DRIVE MODE APPLICATION FOR ROAD SAFETY

Amogh M. B.  
Dept of ISE  
Sai Vidya Institute of Technology. India

Harshitha  
Dept of ISE  
Sai Vidya Institute of Technology. India

Amrutha Shetty,  
Dept of ISE  
Sai Vidya Institute of Technology. India

Amogh P. K.  
Asstprof Dept of ISE  
Sai Vidya Institute of Technology. India

Abstract: Smartphones are becoming an important belonging due to their multifunction use and sophisticated features. It is one device that can take care of all of your handheld computing and communication needs in a single, small package. It is one palm sized device catering to all computing and communication needs. Unlike many traditional cell phones, smartphones allow individual users to install, configure, and run applications of their choice. A smartphone offers the ability to confirm the device to your particular way of doing things. The most standard cell phone software offers only limited choices for re-configuration, forcing you to adapt to the way it is set up. On a standard phone, whether or not you like the built-in calendar application, you are stuck with it except for a few minor tweaks. Today's smart phones are one of the assistant to do and solve things. Smart phone provides a variety of entertainment in the form of music and video. They allow access to the internet to get latest news feeds about current events occurring across the globe. However, not all the right places to hear the ringing of smartphones like the prayers, lectures, and meetings. In this situation, people may forget to set their smartphone into the silent mode. As a lifestyle that not only brings discomfort to others but to our life.

I. Introduction

Today people are so attached to smartphone that even a minute sound can alter the behaviour of the person he feels the urge to check his phone which cannot be avoided. This may lead to serious accidents when the person is driving. We often see large hoarding on National highways, state highways and inter-city roads displaying caution messages such as “don't drink and drive”, “Don't use cell phones while driving” when a person is driving at high speed he needs his full concentration on the road and minute distraction can lead to accidents. In this paper we propose a drive mode application it disconnects the incoming call and sends a SMS to the caller as well as the receiver. For example if Amogh is driving the car and gets a call from his friend akash then the call will be cancelled and SMS will be sent to the Akash saying that “Amogh is driving and please call later” and another SMS is also sent to the driver after he exits the drive mode application the message will be displayed saying that “Akash had called at 2:00 when you were driving”.

II. Existing system

In this era of new smartphone technology there are new emerging innovations the Motorola Cell phone came up with Moto gestures which has some particular physical movements which can start up an application. The same Motorola came up with an idea that if the cell phone is kept upside down then the call gets hung up and sometimes it fails to hang up. People sometime tend to keep the phone upside down which may initiate this response which is blunder. To eliminate this we have developed the drive mode application for road safety. For a better and safer driving experience use the drive mode application that eliminates the interference of the smartphone with the human when he is driving.

The different reasons to use Cell Phones in Car:

1. **Texting**: Users can send SMS or use internet chatting apps like (Whatsapp, Facebook Messenger) while driving which is dangerous.
2. **Internet Surfing**: By navigating through the World Wide Web or Internet,
3. **Calling**: Users may use the cell phone to make/receive a call while driving.
4. **Scrolling down news feeds:** Users may use Cell phones to check the news feed on some social media applications.

5. **Inline usage:** Users may use the phone to send pictures or share a document with a co-passenger which may lead to serious fatal Accidents.

### III. Proposed system

This system would reduce the number of fatal injuries. This system would route the Incoming Calls to ensure the driver will not be distracted with the incoming calls. The caller who has called the driver shall be notified via SMS “the Person is currently driving please call later or leave a message”. The Driver also shall be Notified via SMS that the particular person has called at this time. Eg “Arush tried calling you at 1:00, Call was diverted because the drive mode was enabled” The proposed system would take into consideration the person GPS to calculate the acceleration if the Acceleration is below 20km/h then the calls won’t be diverted. If the acceleration of the car is above 20km/h then the calls will be diverted.

**System Architecture**

**THRESHOLD COMPUTATION:** The IR sensor will monitor the wheel rotation. It will give data to the Arduino Microcontroller.

**Arduino Microcontroller:** It converts RPM to km/h. Based on this speed will be calculated. That speed will be displayed in the LCD. The speed will sent to Bluetooth on the Request of Android.

**Bluetooth:** It transmits the data to the Android Unit. On request of the Android Device.

**GPS:** It’s Used to Monitor the User location.

**Call Manager:** The should be cancelled based on the Threshold speed given (in this its 20km/h).

**SMS Manager:** The SMS should be sent to the caller. An SMS should be sent to the Receiver. (Eg: If x calls y while Driving then X received an SMS saying “Hey you reached Y I am driving call you later.”)

### IV. Implementation

The below figure shows that how exactly the implementation of the entire process takes place.

**Fig 2**

When the user is driving the car the wheel rotation will be monitored and the threshold will be computed. To calculate the wheel rotation we are using the IR sensor which gives the RPM which will be converted to a Km/h. The IR sensor will give the particular data to the Arduino Microcontroller where the actual computation takes place. We have the Bluetooth which is used for transmitting for the android application. In the embedded part we are also using the LCD for displaying the speed (which is for our reference). The android application then receives the speed if the speed is above 20km/h then the call hang up takes place.

Complete working flow chart for the system is given below.
V. Advantages

1) Reducing the Number of Accidents.
2) Drivers won’t be distracted.
3) Call routing enables Hassel free Driving.
4) High Security.

VI. Conclusion

Drive mode application in Android Mobiles is a next level of Intelligent Software which reduces human intervention for simple task such as sound profile switching. Android Smartphone becomes much smarter by this application. We are also strongly concerned of the in app notifications and pop-ups in smartphones may be distracting we are working to completely isolate this device and provide a good non-technological interference with the human.

VII. References

[5] Philipp Kerschbaum ; Lutz Lorenz ; Sebastian Hergeth ; Klaus Bengler “Designing the human-machine interface for highly automated cars — Challenges, exemplary concepts and studies”, IEEE March 2016, 10.1109/ARSO.2015.7428223