Assignment-2

Data for Linear Acceleration (LA), Rotational acceleration (RA) and Rotational Velocity (RV) is given in the dataset each of them has a total of 65 instances. When we generate a plot for each of these matrixes it gets really difficult to compare them and come up with conclusions as there are many images present and it’s difficult to analyze each image and instance. We can improve the visualization technique for the waveform to make much more sense at the data at hand. Since there are 65 instances plot created below is the plot for instance 53 followed by instance 7

A picture containing text, map

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Instance 53

From looking at the plots for instance 53 and instance 7 we can see that for the plot of instance 53 each graph for LA, RV and RA fluctuate differently and are not similar to each other but instance 7 on the other hand show a similar rise at that time.

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Instance 7

For the feature that have been extracted from the matrixes. We have calculated the Min, Max and Mean for these instances. From the graphs created for each feature and after looking at each graph individually each of them has a different set of ranges as it relies on the min, max and mean value while the graph gets plotted. So, in order to determine the 3 best features, we compare their ranges.

|  |  |
| --- | --- |
| **Feature** | **Instance Numbers of Top 5 largest feature values** |
| PLA | 7,8,18,19 |
| PRV | 7,8,10,33 |
| PRA | 7,8,18,19 |

MLA, MRA and MRV have 0 data so it can be neglected. Since ALA, ARV and ARA contain data about the mean of the instance there might not be much data available to us to see which instance are different from each other. So, the three best features would be PLA, PRA and PRV as we are able to compute the max of the instance using these three features. Since PLA and PRA have the same set of instance values these two features are best suited in determining the 5 data instances that are different from the total 65 instances. In the PRA and PLA plot shown below and the instance values mentioned in the table they show a peak rise for those instance values

A screenshot of a cell phone

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