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Alcohol and eye blink sensor – Car driver alert system Driver fatigue and drowsiness using Internet of Things (IOT)

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ABSTRACT

The main idea behind this project is to develop a non-intrusive system which can detect fatigue of the driver and issue a timely warning. Since a large number of road accidents occur due to drunk and drive and the driver drowsiness. Hence this system will be helpful in preventing many accidents, and consequently save money and reduce personal suffering. This system will monitor the driver's eyes using camera and by developing an algorithm we can detect symptoms of driver fatigue early enough to avoid accident. This system will also detect the person who consume alcohol by using alcohol sensor, and if it is so then the motor will not run .So this project will be helpful in detecting driver fatigue in advance and will gave warning output inform of sound and seat belt vibration whose frequency will vary between 100 to 300 Hz's. The primary aim of our project is to prevent major car accidents which creates a major impact there by to save lives of people. This alcohol sensor is suitable for detecting alcohol concentration on your breath, just like your common breathalyzer. Eyeball Sensor which is a chip of a hands free pointing device and Telemedicine System which is remote diagnosis and data transmitting system.

Keywords—Alcohol sensor,eye blink sensor ,vibrate sensor,

I. Introduction

The primary objective of this project is to prevent accidents before hand with the help of the upgrading technology. On considering the current scenario, we face many problems that arise due to vehicles and its effects are wide in range. Thus all such problems are overcome by using this methodology. This system will monitor the driver's eyes and we can detect symptoms of driver fatigue early enough to avoid accident. If the driver enters the car by consuming alcohol, the breathe of the driver is analysed by the alcohol sensor and when the driver tends to start the car motor, the motor will not run if the driver is detected by consuming alcohol. Another way of accidents occur is due to the drowsy feeling that is caused to the driver. In certain case after many hours of driving the may get a drowsy feeling. In such suitation, due to lack of sleep the driver will not be able to concentrate in driving and falls asleep where it leads to major accidents and loss of many lives. and This system will also detect the person who consume alcohol by using alcohol sensor, and if it is so then the motor will not run . So this project will be helpful in detecting driver fatigue in advance and will gave warning output inform of sound and seat belt vibration whose frequency will vary between 100 to 300 Hz's. output inform of sound and seat belt vibration whose *Existing System*

MODULE DESCRIPTION

MICROCONTROLLER

PIC 16F877 is one of the most advanced microcontroller from Microchip. This controller is widely used for experimental and modern applications because of its low price, wide range of applications, high quality, and ease of availability. It is ideal for applications such as machine control applications, measurement devices, study purpose, and so on. The PIC 16F877 features all the components which modern microcontrollers normally have. The figure of a PIC16F877 chip is shown below.

IOT SIM800

SIM800 is a complete Quad-band GSM/GPRS solution in a SMT type which can be embedded in the customer applications. SIM800 support Quadband 850/900/1800/1900MHz, it can transmit Voice, SMS and data information with low power consumption. With tiny size of 24*24*3mm, it can fit into slim and compact demands of customer design. Featuring Bluetooth and Embedded AT, it allows total cost savings and fast time-to-market for customer applications IOT SIM.

EYE BLINK SENSOR

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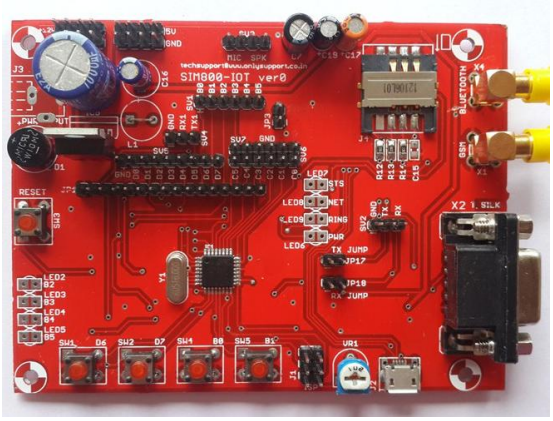
The eye is illuminated by an IR led, which is powered by the +5v power supply and the reflected light is recorded by an IR photo diode. This eye blink sensor is IR based; the variation across the eye will vary as per eye blink. The exact functionality depends greatly on the positioning and aiming of the emitter and detector with respect to the eye. If the eye is closed means the output is high otherwise output is low. This to know the eye is closing or opening position. This output is give to logic circuit to indicate the alarm. This can be used for project involves controlling accident due to unconscious through eye blinks.

IOT SIM 800 KIT



The embedded ECG sensor is designed to measure continuous ECG signals from the driver's palms through the conductive fabric electrodes attached to the steering wheel. Fig. 2 shows a block diagram of the embedded ECG sensor with a wireless sensor node for wireless communication. For non-intrusive measurement of the driver's heart beat signals, each half of the steering wheel is wrapped with electrically conductive fabric used as electrodes. The conductive textile is flexible and soft and covers the steering wheel tightly without causing discomfort
to the drivers.

COMPOSITION OF HARDWARE DEVCES

REFERENCES

1. National Highway Traffic Safety Administration, "Traffic safety facts: Drowsy driving," U.S. Dept. Transp., Washington, DC, USA, Rep. DOT HS 811 449, 2011.having fallen asleep," Accident Anal. Prevention, vol. 6, pp. 769–775, 1995.
2. I. Pack, A. M. Pack, E. Rodgman, A. Cucchiara, and D. F. Dinges, "Characteristics of crashes attributed to the driver
3. P. H. Langlois, M. H. Smolensky, B. P. Hsi, and F. W. Weir, "Temporal patterns of reported single vehicle car and truck accidents in Texas,U.S.A. during 1980–1983," Chronobiol. Int., vol. 2, no. 2, pp. 131–140, 1985.
4. M. M. Mitler and J. C. Miller, "Methods of testing for sleepiness," J. Behavioral Med., vol. 21, no. 4, pp. 171–183, 1996.
5. J.A.Horneand L.A.Reyner,"Sleeprelatedvehicleaccidents,"Brit.Med. J., vol. 6979, pp. 565–567, 199.
6. Royal, D.: 'Volume I – findings report; national survey on distracted and driving attitudes and behaviors,2002'.TechnicaLReports DOT HS 809 566, The Gallup Organization, Washington, DC, March 2003.
7. Rosekind, M.R.: 'Underestimating the societal costs of impaired alertness: safety, health and productivity risks', Sleep Med., 2005, 6, [pp. S21–S25
8. Ueno, H., Kaneda, M., Tsukina, M.: 'Development of drowsiness detection system'. Proc. Vehicle Navigation and Information Systems Conf., 1994, pp. 15–20
9. Vicente, J., Laguna, P., Bartra, A., Bailon, R.: 'Detection of driver's drowsiness by means of HRV analysis', Comput. Cardiol., 2011, 38, pp. 89–92
10. De Rosario, H., Solaz, J.S., Rodríguez, N., Bergasa, L.M.: 'Controlled inducement and measurement of drowsiness in a driving simulator', IET Intell. Transp. Syst., 2010, 4, pp. 288.