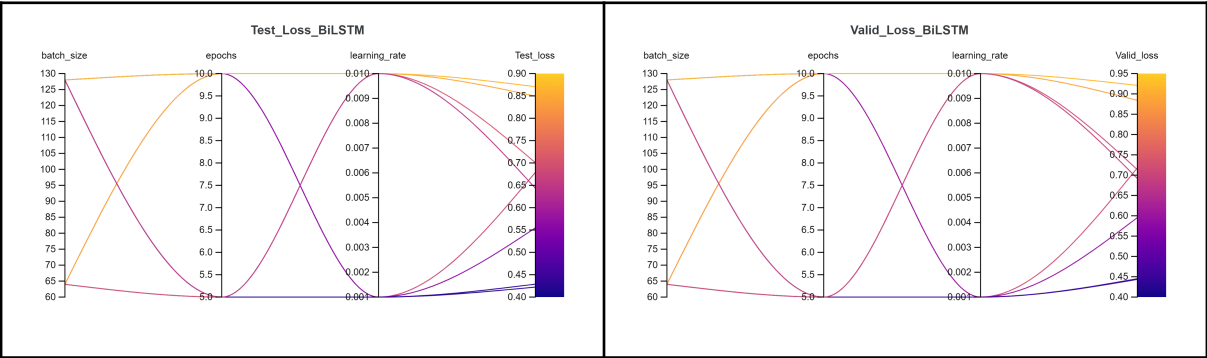


Figure 4: Parallel Combination of Parameters and Losses

According to **test accuracy**, the best combination is :

Batch Size	128
Epochs	5
Learning Rate	0.001

According to **test loss**, the best combination is :

Batch Size	128
Epochs	5
Learning Rate	0.001

According to **valid accuracy**, the best combination is :

Batch Size	128
Epochs	5
Learning Rate	0.001

According to **valid loss**, the best combination is :

Batch Size	64
Epochs	10
Learning Rate	0.001