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4

5 **Abstract**

6

7 *Index terms—*

8 **1 I. INTRODUCTION**

9 Drowsy driving is a major problem. No one knows the exact moment when sleep comes over their body. This
10 makes the driver less able to pay attention to the road. It affects the driver's ability to make good decision. Each
11 near nearly 1,00,000 traffic crashes can be attributed to drowsy driving, including more than 1,500 death and
12 over 70,000 injuries, according to the ? Unsensational Highway Traffic Safety Administration. Another major
13 factor of accidents are due to consumption of alcohol.

14 ? The number of road accidents caused by drunken drivers was 1,643 in 2018. Hence in order to reduce the
15 accidents due to reduced by using the eye blink sensor and alcohol sensor respectively.

16 ? Hence when they are detected the speed of the car slows down and stops which avoids the rash driving .

17 ? Accidents due to driver drowsiness can be prevented using eye blink sensors. The driver is supposed to wear
18 the eye blink sensor frame

19 The eye-blink sensor works by illuminating the eye and eyelid area with infrared light, then monitoring the
20 changes in the reflected light using a phototransistor and differentiator circuit. The exact functionality depends
21 greatly on the positioning and aiming of the emitter and detector with respect to the eye. The sensor is connected
22 with Arduino UNO.

23 Any amount of alcohol in your bloodstream can impact your driving ability. The effects of alcohol abuse
24 vary greatly, putting you at risk for causing an accident or highway injury. Safe driving requires the ability to
25 concentrate, make good judgements and quickly react to situations. However, alcohol affects these skills, putting
26 yourself and others in danger. The consumption of alcohol can be detected by using MQ3 sensor. MQ3 sensor
27 detects the consumption of alcohol from the breath of the person. This helps in avoiding accidents caused by
28 consumption of alcohol.

29 **2 II. LITERATURE SURVEY**

30 In recent years, the drowsiness of the driver is detected by using image processing techniques. If the driver's eyes
31 closed for certain period of time, the driver is said to be drowsy. As a result we get information related to driver's
32 condition and the speed of the car is reduced. Rate of death due to road accidents is increasing day by day.
33 Driver drowsiness is one of the common reasons for most drowsiness and alcohol consumption can be of vehicle
34 accidents. A drowsy driving detection and avoidance system. They utilized an image processing technique to
35 detect the eye blink of the driver. If the driver's eyes remain closed a certain period of time, the driver is said to
36 be drowsy. As a result we get immediate information related to the driver's condition and speed of the vehicle is
37 reduced which reduces the chances of road accidents. In the training phase, the system uses the input image of
38 driver from real time camera and input image undergoes several image processing steps and required feature is
39 extracted from an image.

40 **3 London**

41 Features are trained and stored in knowledge base. In the testing phase same above said procedures are followed.
42 The result of testing and is compared with coefficients stored in knowledge base using image classifier (SVM)
43 and checked whether driver eye is opened or not.

44 IoT based hardware, which is advanced product related to driver safety on the roads using combination of
45 mobile computing and digital image processing and controller. They will detect driver drowsiness and gives

46 warning in form of alarm. And traffic collision information system will continuously monitor the distance from
47 vehicle which is done by the ultrasonic sensor. If the ultrasonic sensor detects the obstacle then it will accordingly
48 warns the driver. If somehow collision occurs it will detect collision using impact sensor and provide emergency
49 help service for driver. The alcohol sends a value of alcohol contained in the drivers breathe in case of consumption
50 and indicates the values in LCD display and sends message to the registered phone number. In case of high level
51 consumption of alcohol, it stops the ignition of the motor of the car. The scanning of driver's eyes continuously
52 using the Eye Scanner, so that whenever the car driver closes his eyes for a longer period (2 seconds or more),
53 the scanner generates or activates the alarm and the alarm starts ringing loudly. This will wake up the driver
54 and make him conscious for driving ahead. The alarm system will be included as an application in the car music
55 system and the driver will be given the choice of switching on/off the functionality. If the driver switches off the
56 safety feature the IRIS/Eye Scanner will stop working. But if the safety feature is switched on by the Driver
57 the IRIS Scanner will continuously scan the driver eyes while the driver is driving the car and check whether the
58 driver is attentive or not. In addition to analyzing the situation of threat due to Drowsy driving, this alert system
59 post alarming the driver will fetch the nearest refreshment halt direct him to destination with exact distance and
60 expected time to reach and will also announce to driver through the medium of navigation system/music system
61 speakers of the car. This way we can create complete solution for safety device to alert drowsy drivers, hence
62 saving many precious human lives. Fatal Road accidents can be easily avoided by understanding the psychological
63 condition of drivers. Majority of road accidents occur during night driving due to the state of drowsiness. This
64 project provides an eye blink monitoring system that alerts the driver during the state of drowsiness. A normal
65 eye blink rate has no effect on the output of the system. Here we use one gate way Raspberry pi, in that gateway
66 webcam is connected, with the help of webcam when the driver is going to close his eyes more than 5secs it will
67 click the picture of driver and send to web application.

