

An Autonomous Vehicle Control System

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Abstract: In recent days most of the accidents occur due to mistakes of the driver. An intelligent system needs to be developed to overcome these mistakes. This paper proposes a module to eliminate the mistakes done by the driver. In this module, a camera is used to detect the sign and the eye blink sensor used to monitor the driver's eye. If the eye is closed for a long time it will make alarm. The speed sensor detects the speed of the vehicle and showcases it. The ultrasonic sensor identifies the obstructions and controls the vehicles naturally. In addition to that if vehicle caught in the accident, the vibration sensor senses and passes information through GSM in the nearby ambulance. This system stores the data related to the accident through IOT server.

Keywords: Sensors, detection techniques

I. INTRODUCTION

The rise of technology and infrastructure has created our lives easier. The appearance of technology additionally accrued the traffic hazards and road accidents also present itself often that roots immense loss of life and property due to the poor emergency facilities. Vehicle mishaps square measure most conventional if the driving is lacking. These occur if the driving force is lazy or on the off probability that he's alcoholic. Driver languor is perceived as a essential think about the vehicle mishaps. It had been exhibited that driving execution break down with distended laziness with happening accidents establishing over two hundredth of all vehicle mishaps. Trend setting innovation offers some would like to maintain a strategic distance from these up to some degree. A favorable outcome solution to this drawback is given in this paper. An measuring instrument utilized in a automotive alarm application, thus dangerous driving is detected. The rollover detector in the vehicle is used to find the crash. The module is helpful to detect the accident precisely by both vibration sensor and accelerometer. A wireless webcam which can help in providing driver's assistance by capturing the images is the best scope for both improvement and implementation.

II. LITERATURE SURVEY

[1] explained the traffic sign detection system. Color-based detection method from eleven different works. Three shape founded finding strategies square measure given, and Hough remodel. The learning founded revealing, the Viola Jones detector and also the risk of smearing it to traffic symbol finding and to design complex traffic sign detection systems. [2] implemented the microcontroller created observance and vehicle following system. In this, the reed switch mechanism in keeping with the opinion of Hall result for sensing quantity of energy stuffed within the vehicle and amount of energy consumed. [3] proposed the programmed discovery and acknowledgment of content in rush hour gridlock signs. [4] developed a automobile analysis fitted hooked on every automobile. [5] introduced a continuous working framework for the vehicle which enhances vehicle wellbeing and gives different mechanization offices to the vehicle. [6] described the use of Hall result sensors for adding digital recording and analysis capabilities to major station instrumentation like mechanical device relays, circuit breakers. [7] represented the novel image and discriminate-true selection algorithms are used in an exceedingly ancient 3 stage framework involving detection, trailing and recognition. The detector captures instances of angulate polygons within the scene that is 1st befittingly filtered to extract the relevant color info. extra ordinance traffic signs also can be wont to extract info and show it within the dashboard of the automotive to alert the driving force regarding the road sign. [8] concern are high false positive location rates which happen because of the inadequacy of the traffic signs in recordings. To evaluate the condition of traffic framework, a vehicle furnished with a camera and a GPS collector is driven down the streets of intrigue. And all these video chronicles are spared in IOT it may be utilized for future elucidation and examination at the circumstance. [9] discussed about the usage of IOT. [10] detected the traffic signs by studying color data, notably red & blue, confined on the pictures. The drawback of this paper is overcome by sign detection, by this, the sensor can automatically capture the road signs and alert the person to intimate the road signs. [11] a visual driver-assistance system method to detective work and following road signs showing in complicated traffic acts. Traffic signs are then settled within the pictures supported the extracted options. This system is developed by using sensors and this approach with detection and tracking of traffic signs and saved through IOT.

III. PROPOSED SYSTEM

To overcome the driver's mistakes and also avoid the accidents this method is proposed.

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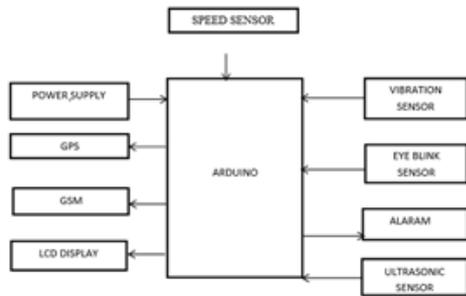


Figure.1

3.1. USB

A video camera feeds or brooks its copy in actual period finished a laptop to network. once "captured" by the pc, the video stream could also be saved, watched or directed on to alternative networks.

3.2. vibration sensor

Vibration sensor senses the vibrations of the vehicle when it met an accident.

3.3 GSM

GSM will permit correspondence anyplace, whenever, and with anybody. The practical engineering of GSM utilizing clever systems administration standards, and its philosophy, which gives the improvement of GSM is the initial move towards a genuine individual correspondence framework that enough institutionalization to guarantee similarity.

3.4 GPS

A GPS enabled vehicle following device is put in on every vehicle to gather and transmit following knowledge via a cellular or satellite network.

3.5. Eye blink sensor

Eye blink sensor estimates the eye flicker utilizing IR sensor. The IR transmitter is utilized to transmit to the eyes. The IR beneficiary is utilized to get the reflected infrared beams of an eye. On the off chance that the eye is shut methods the yield of IR beneficiary is high generally the IR collector yield is low. This yield is given to rationale circuit to show the caution.

IV. EXPERIMENTAL RESULT

Hardware

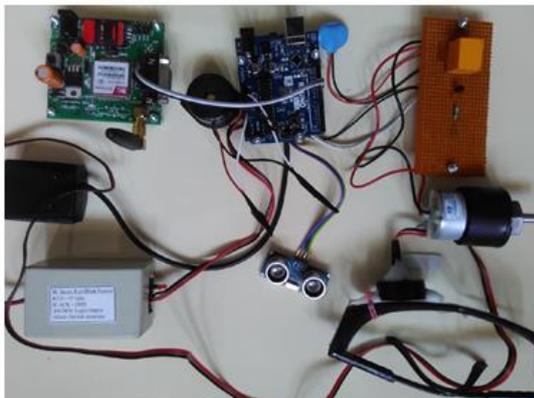


Figure.2. Hardware of an autonomous vehicle control system

In this system Vibration sensor, Eye blink sensor and ultrasonic sensor are used.

Working Principle

Eye blink sensor is a part of controlling accidents due to drowsy, alcoholic, unconscious through eye blink. The infrared rays are transmitted from IR transmitter to eye. A vibration sensor is placed in frnt of the vehicle.when any accident occurs,then vibration sensor sense the accident and give a signal to the microcontroller.in a vehicle,an alarm that siunds when the sensor is ON.vehicle detects an imminent crash could cut crash rates from five to one in ten for crossover the 60 suffering tiredness on long journeys.in this system,a message is sent to the stored number through the GSM module.after the accident.the receiver receives the location with the help of a message.So GPS track the location and after track the location, GSM module sends a message to the receiver. During an emergency situation, the driver can indicate his location to outside world using a simple panic button. By pressing this button, the driver can send an SMS about his current location information to a pre-stored number. Every data from the sensor are stored through IOT server this data helps to insurance and police departments and also for public safety. When an aaccident has occurred it will store all the information that is the state of that vehicle at that particular time in the monitoring system.

V. CONCLUSION

An Autonomous vehicle control system mainly used in the vehicle system. This system provides sufficient attention and reduces the accident level. This system improves the vehicle domestic safety and public safety. It stores the information related to the accident. This system helps to Insurance and Police department for finding the causes of the accident.

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