

NO TEXT DRIVING: ANDROID DEPLOYMENT OF DRIVER BEHAVIOUR ANALYSIS

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Abstract – Driving and cell phone conversations both require a great deal of thought. Texting while driving can prevent a driver from reacting quickly enough to avoid an accident. This application will monitor Mobile Texting & Mobile movement during driving. The vehicle will be ignited only if the mobile and the vehicle are paired via Bluetooth. If texting while driving is detected, this Application will automatically lock the mobile screen. This system will warn the driver initially but if the same is repeated for more than three times then the driver and the vehicle details are transferred to the Cloud and Penalty is claimed from the driver's e-wallet. Incoming calls are disconnected during the driving time, but if the call comes from the same number repeatedly then it is considered as an emergency call and the user is allowed to pick the call and the speed of the vehicle is reduced automatically.

Key Words: Texting, Driving, Detection, Bluetooth, Penalty, Emergency calls

1. INTRODUCTION

Distracted driving is constantly ranking as one of the biggest traffic safety issues. Texting while driving has become one of the most common forms of current communication among adults and teens. Texting may seem so incredibly harmless, but texting while driving can be dangerous and sometimes fatal. Texting while driving is six times more likely to cause an accident than driving drunk. Answering a text takes away your attention for about five seconds. There are some existing systems which detect texting while driving but the drawback is that they require manual activation and expensive extra devices. Also they don't have any strict penalty schemes for disciplined driving. To overcome these shortcomings we have implemented an application with more features that prevent texting while driving which leads to safe driving.

2. MODULE DESCRIPTION

2.1 Android User Registration

The drivers should install No text driving application in their mobile. Initially the user should register their vehicle details such as vehicle number, RC details, insurance details and owner details, etc., Certain amount have to be paid at the beginning to the maintain balance in their e-wallet.

2.2 Bluetooth Synchronization

The driver must synchronize their mobile Bluetooth with the inbuilt Bluetooth device of the vehicle before starting the vehicle. This is mandatory to ignite the engine, so that the vehicle starts only after the Bluetooth pairing. After the Bluetooth synchronization, the Driving Mode is enabled in the mobile automatically.

2.3 Text Listener

In the driving mode, if the driver tries to text someone during driving, this application gives alert to the driver for three times. If the user repeats the texting activity for more than three times then the mobile screen is locked automatically for five minutes. Also penalty will be claimed from his E-Wallet.

2.4 Incoming calls Listener

During driving all the incoming calls are disconnected automatically. If suppose the call comes from the same mobile number for more than three times then the application considers that as an emergency call. In this situation the application allows the driver to pick the call and the vehicle speed will be reduced automatically.

3. ARCHITECTURE OVERVIEW

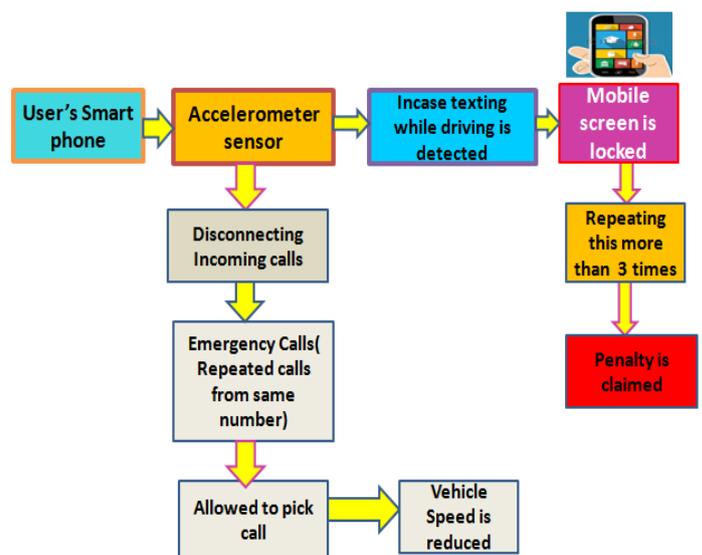


Fig -1: Architecture Overview

4. IMPLEMENTATION

4.1 Bluetooth Pairing

Bluetooth is a wireless technology standard for exchanging data over short distances from fixed and mobile devices and building personal area networks. In order to successfully pair a cell phone to a vehicle, both the phone and the vehicle must be Bluetooth compatible. Pairing is done by entering the Bluetooth pairing code. Only after the vehicle and the smart phone is paired via Bluetooth, the vehicle will be ignited. So it leads to automatic activation of drive mode, where as in other drive mode applications, the drive mode is activated only if the user desires to activate it manually.

4.2 Detection of Texting while driving

Smart phones today come with a wealth of sensors. Accelerometers in mobile phones are used to detect the orientation of the phone. An accelerometer measures linear acceleration of movement, while a gyro meter on the other hand measures the rotational velocity. By using these sensors this application detect whether the driver is texting during driving.

5. FEATURES

5.1 Penalty claiming

If texting while driving is detected, then this application will automatically lock the mobile screen. This system will warn the driver initially, but if the same is repeated for more than 3 times then the driver & vehicle details are transferred to cloud & penalty is claimed. The penalty amount is deducted from the user's e-wallet. This approach leads to disciplined driving.

5.2 Disconnecting incoming calls

In addition to texting, voice calls can also increase the risk of an accident. This application disconnects all the incoming calls during driving. But if any incoming call comes from the same number more than three times, then the driver is allowed to answer the call.

5.3 Automatic speed reduction

When the user is answering the emergency calls, the speed of the vehicle is reduced automatically. This feature ensures the safety of the user. This is done with the help of the accelerometer sensor. The motor speed is reduced automatically when the users pick up the emergency calls.

3. CONCLUSION

Thus the driver behaviour is analyzed through this application. By introducing penalty scheme, this application will lead disciplined driving. The incoming calls are also

disconnected, so that the driver would drive the vehicle without distraction. But it allows to attend the emergency calls which come from the same number for more than three times. The automatic speed reduction while answering the emergency calls ensures safety of the user.

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