68 In web application one admin will be there he is monitoring and send the message that will be converted into
69 speech is initiated to wake the driver. To detect driver drowsiness and gives warning in form of alarm and traffic
70 collision information system will continuously monitor the distance from vehicle which is done by the ultrasonic
71 sensor and provides warning to the driver and also in case of any collision occurs, it provides emergency help
72 service for driver. For Health Monitoring of driver, making wearable device which will give the heart beat and
73 body temperature of the driver, so before boarding to vehicle administrator should know the status of subject.
74 Genuine following of driver will likewise track with versatile GPS. It has 14 digital input/output pins of which 6
75 can be used as PWM outputs, 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an
76 ICSP header, and a reset button. It is connected to a computer with a USB cable or power it with a AC-to-DC
77 adapter or battery to get started.

78 4 III. DESIGN REQUIREMENTS

79 5 Mq3 Sensor

80 MQ-3 alcohol sensor can detect the presence of mg/l. Used for detecting alcohol concentration on your breathe.

81 6 Eyeblink Sensor

82 The eye-blink sensor works by illuminating the eye and eyelid area with infrared light, then monitoring the Fig.
83 ???: Eyeblink Sensor

84 7 DC Motor

85 A DC motor is any of a class of rotary electrical machines that converts direct current electrical energy into
86 mechanical energy. The most common types rely on the forces produced by magnetic fields. Nearly all types
87 of DC motors have some internal mechanism, either electromechanical or electronic, to periodically change the
88 direction of current flow in part of the motor. DC motors were the first form of motor widely used, as they could
89 be powered from existing direct-current lighting power distribution systems.

90 A DC motor's speed can be controlled over a wide range, using either a variable supply voltage or by changing
91 the strength of current in its field windings. Small DC motors are used in tools, toys, and appliances. The
92 universal motor can operate on direct current but is a lightweight brushed

93 8 L298H Bridge

94 An H bridge is an electronic circuit that switches the polarity of a voltage applied to a load. These circuits are
95 often used in robotics and other applications to allow DC motors to run forwards or backwards.

96 Most DC-to-AC converters (power inverters), most AC/AC converters, the DC-to-DC push-pull converter,
97 most motor controllers, and many other kinds of power electronics use H bridges. In particular, a bipolar stepper
98 motor is almost invariably driven by a motor controller containing two H bridges.

99 9 V. PROPOSED SYSTEM

100 In our proposed system, drowsiness of the driver is detected by using eye blink sensor. The eye blink rate is
101 continuously being monitored by using Arduino. If the eye is closed for more than 5 seconds then the driver is
102 found to be drowsy.

103 Hence the buzzer starts buzzing and also the speed of the car slows down(here indicated by a dc motor). Also,
104 alcohol is detected by using Mq3 sensor. The sensor is interfaced with Arduino. LED glows when alcohol is
105 detected and the speed of DC motor varies according to the content of the alcohol present in the driver's breathe.

106 10 IV. CONCLUSION AND FUTURE SCOPE

107 The driver drowsiness and alcohol detection system is used to detect the drowsiness of the driver and also detects
108 the alcohol consumption of driver.If there is drowsiness or consumption then the motor of the car gets slowed
109 down and the buzzer sounds until the eyes gets opened.The values of alcohol and the blink rate will be displayed
110 in the serial monitor of the Arduino IDE. This proposed system helps in finding drowsiness and alcohol detection
using Arduino.



Figure 1:

111



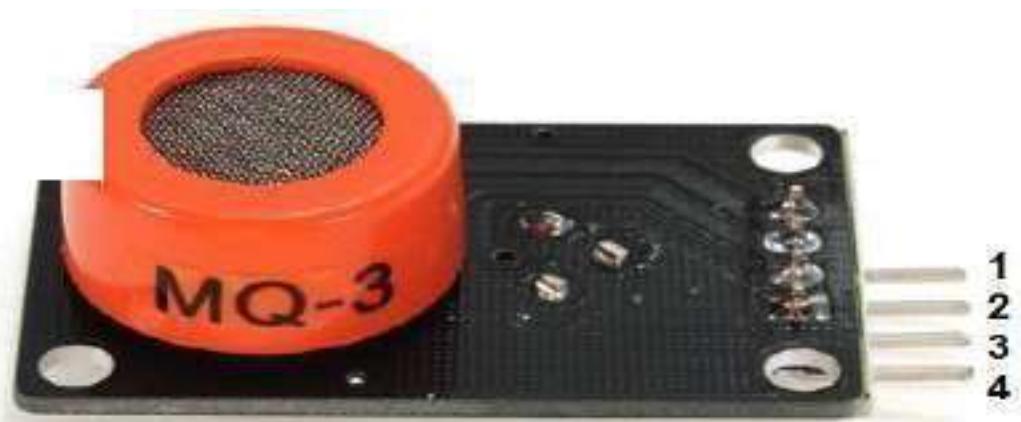
1

Figure 2: 3. 1



2

Figure 3: Fig. 2 :



1 = +5V
2 = DOUT
3 = AOUT
4 = GND

Figure 4:



4

Figure 5: Fig. 4 :



56

Figure 6: Fig. 5 :Fig. 6 :



Figure 7: Fig. 7 :

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