

ACCIDENT SPOT DETECTION APPLICATION

Shivangi Singh, Abhishant Kumar

Department Of Electrical & Electronics, Pranveer Singh Institute of Technology, Kanpur, U.P

ABSTRACT:

Rapid increase in the traffic has increased the concern related to the safety of the people. With more crowd and hustle the people's life is at risk. It has been observed in many survey reports that the ratio of death due to road accidents has increased tremendously. Moreover, the death occurs due to the delay in the treatment of the victim. Thus, a key strategy for reducing life risk on road is to handle accidents and incidents as quickly as possible to keep traffic flowing and improve the safety of victims. We need to make a device which is capable enough to detect the location of the victim who has met the accident. In order to provide a proper medical attention to them early. Mobile smart phones today are equipped with numerous sensors that can help to aid in safety enhancements for drivers on the road. In this paper, we use the accelerometer sensor to detect orientation. Database software to store and save data. GPS and AGPS to detect the location.

INTRODUCTION:

In this fast pace world everyone is on hurry to reach their destination. This encourages them to do harsh driving which may cause a threat to their life. Factors such as sudden vehicle break and hazardous road conditions, which often may lead to accidents, are not always apparent to the person behind the wheel.. In recent years, there has been tremendous growth in smartphones embedded with numerous sensors such as accelerometers, Global Positioning Systems (GPSs). We are going to use these salient features of the smart phones to help the victim those who met with the road accidents. The fall detection and accident alarm system for the vehicle can gain attention because the system will save the life and give medical treatment on time. The use of database will help to contact the hospitals, near-by police stations and relatives of the victim.

ANDROID PLATFORM:

The application is developed in android platform. This platform is used because its easily available as well as founded in open source. Because of the open source nature of Android, the developers who get to work on this mobile platform get a lot of exposure to Google's philosophy of freedom and innovation. It provides multi-platform support and multi-carrier support. These are easy to integrate.

PHONEORIENTATION&LOCATION:

The orientation of the phone is a variable that may be constantly changing with the movement of the vehicle, and so might be arbitrarily placed inside



the vehicle when the driver enters. The phone's orientation for each experiment remained the same, with the y-axis pointing toward the front of the vehicle and the screen (z-axis) facing the roof. A holster that was provided with the phone was used along with vehicle to secure the phone to the vehicle's surface. To obtain appropriate data, the phone was tested in multiple locations for each experiment before a final decision was declared. These locations are shown in figure 1(b) below as locations1–5.



The specific surface used was dependent on which experiment was being performed. For the road condition analysis, it was firmly secured to the floor board of the front passenger section shown in Fig. 1(a). For analyzing driver behavior, the phone was fastened on the center console, i.e., loc. 1 in Fig. 1(b). The driving behavior experiments each had a time duration of less than 2 min, which incorporated multiple maneuvers, whereas road condition measurements varied, lasting for the length of the road being measured.

Fig. 2. Phone placement locations in a vehicle. (a) Vehicle floor board with the y-axis parallel to the forward motion of the vehicle used for road anomaly identification. (b) Locations in which the phone was tested to measure driving maneuvers. It was determined that loc. 1, which is the center console, gave the best relative data with low engine feedback.

USER AUTHENTICATION:

In this module new user can register to get privileges of use this application. Once registration done user granted with User ID and password to access this application. User login with user ID and password, user can set contact details to send SMS alert system.

ACCELERATION & & DECELERATION:

Increasing driver awareness about vehicle behavior is beneficial to everyone on the road. The way a vehicle is maneuvered on the road can influence how other drivers react as they habitually follow previous movements to potentially avoid an unforeseen road hazard.

We utilized the x-axis and y-axis data from the accelerometer to measure the driver's direct control of the vehicle as they steer, accelerate, and apply the brakes. With the phone located on the center console, we recorded driving behaviors of acceleration and deceleration.

SHAKE MOTION (ACCIDENT):

Once done with authentication and register for details, now application is ready to use. If accident occurs the mobile then start accelerometer sensor working automatically send SMS to the user.

SMS MODULE:

If Accident occurs the mobile automatically starts the accelerometer sensor generate alert message automatically send to the user via SMS. If the user



drives very harshly, accelerometer sensor is used to find emergency situation like as over speed driving and accident situation. In this time this application can automatically forward emergency message with location to the contact numbers, which is stored by the user.



already in abundance but portable enough as well to be one of the most effective multipurpose device. Mobile smart phones today are equipped with numerous sensors that can help to aid in safety enhancements for drivers on the road. We have not used any such external equipment which would increase the infrastructure costs. . Our device, which is a Smartphone, contains GPS, microphones, and an accelerometer offering flexibility and easy maintenance and portablilty.

GPS AND AGPS MODULE:

Global Positioning System (GPS) GPS is a satellite based Navigation tracking often with a map showing where you have been. It gives us the value of longitude and latitude which determines the point of location on earth.

Assisted GPS or Augmented GPS is a system that often significantly improves the startup performance of a GPS satellite-based positioning system. A-GPS is extensively used with GPScapable cellular phones.

CONCLUSION:

The main agenda of this paper is to provide road safety and help the victims to reach the hospital at time for the treatment. The main contribution is to safe the life of the people who die due to not getting the medical attention at the right time. we serve a propose of making a device that is not only