

Project Report

How the model works:

1. Removing the outliers or noise in the initial stages of Data Preparation
2. Applying Moving Variance for the sensor values in DataFrame
3. Considering Tukey hinge into account and labeling the values which are greater than 0.75 quantile(threshold)
4. If we have labeled Y_values according to threshold($s(t) > threshold$) values then the next step is to make X_values as $s(t-1), s(t-2), \dots, s(t-10)$
5. Passing all the values into different models like LSTM, GRU and predicting the values by the past 10 time steps
6. In this case, I have taken machine_0 values as testset and concatenated all the remaining machine values for each different sensor

Models used:

LSTM, GRU

Accuracies:

Got an accuracy of more than 95 percent in few cases

Future work:

1. Want to implement BiLSTM model as well
2. Each individual sensor values are found out and want to make use of all these sensor values combined
3. In this model, I have considered past 10 timesteps as X_values and want to work for past 20 timesteps or more in order to predict early warning