IJRASET

International Journal For Research in
Applied Science and Engineering Technology

INTERNATIONAL JOURNAL
FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

www.ijraset.com

Call: ○08813907089 | E-mail ID: ijraset@gmail.com

Survey on Drowsy Detection/ Smart Vehicle and Security Implementation at Low Cost

Shubham Sahu[1], Sachin Harne[2]

[1]*M.Tech. Scholar,* [2]*Assistant Professor, Department of Computer Science & Engineering, RSR RCET, Bhilai, Chhattisgarh, India*

Abstract: We all know that drowsiness and drunken driving have main causes for road accidents. We found already many research's at drowsiness detection system. But that system has costly and two or three tasks are completed. As like 1. Drowsiness and gas detection, 2.
Drowsiness and abstackle detection, 3. Drowsiness alcohol and fire detection system and also these systems have many types or technics to detect drowsiness of driver and these technics are, camera mounting, EEG, ECG, heart bit sensing etc. all technics are very costly for middle class families.
In this paper we want to make multitasking drowsy detection or smart vehicle system.
This system have more features than other past invented drowsiness detection system and also this system required minimum cost its cheapest drowsiness detection project also multitasking smart vehicle system. We can make this with help of Arduino ATMEGA328P microcontroller IC programming.
We can use this system for personal cars, buses, truck's, goods career, auto's etc. in these system 8 types of different-different categories sensors to make multitasking or more intelligent vehicles.
This project will have all types of safety or security sensors for our vehicles. In this survey report we will describe past published papers, also comparison with our project. We can briefly explain how our project is better than other projects in terms of low cost and maximum task. And also we describe ATMEGA 328P microcontroller arduino programming in easy terms.
We will make our project code at arduino 1.8.5 PC supported software. And also we will programme compiling   and uploading in this arduino software. In our project we will not have to require any other software for compiling and programme burn on microcontroller IC.
Keywords: Multitasking, low cost, smart vehicle, all types of safety, maximum task, Arduino programming, compiling, uploading, Comparison .

I.   INTRODUCTION

In many types of vehicle accidents cases drivers who are drowsy make no effort to apply brake or prevent an accidents, so we will make multitasking drowsy detection or smart vehicle system with the help of 8 different- different types of sensor we have already invented many types of drowsiness detection system but these system are very costly and have few tasks minimum security features system.

So everyone cannot effort this system. drowsiness and drunken reduces the capability of any decision making for driver and also in our system have multi-tasking security and safety features as like, sense for nearby vehicles, gas or fire, vehicle engine over heat, GSM, GPS security, or information system, alcohol and automatic engine on-off system, drowsy detection with eye blink sensor, shock sensor for any damages or accidental information of vehicles. These all sensors work together and make multitasking cost effective drowsiness detection or smart vehicles system.

Basis on the survey report of last few years have already research in drowsiness detection and smart vehicle system. But now we will attach to both project and also make at low budget system, so that everyone can afford this system and get safety and precaution from any type of accidents.

This system will easy for making and also easy terms of coding, and user friendly system. We can also change their microcontroller Atmega 328P IC coding, according to our requirements. Do not any difficult task of coding included in our system programme. In the below report (related work) we are also explain which type of method we can use in our programme. We will also use in this project low cost and better performance modules and sensors.

We can also use I2C module for display connection synchronize. In this paper we are introduce how our project is low budget and multitasking system. This project is help us to prevention of all type of commercial and personal vehicles accidents and also provide theft security system.

II.   RELATED WORK

We have study many types of papers based on drowsiness detection and safety features on vehicles. And we are making comparison chart between last few year's paper and own research project –

| year of paper publish | sensors | | | | | | | | | | | | cost |
	eye blink	MQ-2	MQ-3	HC-SR04	shock sensor	heat sensor	GSM	GPS	EEG ECG	pulse	raspberry pi & camera	task	high/low
2013[1]	1											1	low
2014 [2]		1									1	2	high
2016 [3]	1	1					1			1		4	low
2016 [4]	1			1		1	1	1			1	6	high
2017[6]		1					1				1	3	high
2018[8]	1		1				1	1			1	5	high
Our Project	1	1	1	2	2	1	1	1				10	low

At above parameters based on last few years' research papers, in these papers we can sense drowsiness detection and ARM programme in 16 bit or 32 bit in-built memory flash. So this system had done only one task (1). And second paper also detect drowsiness by camera mounting technic with Raspberry pi programming and alcohol detection system , this system did only two task (2). And third another paper has completed four tasks (3). Fourth paper have six task to protect our vehicle from drowsiness, accidents, engine overheat, and camera mounting with raspberry pi , this technic is costly to compare with our system (4). Fifth research paper did only 3 task. And this project cost will high. Because author has used biometry sensor, raspberry pi and camera for drowsiness detection and vehicle safety features (6). And last paper did five tasks. In this paper author use Arduino mega board, ESP 8266 Wi-Fi module, GPS, GSM, EYE blink, mq-3, and heart bit sensors for drowsiness and security purposes. But compare with in our project will done ten tasks and also this project cost will minimum amount as compare to other past papers.

So that with the help of comparison chart, we can easily know our project will have multi-tasking function or cost effective drowsiness detection system. We will make this project with 8 types of sensors and 16×2 LCD display or Buzzer output. We can use ATMEGA328P microcontroller programming and Arduino 1.8.5 software for compiling and uploading code.

