

A NOVEL IOT BASED APPROACH FOR VEHICLE ACCIDENT PREVENTION AND DETECTION

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ABSTRACT

With an expanding number of vehicles, the quantity of accidents is likewise expanding at an uncommon rate. Every year, more deaths happened because of the vehicle accidents. The main reasons of those accidents are because of the intoxicated driver, tiredness, over speed and seriously planned speed breaker. Our proposed framework gives a productive, practical and constant answer to avoid vehicle accidents. The vehicle naturally stops if the liquor level and speed of the vehicle is more than reasonable level and in this manner brings caution up in this we have added one more application if the driver isn't product safety belt then it stops engine automatically and cut fuel supply. The system is designed with microcontroller, liquor sensors, relays, power flexibly and so on. If there should be an occurrence of augmentation we may alarm the separate proprietor of the vehicle and police specialists by sending SMS alongside vehicle ID through GSM network, similar information is posted in IOT cloud.

Keywords: Vehicle accidents, Microcontroller, IR sensor, liquor sensor, Ultrasonic sensor.

I. INTRODUCTION

As per Association for Safe International Road Travel Report, around 1.24 million individuals pass on and 50 million individuals are getting injured on the streets every year in the World. To beat these issues, many vehicle makers have attempted to propose speed control procedures to guard up a vehicle separation. Toward this path, the exertion is continuing concocting a security driving application for vehicles by new rising IoT-situated innovation, which is utilized for contriving a more successful arrangement. As such, crushed driving is most ordinary explanation of incidents in for all intents and purposes all countries wherever all through the world. This structure should be presented in the vehicle.

This proposed system is generally used to recognize the failed drivers and control their vehicles to reduce the incidents. This structure is presented in the vehicle. If the individual is flushed and driving the vehicle, by then alcohol sensor present inside the vehicle distinguishes the alcohol through the breath of the driver. UV sensor is accessible in the front and back of the vehicle. If any vehicle or thing is accessible, by then speed of the vehicle eased off. If nothing is accessible, by then vehicle is ended and ringer will ring. In case any incident happen vibration sensor distinguishes it and establishes a connection with the family members.

The objective of this undertaking is to propose and build up another Smart Vehicle Over speeding Detector utilizing IoT innovation for cautioning data about over speeding vehicles. The keen vehicle over speeding identifier is extremely basic for the human existence as there are countless mishaps in street consistently. This investigation gives an overall thought regarding a keen vehicle over speeding finder and furthermore focuses on the usefulness of the over speeding identifier by utilization of IoT advancements. Likewise, the flow research focuses on the different strategies for controlling the over speeding radars utilizing writing study.

II. MOTIVATION

As indicated by the World Health Organization (WHO) report, almost 1.35 million individuals kicked the bucket in road accidents, making street traffic wounds the eight driving reason for death worldwide. The quantity of fatalities related with street mishaps is incredibly high, consequently, measures must be taken to improve street wellbeing. Most wounds brought about by mishaps are not genuine, and the casualty's life can be spared whenever protected opportune. Nonetheless, it takes extra deferral to physically inform

the crisis groups because of helpless correspondence instruments, accordingly, casualties are left unattended for quite a while, bringing about an expanded demise rate.

The consequences of road accidents are not just constrained to the loss of human lives yet, also incorporate the destruction of property, traffic blockages, and immense economic loss. Thus automatic accident detection systems are the need of time, which can speed up the rescue operations and limit the casualties after the mishap and numerous lives can be saved. This paper features existing mechanisms to detect accidents, its working, and limitations. Furthermore, accident prevention methodologies, accident contributing factors are highlighted as well.

III. PROPOSED MODEL

A proposed system which uses eye blink sensor and programmed stopping mechanism to hinder the vehicle and acquire it the condition of end, if sleepiness is identified in driver. IR sensors are utilized to screen the eye blink and distinguish the condition of laziness. Infra-red beams are communicated to the eyes by methods for an IR transmitter the IR collector then again get the reflected beams from the eye. On the off chance that the yield of IR collector will in general be high, it infers that the eyes are shut. Consequently the laziness is identified by methods for checking this high/low yield. Its fundamental modules comprise of a caution that cautions the driver if tiredness is recognized, programmed stalling to hinder the vehicle, and carry it to end state.

An alcohol sensor set in the system, is utilized to screen the substance of alcohol in blood. Alcohol sensor senses the drivers breathes and determine the alcohol level. A threshold limit is set and if the substances are more than the pre gotten limit, the vehicle doesn't move. GPS identifies the area of the vehicle. Messages are sent by methods for GSM to the pre-brought portable numbers and advise them that the individual is exceptionally inebriated and can't drive. The system centers on the preventive measures to evade any dangerous circumstance. The system would be useful to public as a rule too, since it won't permit alcoholic individual to drive. Nonetheless, its fundamental restriction is that there could be a bogus caution on the off chance that when the individual sitting close to driver is smashed however the drive isn't tanked, besides outside obstruction of air can likewise influence the exhibition of alcohol sensor.

Since the streets on the sloping territories are steep and stunning. To execute this instrument, the system utilizes ultrasonic sensors. The system alarms the driver going on one roadside about the vehicle coming from the other way of the street. The ultrasonic sensors are put along one roadside before bend and a LED light after the bend, so if the vehicle comes from one finish of the bend the sensor will distinguish it and LED light lights up on the contrary roadside. Two ultrasonic sensors and two LED lights are introduced on the two sides of the bend. When the vehicle arrives toward one side of the bend, the RED light on the contrary side will consequently illuminate and will stay on, except if and until the sensor on the opposite side of the bend distinguishes it.

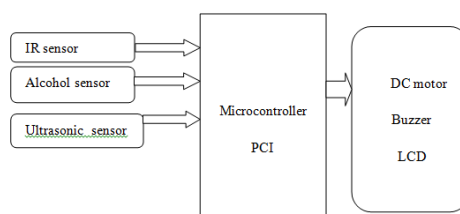


Fig.-1: Architecture Diagram

IV. CONCLUSION AND FUTURE WORK

This paper proposed a novel method for accident prevention by using various sensors like IR sensors, ultrasonic sensors, alcohol sensors and so on. Different methods for accident counteraction were additionally tended to, which incorporate discovery of alcoholic and sluggish driver, controlling vehicle speed, keeping up safe good ways from impediments and so forth When the accident is detected, the data

is imparted to crisis administrations to give convenient guide. However, this proposed system has few difficulties regarding cost, energy, correspondences innovation. Attempt to execution of the proposed system furthermore, testing the wellbeing system with legitimate and right yields. In future, wearable gadget should be proposed to recognize different parameters and avoid the vehicle accidents in effective manner.

V. REFERENCES

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