

# Accident Avoidance and Alert System

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**Abstract:** *Accidents are the main threat in today's modern world. All though the technological development in automobiles increases day by day, there are no proper advancements in the perspective of accident avoidance and detection. This system avoids accidents due to collisions occurring between the vehicles because of the driver's negligence. In case of any accidents, there is smart rescue system in the vehicle which helps in sending the location of accident spot to the family members. So, the proposed system is designed for vehicle which will not only prevent the accidents but will also look over the safety of the driver. It is used to analyze the cause of vehicular accidents and prevent the loss of life and property arising from vehicle accidents. The system also involves the improvement of the security by preventing the damage of the car. This system records the relevant details about a vehicle such as detect vibration of the vehicle, detect orientation or inclination of vehicle. Automatic parking or stop lighting and go charging station in.*

**Keywords:** Car Accidents, GPS System, Accelerometer, Global System for Mobile Communication, Automatic Accident Detection, Arduino UNO.

## I. INTRODUCTION

The vehicle accident is a major public problem in many countries. This problem is still increasing due to the riders poor behaviors such as speed driving, drunk driving, riding without sufficient sleep, etc. The causes of a car accident are not too difficult to investigate as plane crashes but some cases are very difficult to solve due to contradictory stories of drivers.

This system is a digital electronics device, which records and store vehicles speed, vehicle location, vehicle temperature, vibration, distance from obstacles, real-time and vehicle other status information. It helps to discover and to analyze the reason for an accident easily. In this project we proposed the GPS (Global Positioning System)/ GSM (Global System for Mobile Communication) for driver assistance and car surveillance.

Accelerometer and GPS tracking system is developed for monitor the accident. The system consists of cooperative components GPS device and GSM module. In the event of accident, if any injury happened to the car driver or passengers so maybe there will be loss of lives due to delay in medical help.

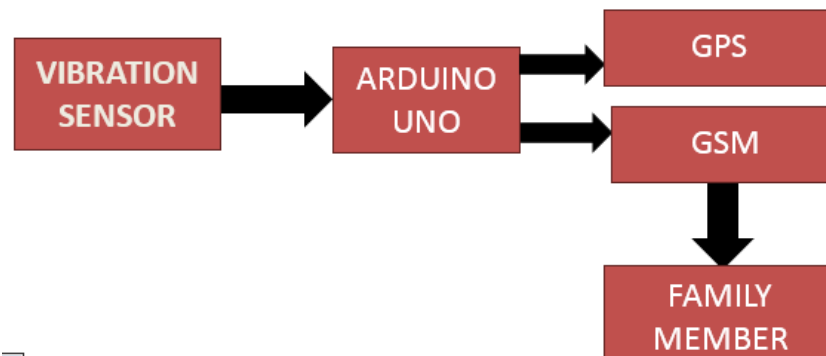
Keeping this idea in our mind, we are proposing a system where car itself intimates the concern emergency service for immediate reaction in case of accident or any emergency situation.

After the Accident, this wireless device will send mobile phone short message indicating the position of vehicle by GPS system to family members, nearest police station and hospitals.

## II. HOW PROPOSED SYSTEM IS DIFFERENT

Currently there are only few technologies for accident detection. As it is done manually there is loss of life in golden hours. The accident victim is dependent on the others to rush him to hospital. Many a times an accident goes unnoticed for hours before help comes in. Due to all these factors there is a high rate of the accident victims. Proposed system alerts driver to avoid accidents as well as it sends information regarding accident location to family members of driver, so they can easily communicate with the nearby hospital or easily reach towards accident place, so that accident victims' life can be saved. This marks the variation in the developed system as compared to existing accident avoidance systems.

**III. BLOCK DIAGRAM**



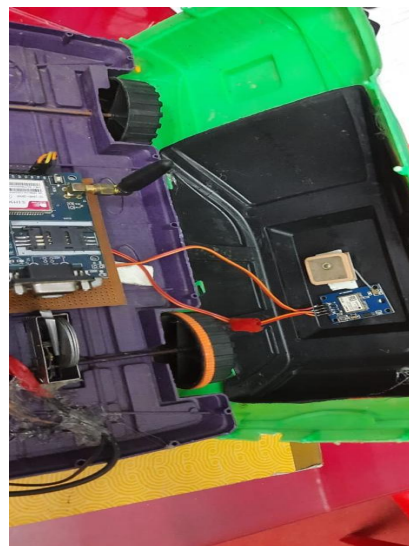
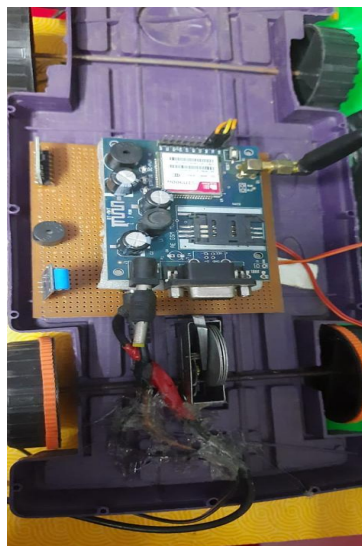
**IV. METHODOLOGY**

- **Step 1:** First of all, we did all the programming requirements for the execution of sensors. We define some threshold value to all the sensors which will help in the detection of an accident.
- **Step 2:** Whenever car starts whole system starts working. Power is given to Arduino and all the sensors, GSM, GPS are activated. GSM programming includes the mobile number of family members of that car driver.
- **Step 3:** The system will understand yes there is an accident happen if and only if when all the sensor's values go above the threshold level. When an accident happens the temperature of a car increases it will be detected by the temperature sensor. During the accident, if the car tilts then, tilting will detect by an accelerometer and if a car is crash it will detect by collision sensor.
- **Step 4:** GPS continuously tracking the location of the car; hence the location of a car will send with the help of GSM to the nearby hospital and the family members.

**V. MERITS**

- Low cost, less complexity.
- Reliable
- Easy to implement
- You can find the car if it's lost or stolen

**VI. RESULTS**



**VII. CONCLUSION**

The system proposed here is overall efficient in all the way. Especially, it is best in the investigation for automatic accident detection and notification, navigation, security, web-tracking. The contribution of our demonstration is that we propose a feasible and useful scenario for public safety. Our demonstration shows how to utilize the system for car accidents and crime prevention. The greatest advantage is that by providing emergency medical services on time possibility of injury and deaths rates will be reduced.

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