TensorBoard Observations

Model-1

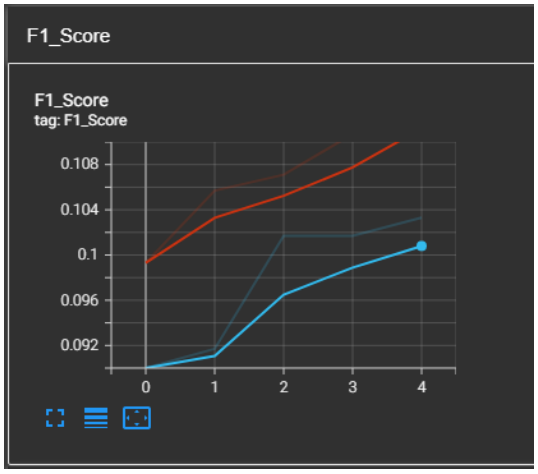
In this model, I used the sound signal raw_data directly and input it into the LSTM model. This model is trained for 5 epochs.

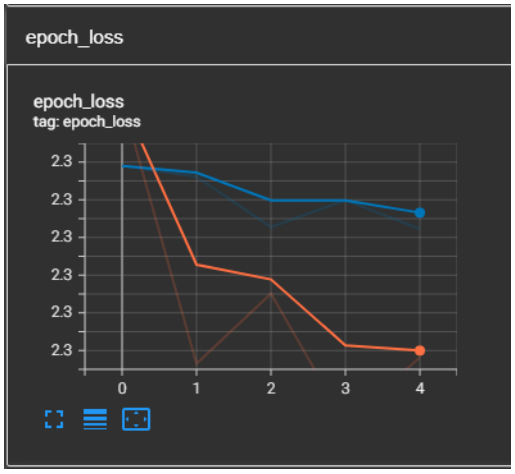
I have used the ***F1Score*** callback. I used the Adam optimizer with 0.0001 learning rate. I used ***DenseLayer & LSTM layer*** in the architecture to achieve the desirable validation_f1_score.

When we evaluate the model, the validation_f1_score is 0.1033.

Note: Red is the train curve and blue is the validation curve.

1. The F-1 score is gradually increasing over 5 epochs. The validation_f1_score is 0.1033.
2. The loss is decreasing after training in the subsequent epochs.





Model-2

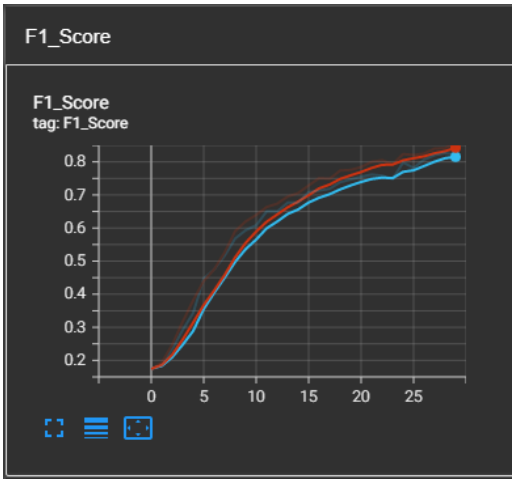
In this model, I have converted the raw_data into a spectrogram and input this converted data into the LSTM model. This model is trained for 30 epochs.

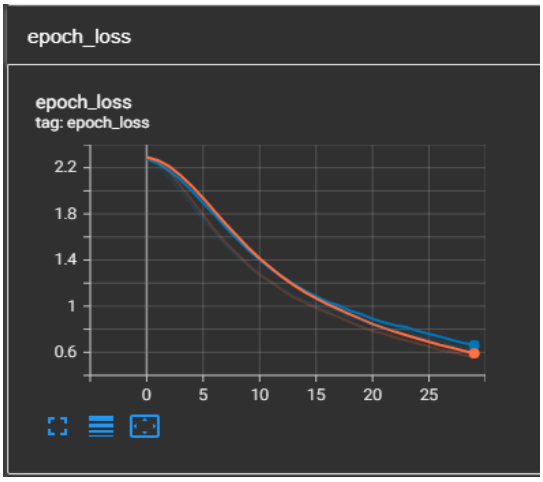
I have used the ***F1Score*** callback. I used the Adam optimizer with 0.0001 learning rate. I used ***DenseLayer & LSTM layer*** in the architecture to achieve the desirable validation_f1_score.

