DriveSafe - Test Document

Milan Chaudhari(2015csb1010@iitrpr.ac.in)
Narotam Singh(2015csb1065@iitrpr.ac.in)
Shubham Dham(2015csb1117@iitrpr.ac.in)
Shreya Dubey(2015csb1074@iitrpr.ac.in)

25th April 2017

The following includes the testing strategy of the project with system and unit testing explained in detail.

1 Machine Learning

In this part we would have to use the image provided by the previous module and will predict the outcome (i.e. the condition of driver). In this part data set is needed not only for testing, but there are other two needs of it (as Training set and Validation set), for which we will use the images used for testing Image processing and also will add the original outcomes to it. By using the original outcomes and prediction and the time taken by it to predict, we can find accuracy of the module. It will help us to find an appropriate algorithm for machine learning among SVM, Neural Networks and Logistic Regression and will help to find some parameter (such as number of layers in Neural Networks) using validation data set.
We used Neural Networks to train on the data set.The hypothesis so generated was first tested on training set

and the accuracy obtained was 93%.There was another data set solely for testing purposes and the accuracy obtained on this testing set was determined for two different datasets, for which the accuracy is 86.7% and 40% respectively. Further Testing was done on the images clicked on different android devices.Since due to lack of availability of the car,the results obtained were more or less accurate.

2 App development

Testing of this part is important to ensure that the app will work on most of the versions of android. To test it we ran this app in the different versions of android using emulator provided by android studio and also on different smart phones.