Car Accident Tracker

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Abstract- *Today traffic accidents are occurring more and they are fact of life. Some accidents are unavailable, studies show that the long response time required for emergency responders to arrive is a primary reason behind increased in suffering of serious accidents. To reduced this response there is away to reduce the amount of time it takes to report an accidents now a day's smartphone are universal and with network connectivity are perfect device to immediately inform relevant authorities about the perfect device to immediately inform relevant of accident. The development of system that uses smartphones to automatically detect and report the car accident happening in particular place. Data is collected from the smartphone's accelerometer and analyze using dynamic time warping (DTW) to determine the security of accident. In addition accident can be view on a smartphone over the internet offering instead and reliable access to information concerning the accident. By this implementing this application and adding a notification system, the emergency responders of traffic accident can be reduced the response time and perhaps help in reducing fatalities.*

Keywords- GPS Location Tracking, Accelerometer, Accident Tracking.

I. INTRODUCTION

Traffic accidents are a fact of life. While accidents are sometimes unavoidable, studies show that the long response time required for emergency responders to arrive is a primary reason behind increased fatalities in serious accidents. One way to reduce this response time is to reduce the amount of time it takes to report an accident. Smartphones are ubiquitous and with network connectivity are perfect devices to immediately inform relevant authorities about the occurrence of an accident. This report presents the development of a system that uses smartphones to automatically detect and report car accidents in a timely manner. Data is continuously collected from the smartphone's accelerometer and analyzed using Dynamic Time Warping (DTW) to determine the severity of the accident, reduce false positives and to notify first responders of the accident location and owner's medical information. In addition, accident scan be viewed on the smartphone over the Internet offering instant and reliable access to the information concerning the accident. By implementing this application and adding a notification system, the response time required to notify emergency responders of traffic accidents can reduce the response time and perhaps help in reducing fatalities. Smartphones are becoming more advanced and complex, and support a large number of sensors including audio recorders, Global Positioning Systems (GPSs), accelerometers and light and temperature sensors in addition to many others. There are many opportunities of implementing consumer applications that intelligently exploit the built-in sensors of smartphones. In addition, most smartphones support wireless data services which provides additional opportunities for building consumer applications that exploit the sensors and the network connectivity afforded by the various types of connectivity ranging from SMS, GPRS and 3G/4G.

II. PROBLEM IDENTIFICATION

There is a gradual increase in deaths due to accidents. Hence it becomes very difficult for victim to move to the hospitals and contact his friends and relatives at the time of emergency. The vehicle users cannot take immediate action at the place where local help is not available and hence it may result in poor death.

2.1 Problem Definition

India has much number of people who aren't really aware of the hazards of rash driving. Even if they are aware they aren't serious about the after results which are very dreadful. The vehicle divers don't really care about the speed and hence result in accidents. Even if the accidents are of acute seriousness, it may happen that no immediate help may cause deaths at many times.

2.2Existing Systems

There is practically no measure to provide quick help after the accident occurs in India. The nearby locals help in moving the injured people to the nearest hospitals.

2.3Need for New System

According to the latest survey, there is one death in every 4 minutes in India. The death rate is shocking; this happens due to ignorance in safety measures. Also the delayed precaution measures that could be given after accident occurs

are also the reason in deaths in India. Hence a system is needed that can provide immediate help after accident occurs.

III. PROJECT OBJECTIVE

The project must be capable of performing following tasks:

1. The system must periodically read the accelerometer.
2. It must capture current location using GPS.
3. It must fetch correct vehicle owner data and contact emergency contact numbers.
4. The system must send alert messages to police station and emergency contacts.

IV. PROPOSED SYSTEM AND METHODOLOGY

4.1 System Architecture

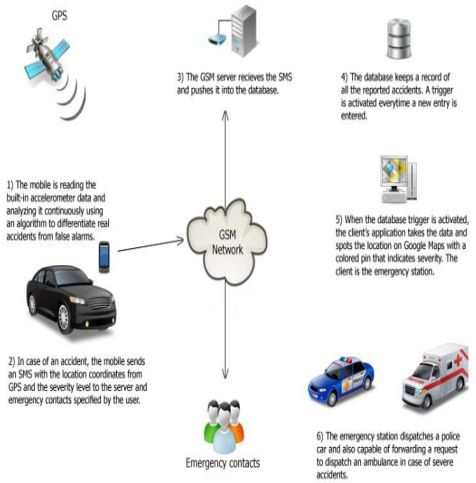

Fig. 1.Architecture Of System

1. The mobile continuously reads the built in accelerometer data and analyses it. If the mobile is in acceleration more than a predefined threshold, then the alert is sent to the server. The alert contains the current location of the user.
2. The server receives the alert and pushes it to the database. The database keeps records of all the accidents.
3. The data of user is found in the database for emergency contacts. The emergency contacts are notified about the emergency and current location.
4. The nearest police station is also informed about the accident with location and user information.

4.2 Modules of the System

1. User Module (Mobile) : The mobile user has an app installed in its phone. This app lets the server know about the accident, if occurs. Also it collects current GPS location and tracks the accident location. It notifies the server about the accident along with GPS location and the mobile number.

2. Admin Module (Server): Server module is responsible for identifying the user and notify nearest police station and relatives/friends about this accident.
3. GPS Module: This module sends current location information which makes it easier to detect the exact location.

4.3 Procedure

1. When the mobile user is driving in the car and if an accident occurs, accelerometer in the mobile phone alerts the app.
2. The app calculates the intensity. If it is greater than the threshold value, the app gathers GPS information, mobile user information and sends it to the server.
3. The server then collects relatives/friends information and send alert to them about accident.
4. The server also collects nearest police station number and notifies them about the accident.

V. APPLICABILITY

The system should be applicable in India so as to make proper help available to victims of accidents. The system is highly beneficial at expressways in India where there is more threat of accidents.

VI. XPECTED RESULT

We expect the following results from the system:

1. Accelerometer Correct Working:

The accelerometer in the mobile device should properly and periodically note the state of device. It must be working properly

2. GPS Location Identification:

GPS location identification is the most important task that the system must perform in order to track the current location of accident.

3. Messaging System Working:

Also the messages must not be delayed and should be delivered to police station and the friends of mobile user in case of accident.

VII. LIMITATIONS OF THE SYSTEM

The limitations of our system are as follows:

The system may fail for weak internet connection areas where it will be very difficult for mobile device to alert the server about the accident.

VIII. CONCLUSION

Car Accident Tracker is a system that if practically applied in real time can save many deaths. We hope that the system works very quickly. First, the accelerometer gathers the shook up intensity of phone. Secondly the app compares threshold value to the intensity. If it is greater, then it captures the GPS current location of the mobile device and sends it to server. Server then alerts the notification to its friends and nearest police station. We have gathered all the necessary requirements about the project and have understood the detailed working of the system.

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