ANTI-SLEEP ALARM FOR DRIVERS

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Abstract- This paper expects to make a system to keep the vehicle with no problem at all through basic movement. At the point when we run in obliviousness we can't deal with our own. Assuming we make all vehicles with a programmed security framework that gives the driver an elevated degree of insurance, caution will likewise be given. The gadget has introduced an eye squint sensor. When the driver has turned over the motor, the sensors consequently recognize the squint of the eye. On this gadget, the result of the sensor is furnished for examination with ARDUINO. At the point when the worth arrives at the set level, the bell consequently vibrates, the Drove shines, and the vehicle stops naturally when the eye squint sensor gets a signal from the transmission module.

1. INTRODUCTION

One of the dangerous issues that the community is dealing with is the failure of drivers in automobile incidents. Due to the fact that most drivers lack control, it can sometimes result in deadly accidents that are quite serious. High speeds, driving while asleep, and other distractions like texting, talking on the phone, playing with kids, etc. are all factors in car accidents. Although they are aware of dangerous driving, the general public does not comprehend the level of driving. fatigue. There are 400 fatalities every day or approximately 1374 per day. Around 57 traffic accidents and 17 fatalities from car accidents occur per hour. 54.1 percent of those involved in car accidents are aged 18 to 34 or younger. The Department of Highways, the Department of Border Transport, and the Government of India intend to cut down on traffic fatalities and accidents by half by 2022. One of the largest security problems in the globe today is automobile accidents. In India, there were over 5 lakh traffic accidents in 2015. It is important to keep an eye on the driver's level of tiredness to prevent accidents since a sleepy driver is unable to control the vehicle and is unable to take proper action, which might result in an accident. We concentrated on this problem and developed a program to prevent auto accidents utilizing the eye-twitch sensor. The detection of various collisions and the reduction of such a system are examined in this work.

2. SYSTEM DESIGN IMPLEMENTATION

An element of a system block diagram is: As shown in Figure, the components employed in the proposed operation are the eye blink duration and frequency, power supply, buzzer, ARDUINO (UNO), relay module, and DC. Eyeblink (IR) is related to sleep detection and alerts the driver. The major part is an ATmega328-based microcontroller (MC) called Arduino Uno, which handles all operations related to managing the embedded system circuit. An image transistor and a separation circuit are used to detect changes in scattered light after the eye area has been illuminated with infrared light as part of the blinking module's operation. Below is a description of each element.

A. ARDUINO

Arduino is an open-supply MC board primarily based on ATmega328P MC and evolved by means of Arduino. The board has 14 PINs and six analog pins. All of this may help the microcontroller by attaching the board to a pc for non-stop operation. Strom delivers of this board may be made the use of AC to DC Converter, USB cable, otherwise plug. The figure suggests Arduino.



B. Gear motor

Electric motors that transform mechanical energy into electrical energy are known as DC motors. The DC engine, which could be utilized for current direct distribution systems, was the first commonly used automobile. A DC car's speed can be varied throughout a greater range by translating the winding current's field strength into a changeable voltage. Small DC engines are employed in electrical appliances, toys, and automobiles. The universal motor has the ability to drive a lightweight brush engine, integrated power tools, and accurate action. Rolling steel drivers, lift and hoist propulsion and large DC engines are all popular uses for them. In this project, we've substituted a DC motor for an automobile because of its practicality.

Speed-100RPM Voltage-12Volt Horsepower-5watt's Materials-Alloy steel



C. Eye Blink Sensor

Using a phototransistor and a separator circuit, the blink sensor illuminates the eye vicinity and eyelid with infrared light and detects changes inside the pondered mild. This observation includes measuring and tracking the blink of an eye fixed with the assistance of an IR sensor. The closed eye shows that the output of the IR receiver is high except that the output from the IR receiver is low. Figure four suggests an immediate blink sensor with an IR connected to it.

Brand – Super Debug

Package Dimensions - 12*12*5.2cm



D. Buzzer

The "Piezoelectric Sound Modules" provided here work on the concept of conversion and the usage of natural piezoelectric ceramic oscillation. These buzzers are available in lightweight, transportable sizes ranging from a small diameter of 12 mm to huge electric outlets from piezo. The one proven in Fig. 6 is an easy phrase that makes a continuous beep when enabled. The buzzer could be related to the Eye-Blink Sensor to alert the motive force when he first falls sleepy.

Brand – Generic Input volt -5v Resistance – 900hm



E. LED

LED is a semiconductor mild supply. LED is a separate diode form and has sure electric features of the PN junction diode. The LED, therefore, lets the current go with the flow ahead.



3. WORKING

The system works with the goal of the eye twitch sensor that receives the driver's sleep. This effect is given to the buzzer. The rotation speed is reduced when the driver is sleeping, while on the other hand, the blink sensor receives the sensor and stops the wheel. This program offers a new way to stop drowsy men. The device has an installed blink sensor. Once the driver has started the engine, the sensors automatically detect the blink of an eye and check his or her breath. The process is depicted by the flow diagram shown in Fig. On this device, the sensor output is given to compare with ARDUINO. If the value exceeds the limit when the buzzer automatically generates vibration, the LED glows and the car stops automatically.







Procedural steps for implementation:

- Connect the eye Blink sensor to Arduino pin D0 illustrated in Fig
- Buzzer to Arduino UNO



Methodical Steps for Execution:

Connect the DC motor to the relay and supply the relay connected to the Arduino pin A0. Now unload the code into Arduino using a USB cable Connect the USB cable to pc and open Arduino software, enter the code and collect & run then select the Arduino port and click on add button then your code may be uploaded into Arduino. Now join the batteries and take a look at the output of the eye blink sensor. If a blink of an eye is more than 2 seconds car (motor) could be stopped. The proposed paintings are absolutely illustrated.

Sr.no	Name of components used	Quantity	Cost of the component (Rs.)
1	Gear Motor	4	380
2	Battery	3	210
3	Arduino UNO	1	790
4	Eye Blink Sensor	1	399
5	Buzzer	1	50
6	Connecting Wire	5m	50
7	Wheel	4	195

4. COST ESTIMATION

8	Body sheet	1	150
9	Sun Glass	1	150
10	Switch	1	20
11			210
11	Relay	1	210

Total Cost = 2304

5. ADVANTAGES

- 1. Avoiding accidents and saving the life
- 2. Low Power Consumption.
- 3. Easy to Carry

4. Rechargeable battery

5. Low cost

6. Travel long distance

6. CONCLUSION

People are increasingly exposed to dangers today. Therefore, we need to take action against this as an engineer and have the solution we need. Any automation is designed to protect a person. Such a model is tasked with developing a system for diagnosing and controlling the speed of vehicles to prevent accidents. To some extent, modern technology offers some hope of stopping these. This paper includes monitoring the blink of an eye with the help of an IR sensor. On this device, the output of the sensor is provided for comparison with ARDUINO. When the value reaches the set level, the buzzer automatically vibrates, the LED glows, and the car stops automatically when the eye blink sensor receives a signal from the transmission component.

7. FUTURE SCOPE

In the coming time, by doing more advance coding in this, a message or a call at the time of stopping the vehicle reaches any important person of the driver, such as mother, father, wife, brother, then the family member can talk to the driver. Do what you can and don't let him sleep.



8. REFERENCE

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9. BIOGRAPHIES



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