Car Collision Detection

7 Screens

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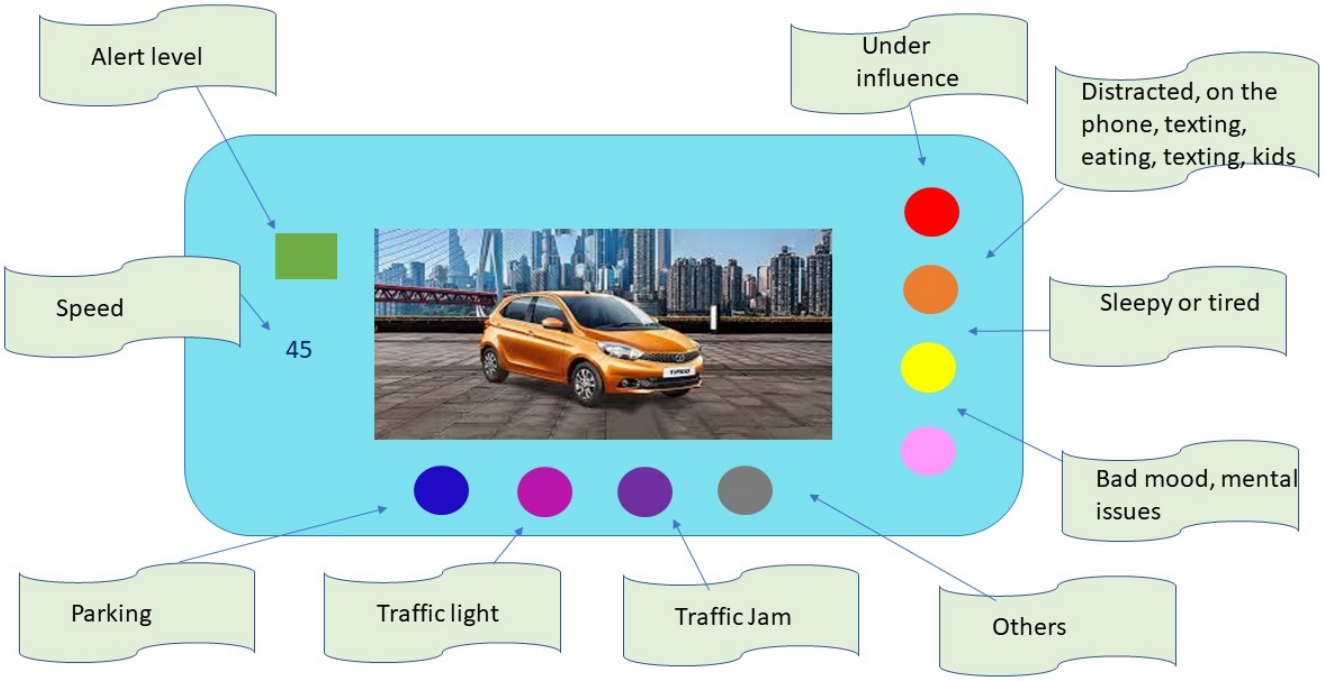
Number Of Technologies In Use

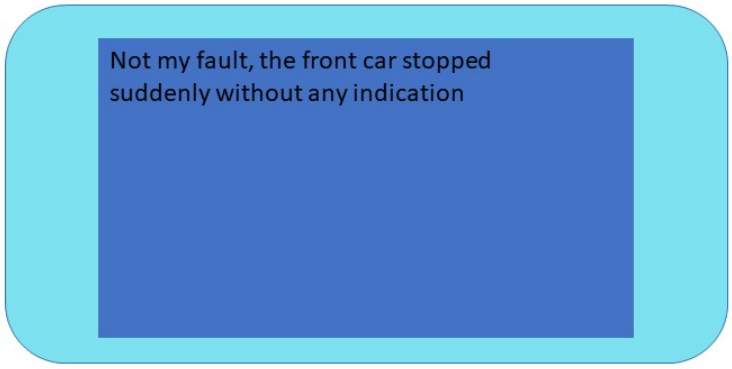
Technologies In Use

Machine Learning - OpenCV - OpenCV (Open Source Computer Vision) is a library of programming functions mainly aimed at real-time computer vision Android SDK - Toolkit for Android development

The is the app's main screen, it shows the car's speed and current alert level. On the right of the panel are the reasons for positive alert. On the bottom of the panel are the reasons for negative alert. The driver can also select others, which will bring up a next screen to let the driver's input the specific reason for positive or negative alert. Positive alert means the alert is true, negative means false alert. The reason to record these is used it as training data to continue training the model.



When the driver press the 'others' bottom, it brings up this screen for his input.



Screen for pop-up alert, there are two levels, orange for warning, red for alert

Analyse the way to measure the speed

How the app works.

This app is based on machine learning to detect the taillight of the car in front to predict possible collision. In addition to detect the car in front, it also measures the speed of the car using the function that already in the Android phone.

The user put the phone on the front window with camera facing out to take image of the front car. We the app found out there is potential collision. It pop up an alert to the user.

The first interface has two sets of bottoms for collecting the data. On the right of the screen are the bottoms for the positive alert, which means the prediction is correct. The users can push related buttons to give reasons what causes the problem.

On the bottom are the buttons for negative prediction, which means the prediction is not right. The buttons are for the reasons for the close-up.

If none of the reasons above, the user can choose the 'others' bottom, which bring s up the second screen that allows the user to input the cause.

On the first screen of the app, it also shows the speed of the car and the current alert level.