

**RESULT PAPER: DRIVE NOW TEXT LATER, DETECTION OF CAB  
DRIVER ACTIVITY WHILE DRIVING**

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**Abstract**— Now a day's use of Mobile Phone is one of the top dangerous behaviour for drivers. There are so many systems and Android applications are Implement to detect such type of behaviour of driver. For identifying this type of behaviour detection our system to be practical, a key property is its capability to distinguish driver's mobile phone from passengers'. In previous systems the problems generally rely on user's manual input, or utilize specific localization devices to determine whether a mobile phone is at driver's location. In this paper, we have proposed a new approach which is able to automatically detect use of Mobile Device without using any extra devices. Our idea is very simple: when a user is trying to composing messages, the sensors (i.e. gyroscopes, accelerometers, and GPS) of smart phone embedded for collecting the associated information such as touch strokes, holding orientation and vehicle speed. After that this information will be analysed to see whether there exist some specific Test and Driving patterns. We will get the results that our approach can achieve good detection accuracy with low false positive rate.

**Keywords** — Texting while Driving, Road safety and measures, gyroscopes, accelerometers, GPS

### Introduction

Smartphones are small computers which uses android as operating system. Data communication between the people/user has become faster using smart phones. Calling and texting otherwise called as messaging is the most important and basic activity that has been done using smart phones. But texting while driving has become most common habit between the drivers. This is one of the most hazardous things performed by the users of smart phone. This act becomes major distraction from driving. This leads to road accidents and causes damage to the drivers and also other common people. Usage of mobile phones while driving can affect your alertness of surroundings, which leads to accidents. This term in short is referred to as T&D that is Texting while Driving. This is considered as one of the top most dangerous activity done by the drivers. A research says that, the drivers who send messages while driving are 23 times more likely to experience a crash on others when compared to other drivers who are dialing, talking or listening. Even though, many laws are imposed to avoid T&D, the users are involving in this activity. To stop these activities of drivers and to identify the T&D, many mobile apps are now developed and practiced between the users. This system does not require any manual input from the driver. This acts as the major advantage of this over other T&D system. In other detection system the major problem is they require user input or activation or it either disables all the mobile phones in the user location (such as car) , this causes unnecessary inconvenience to the users. The key challenge is detecting whether the mobile phone belongs to driver or passenger. For this purpose, some systems uses camera to monitor driver's activities. But this method is infrastructure heavy and required high hardware facilities to implement real time video processing. Some of the works are done for detecting T&D based localization. Here some extra devices in combination with mobile phone work collaboratively to determine the user location. To enlighten this idea most successfully a method which does not require any extra devices except user's mobile phone was needed. Here are some patters that are used to distinguish between the driver and the passenger.

Pattern1: Editing messages after the car speed is decreased.

Pattern .2: Stop editing when the car is taking turns.

Pattern 3: Holding the mobile phone uprightly while editing the messages.

Therefore by using this system the T&D patterns are identified by the data collected the smart phones and the other embedded sensors like accelerometers, gyroscopes and GPS. The other important factor is that, this system does not try to read the content of the messages. Therefore privacy is preserved here.

### RELATED WORKS

The existing system to prevent T&D there are two categories, the first one is which simply blocks all the messages from the user end. The best example for this is driver mode or bike mode available in the mobile phones. But this existing system does not identify the driver's mobile with the passengers. The next category is identifying whether the mobile is used drivers or passengers and it blocks the driver's mobile only. In this method identifying the location of the mobile phone in the vehicle is important. For this localization techniques are used to identify the driver's location. However this approach has some drawbacks that identifying the driver's location requires some special sensors and required high deployment cost. Identification of driver's location and driving patters in also infrastructure heavy and intrusive.

Therefore for overcoming these drawbacks infrastructure-less approach is required. That is identifying the driver's usage of mobile without any extra devices except his/her own mobile phone.

