

**VEHICLE ACCIDENT PREVENTION USING EYE BLINK SENSOR USING
WIRELESS COMMUNICATION.**¹prabhavathi k, ²Thriveni ds, ³mohanraj s, ⁴khadreshkumar VN, ⁵chakrapani br

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Abstract: This alcohol detector provides a unique method to drowsy people. This project has an eye blinking sensor embedded in the vehicles. Buzzer, GSM, LCD receives the signal that sensor senses the eye blink. In this system the outputs of sensors are given to the microcontroller for comparison. If the value reaches to fixed limit then automatically GSM will send the SMS, buzzer will produces sound and LCD will display the message.

Keyword: accident, Alcohol sensor, Eye blinking sensor, Buzzer.

INTRODUCTION

This project involves measure and controls the eye blink & alcohol content using IR sensor & alcohol detector. Infrared rays is transmitted by the IR transmitter. Reflected infrared rays is received by the IR receiver. If the eye is closed means the output of IR receiver is high otherwise the IR receiver output is low. This to know the eye is closing or opening position. Contents of alcohol is detected by the alcohol detector in the breath. This system uses microcontroller, LCD display, alcohol detector, GSM and buzzer. The output of the sensor is directly proportional to the content of alcohol consumed. This output is given to logic circuit to indicate the alarm. Eye blink sensor and alcoholic detector uses controlling accidents due to unconscious. Here one eye blink sensor and alcohol detector is fixed in vehicle where if anybody loses conscious and indicate through alarm, LCD and GSM. The circuit has an alcohol sensor. This sensor measures the content of alcohol from the breath of drunken people. Output of the sensor is directly proportional to the alcohol content. When the alcohol molecules in the air based security system enables the user to view the activity from the remote location. It collects useful data with the help of various device and automotive flow data between other device. The proposed system has, automatic door open for matched face, (image frames). Video call to smart phone at the detection of unmatched face. Based on mobile app usage, voice alert will be mobilized. The system detect the visitor's entrance, capture and pass those group of frames automatically to the owner to identify the visitor and sends the text and that text message covert to voice message. And also produce SMS alert to nearby police station whenever a animal or thief try to hit the door forcefully.

3.LITERATURE SURVEY

To analyze driver's drowsiness several systems have been built. They require simplifying the problem to work under special conditions for example D.Taneral presents automatic drowsy driver monitoring and accident prevention system that is based on monitoring the changes in the eye blink duration. In addition to tracking the face and the eyes to compute drowsiness index Garcia has also presented a non-intrusive approach for drowsiness detection based on computer vision. It is installed in the car and it is able to work under real operation conditions. In this an IR camera is placed in the front of the driver, in the dashboard .In order to detect his face and obtain drowsiness clues from their eyes closure.

In paper [1], According to the study conducted by the Ministry of Transport and Highways, only 9 percent of the accidents observed were attributed to material causes such as faults in the road, weather conditions, vehicular defects etc. And a meager 3.7 percent of the accidents were caused when a cyclist or pedestrian was at fault. Further, 60 percent of the driver-caused road accidents were attributed to over speeding, 16.7 percent of these were due to alcohol or drug consumption and lastly 23.6 percent were caused due to driver fatigue or overcrowding of vehicles. These clearly bring to light the gravity of the situation and the enormous responsibility of vehicle drivers towards causing road accidents.

Due to increase in the number of automobile in recent years, the number of accidents has also increased tremendously. Traditional transport system is no longer efficient .In recent years, the intelligent vehicle system has come into play and has become popular .However the research of safety in vehicle is an important subset of intelligent vehicle system research. Safe driving is the major concern nowadays in societies. Thousands of people are killed or seriously injured due to driver's inattention. Recent studies show driver's drowsiness accounts 20% of serious road accidents. Therefore it is important to develop a system for drowsiness related road accident prevention [2].

It involves measure and controls the eye blink using IR sensor. The output of IR receiver is high when the eye is closed otherwise the IR receiver output is low. This to know the eye is closing or opening position [3].

The ray reflected from the eye is picked up by the receiver which is in a straight line to the transmitter. Depending on the output of receiver, we get to know whether the eye is in an open or closed position. Another extra feature is the alarm

system. There are two alarms. One inside the vehicle to alert the driver and another outside to alert the people in the vicinity of the vehicle.

I. HARDWARE COMPONENTS

- PIC MICROCONTROLLER
- IR SENSOR
- EYE BLINK SENSOR
- MOTOR DRIVE

PIC MICROCONTROLLER

The device is manufactured using Atmel's high-density nonvolatile memory technology and is compatible with the industry-standard 80C51 instruction set and pin out. The on-chip downloadable Flash allows the program memory to be reprogrammed In-System through an SPI serial interface or by a conventional nonvolatile memory programmer.