When we evaluate the model, the validation_f1_score is 0.82.

Note: Red is the train curve and blue is the validation curve.

1. The F-1 score is gradually increasing over 30 epochs. The validation_f1_score is 0.82
2. The loss is decreasing after training in the subsequent epochs.





Model-3

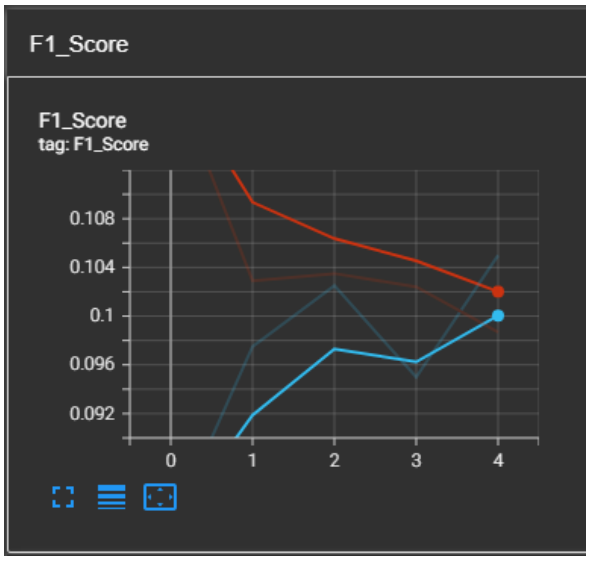
In this model, I used augmented raw_data and input it into LSTM the model. This model is trained for 5 epochs.

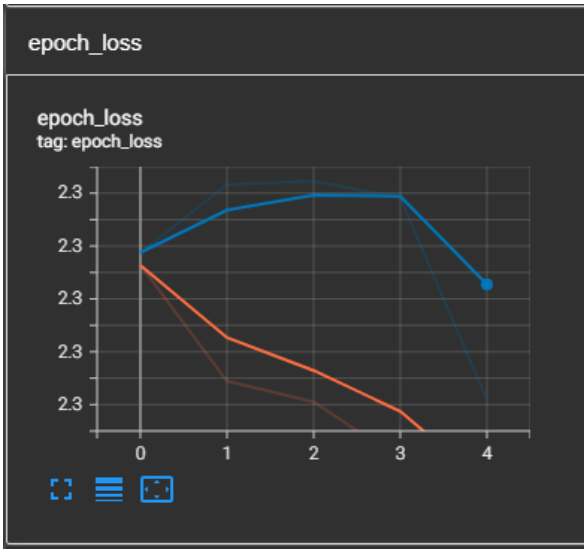
I have used the ***F1Score*** callback. I used the Adam optimizer with 0.0001 learning rate. I used ***DenseLayer & LSTM layer*** in the architecture to achieve the desirable validation_f1_score.

When we evaluate the model, the validation_f1_score is 0.105.

Note: Red is the train curve and blue is the validation curve.

1. The F-1 score is gradually increasing over 5 epochs. The validation_f1_score is 0.105.
2. The loss is decreasing after training in the subsequent epochs.





Model-4

In this model, I used the augmented spectrogram data and input it into LSTM the model. This model is trained for 50 epochs.

I have used the ***F1Score*** callback. I used the Adam optimizer with 0.0001 learning rate. I used ***DenseLayer & LSTM layer*** in the architecture to achieve the desirable validation_f1_score.

When we evaluate the model, the validation_f1_score is 0.865.

Note: Red is the train curve and blue is the validation curve.

1. The F-1 score is gradually increasing over 50 epochs. The validation_f1_score is 0.865.
2. The loss is decreasing after training in the subsequent epochs.