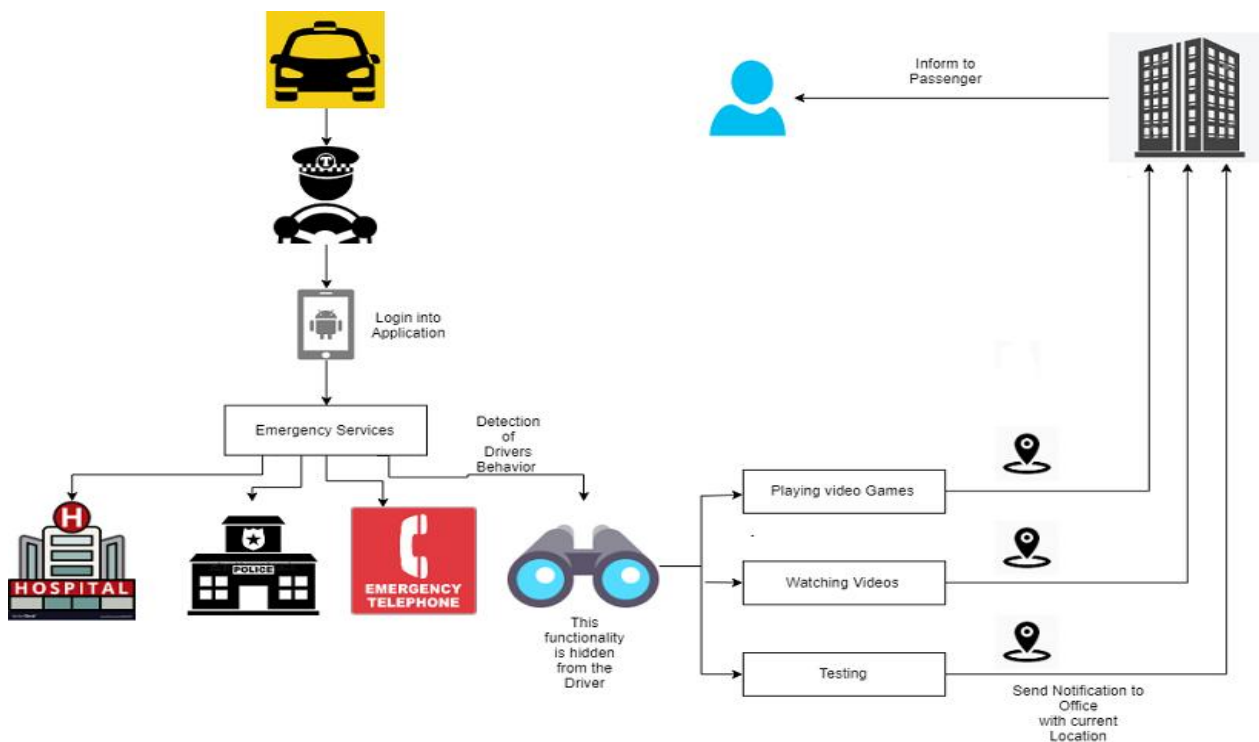
### PROPOSED SYSYTEM

In our Proposed System we have developed an Android Application which is basically focused on to detect driver's activity while driving car. We built our application with in Traveling scope where people need to travel in day to day life. Along with this proposed system we have added some more modules.

1. Emergency Police Help
2. Emergency Hospital Service.
3. And Emergency contact.

We have explained above modules in Detail in below section

### SYSTEM ARCHITECTURE



### SYSTEMS FEATURES

#### 1. Android Application:

Our 80% percent System is based on Android.

**Step1:** First of all Drivers will Enter User Name and Password for Login.

**Step2:** Then user can see three services that are – Hospital, Police Station and Emergency Contact.

**Step3:** If Driver need one of them service then he can get service in one click. For example if Driver want emergency Hospital service (in case of accident) then he will just click on hospital service, then our Application will fetch current location and System will send notification to Nearest Hospital. Driver can use same service for police also.