IR SENSOR

Generally, thermal radiation is emitted by all the objects in the infrared spectrum. This type of radiation is detected by the infrared sensor which is not visible to human eye.



Fig: IR SENSOR

The thermal effects of the incident radiation can be followed through many temperature dependent phenomenon. Bolometer and Microbolometer are based on changes in resistance. Thermocouple and thermopile use the thermoelectric effect. Golay cells follow thermal expansion.

EYE BLINK SENSOR

The variation across the eye will vary as per eye blink .if the eye is closed the output is high otherwise the output is low. Eye blink indication by LED. It is used for vehicle accident prevention and instant output digital signal for directly connected to microcontroller. its working voltage +5V DC. It facility to interface microcontroller device.

Motor driver

There are always two options in front of the designer whether to use a DC motor or a stepper motor. When it comes to speed, weight, size, cost... DC motors are always preferred over stepper motors.

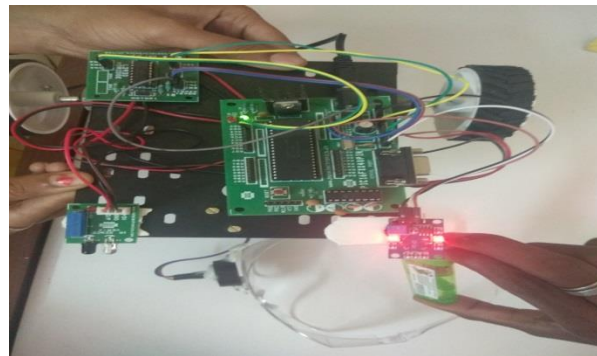
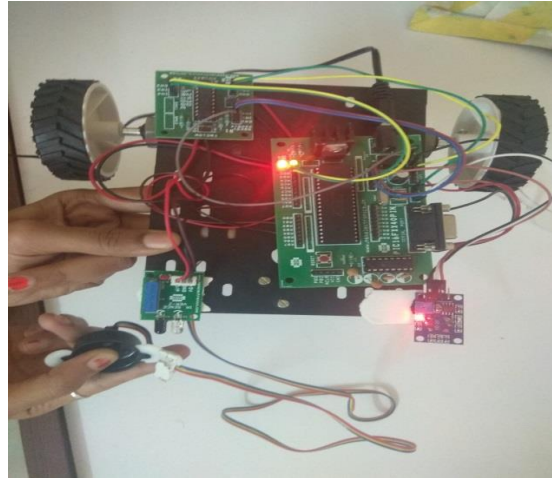
Usually H-bridge is preferred way of interfacing a DC motor. By using transistors and mosfets H-bridge can be introduced. Rather of being cheap, they only increase the size of the design board, which is sometimes not required so using a small 16 pin IC is preferred for this purpose.

A wireless modem behaves like a dial-up modem. The main difference between them is that a dial-up modem sends and receives data through a fixed telephone line while a wireless modem sends and receives data through radio waves.

A GSM modem can be an external device or a PC Card / PCMCIA Card. If a PC Card / PCMCIA Card is designed for use with a laptop computer. It should be inserted into one of the PC Card / PCMCIA Card slots of a laptop computer. Like a GSM mobile phone, a GSM modem requires a SIM card from a wireless carrier in order to operate.

II. EXPERIMENTAL RESULTS

The result in the model of real time database are recorded.this project involves controlling accident due to unconscious through Eye blink. Here one eye blink sensor is fixed in vehicle where if anybody looses conscious and indicate through alarm.Drunk drivers are more liable to make errors and more liable to get into a rage and drive rashly. Drunk drivers may be excellent drivers otherwise, but It is a proven fact that people's personalities change when drunk.



CONCLUSION

Our project Accident Prevention by Eye Blinking Sensor and Alcohol Detector was implemented successfully. This device provides much advanced facilities in now a days life as it can be easily implemented in vehicles. Thus we can reduce alcohol and drowsy related road accidents and hence

These kinds of detectors have a great relevance. It can also be used in schools, colleges, offices and some public places such as hospitals, libraries etc. Through this project we present hardware programming of microcontroller to facilitate as alcohol sensor, eye blinking sensor.

This paper is based on IOT home security system, enables the user to view the activity from the remote location. Android app facilitates when force entrance is detected. We are trying to enhance computed intelligence by attenuating human interaction these system achieves efficiency and human comfort. Our current system consist of video call notification, voice alerts at the front door. In future we try to implement security to entire building by using wide range sensors.

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