**Step 4:** The fourth Module is our main Idea. This module is invisible for driver. This is basically run in background for monitoring Drivers behavior.

As we shown in the diagram our System will monitor the misbehavior of driver for example Use of mobile phone like playing Video Games, watching video games, chatting while driving.

Here the touch strokes are identified by using the gyroscope data. Using the training data set a touch stroke template is constructed. On this gyroscope data the template is utilized as wavelet basis and they carry out wavelet transform. According to the occurrence of touch strokes the significant peaks and the location of the peaks are selected.

**Step 5:** If our System detects this type of behavior then system will sent notification to admin/office with current location of the cab.

## 2. Java Web Portal:

We have created one java portal for receiving the notifications of abnormal driving of drivers as well as monitoring on Drivers.

### IMPLEMENTATION DETAILS

#### General structure of the system:

The system is composed of three-layered structures:

1. A database for data storage, MY SQL.
2. A web based application and Apache Tomcat web server
3. Users or Clients.

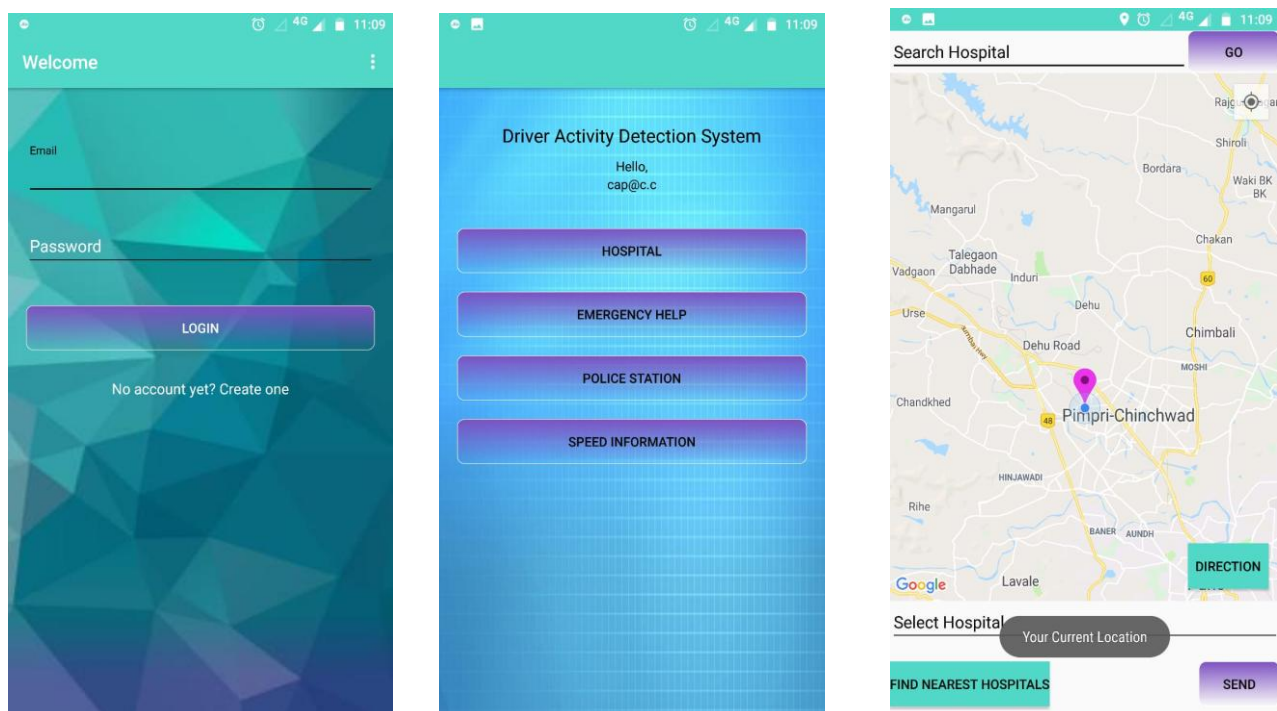
As database, MYSQL is used since; MySQL database management system is open-coded software and it has enhanced specifications . To develop this system, a server based and fast JSP servlet programming language is preferred. For the developed software, Apache is used as a web server which is a strong, knowledge and the flexible HTTP (Hyper Text Transfer Protocol) server and the open-coded programming language. The web server is software sending the pages stored under the web address you are connected to.

#### Database design

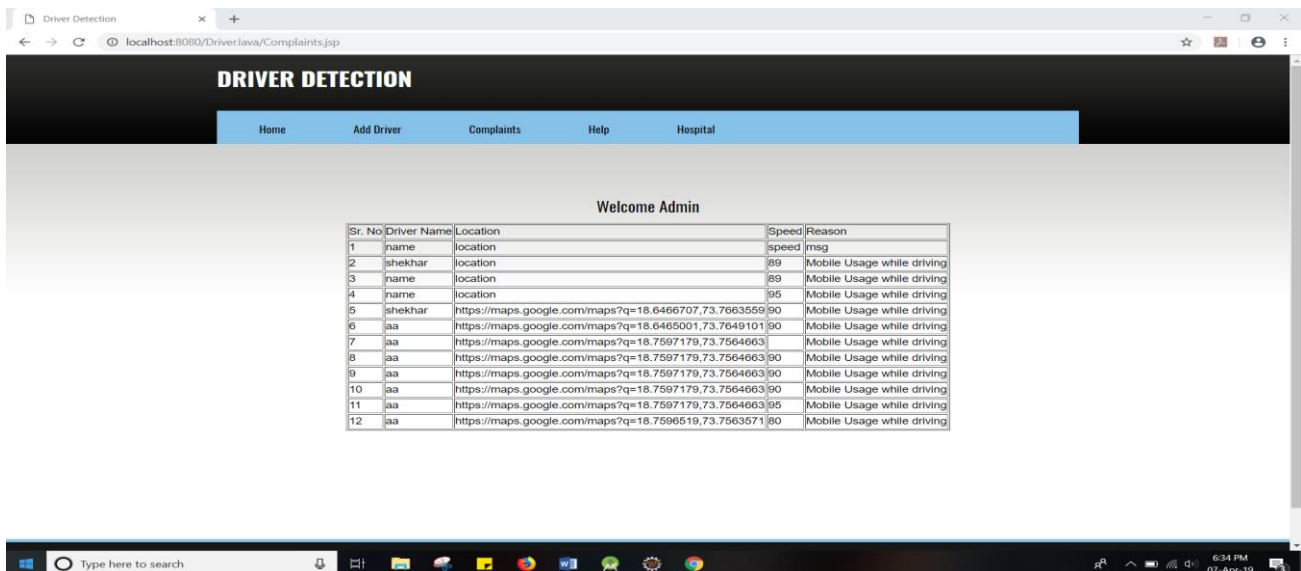
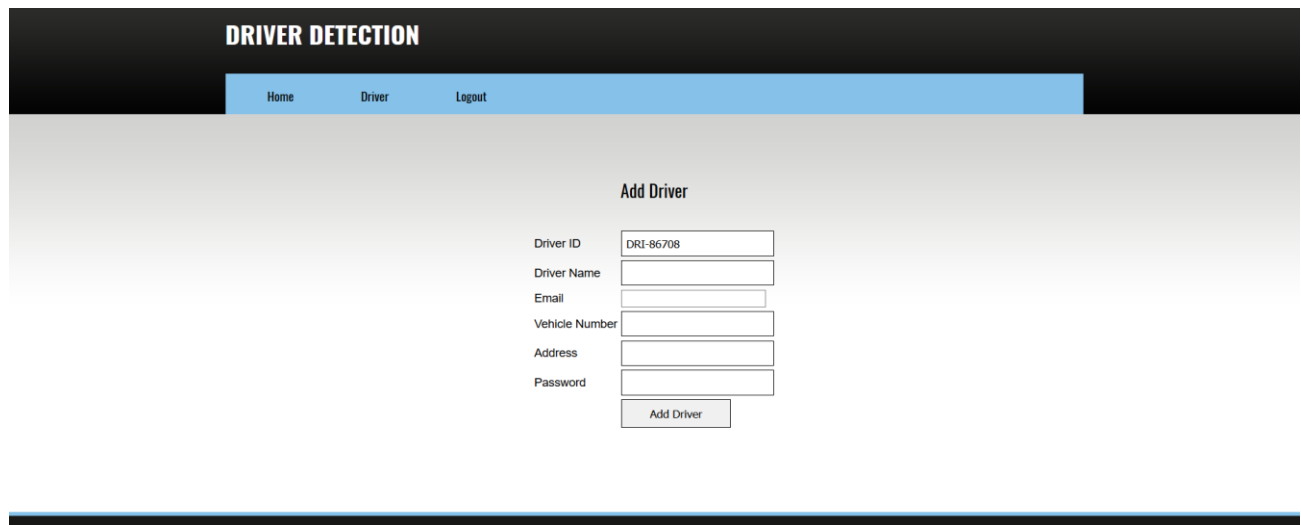
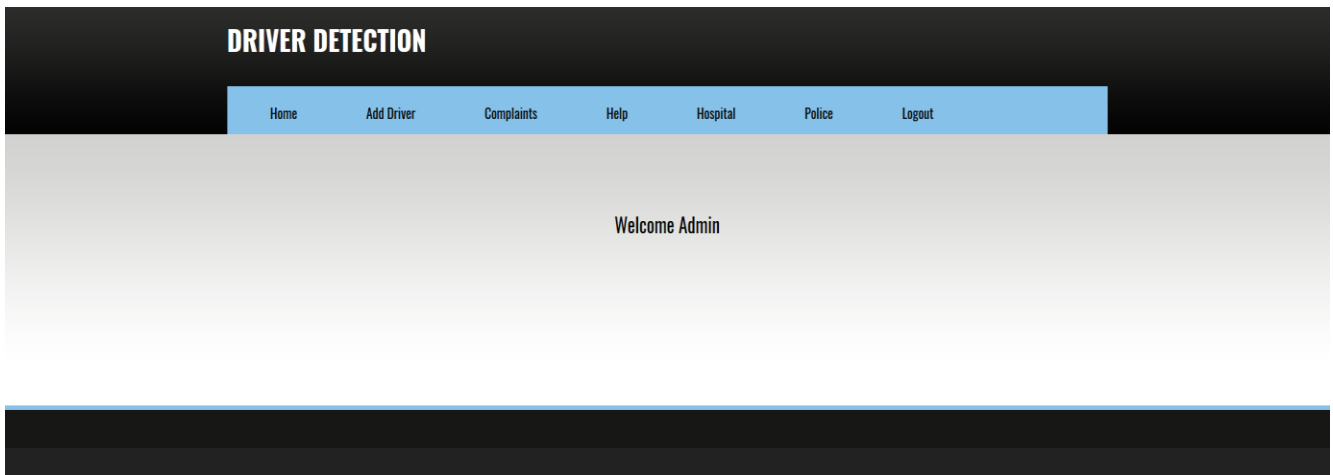
The database infrastructure is carefully emphasized in terms of circulation and recording. The database is designed to compile the largest amount of data by using minimum amount of system source while it is keeping all data safe.

### SNAPSHOTS

#### Android - Main Application



#### Java – Admin Portal



### CONCLUSIONS AND FUTURE WORK

In this paper, we proposed System to detect use of mobile while driving. We are submitting a novel method to make it simple. Here we are using the authority method with some patterns that will guide us how smart phones are used in moving vehicles. The associated information about some build in sensors in the smart phones will be collected and these sensors are analysed with hypothesis testing and checked for T&D patterns match. The outcome of this approach will achieve good detection accuracy. Many anti T&D mobile phone applications are sustain with this method.

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