III.   EXPECTED OUTCOME

In this project we found that our project is multi-tasking security features and cost effective project. In this project we were using single-single piece shock and ultrasonic (HC-SR04) sensor for accident or other vehicle distance purposes but this system install only back side, so that we can't recognized or install first side, than we decided we will use two pieces to both sensor, shock sensor & ultrasonic sensor. Than after our project will complete with 10 sensors. In this project we will use MQ-2 sensor for gas & fire detection, MQ-3 sensor for alcohol detection, eye blink (IR) sensor for drowsiness, LM-35 for temperature measurement at vehicle engine, ultrasonic (HC-SR04) sensor for both side of nearby vehicles information. Ultrasonic sensor measure any other vehicles distance and last we use to both side shock sensor, when any accident occurred shock sensors will inform to owner with help of GPS and GSM module. When shock sensor will give output GPS module and GPS module send longitude & latitude of vehicle to microcontroller IC. Microcontroller sends GPS location to registered mobile no. with help of GSM module. We will require SIM card for GSM activation or location sending via SMS.

In our project we will use some technics or methods for coding or compiling programme. As like,

1) if(condition - - - -)

```
    {
            - - - - - - - - - - -
            - - - - - - - - - - -
            - - - - - - - - - - -
    }
  else
      {
            - - - - - - - - - - -
```

```
              - - - - - - - - - - -
                - - - - - - - - - - -
        }
```

2) We will use function foe separation of each sensor.

Ex-

```
        void sensor name()
        {
              - - - - - - - - - - -
              - - - - - - - - - - -
              - - - - - - - - - - -
        }
```

3) *We will use Int or float variables:* Also we can use some extra or easy technic for coding methods as like I2 C programme for minimum digital pin required to attaché many types of device address include only two A4 and A5 pins at Atmega 328p microcontroller.

IV. CONCLUSION

The system which we will design is for the protection of commercial or personal vehicles from theft and other hostile condition and it is very important due to insecure environment around us. So in this we have automatic locking of vehicles with the help of alcohol detection and other essential multitasking system for more secure driving as like drowsiness detection, accident awareness.

With an efficient smart vehicle driving system the chances of accidents will become less an importantly the human nature is unpredictable so we provide a system which will work in all aspects. The advantages of the proposed system for the prevention of accidental injuries, safety of driver and roadways etc. but in over project we will have cost effective phenomena so that it is cheap as well as easily affordable to everyone at minimum cost. And also we will make easy terms of coding method for everyone realize that how to work and simulation each sensors with help of microcontroller Atmega 328 IC.

REFERENCES

[1] International Journal of Science, Engineering and Technology Research (IJSETR) Volume 2, Issue 9, September 2013. Implementation of the Driver Drowsiness Detection System. By - K.SRIJAYATHI, M.VEDACHARY .

[2] International Journal of Engineering Trends and Technology (IJETT) – Volume 10 Number 9 - Apr 2014 ISSN: 2231-5381 Http://www.ijettjournal.org Page 461. A Real Time Embedded System Application for Driver Drowsiness and Alcoholic Intoxication Detection. By Dwipjoy Sarkar#1, Atanu Chowdhury*2

[3] International Journal Of Engineering And Computer Science ISSN:2319-7242 Volume 5 Issue 09 September 2016 Page No.18106-18111. Arduino based real time driver drowsiness detection and mobile alert system using Bluetooth. By Lestin Jills Joseph1, Dr. Lokesha .M2.

[4] International Journal of Innovative Research in Computer and Communication Engineering (An ISO 3297: 2007 Certified Organization) Vol. 4, Issue 8, August 2016 Copyright to IJIRCCE DOI: 10.15680/IJIRCCE.2016. 0408003 14617. Design and Implementation of Driver Drowsiness and Alcohol Intoxication Detection Using Raspberry PI By Pandurang N. Kathar1, Prof. D.L.Bhuyar2.

[5] 2016 Online International Conference on Green Engineering and Technologies (IC-GET) A SMART VEHICLE FOR ACCIDENT PREVENTION USING WIRELESS BLACKBOX AND EYEBLINK SENSING TECHNOLOGY ALONG WITH SEAT BELT CONTROLLED IGNITION SYSTEM

[6] Advances in Computational Sciences and Technology ISSN 0973-6107 Volume 10, Number 7 (2017) pp. 1989-2004 © Research India Publications http://www.ripublication.com Development and implementation using Arduino and Raspberry Pi based Ignition control system.

[7] 2017 11th International Conference on Intelligent Systems and Control (ISCO) AN AUTOMATIC DRIVER DROWSINESS ALERT SYSTEM BY USING GSM.

[8] International Journal of Advance Engineering and Research Development Volume 5, Issue 03, March -2018 @IJAERD-2018, All rights Reserved 1616 Scientific Journal of Impact Factor (SJIF): 5.71 e-ISSN (O): 2348-4470 p-ISSN (P): 2348-6406 . IMPLEMENTATION OF DRIVER DROWSINESS ALERT AND AUTOMATIC VEHICLE CONTROL SYSTEM USING ARDUINO . By Chinta Sandeep¹ Chaganti Mounica² N. Mounika Reddy³ M. Pradhyumna4

[9] www.tutorialspoint.com by tutorials point.

[10] www.kciti.edu>cprogramming_tutorial

[11] Proceedings of the 2nd International conference on Electronics, Communication and Aerospace Technology (ICECA 2018) IEEE Conference Record # 42487; IEEE Explore ISBN:978-1-5386-0965-1. "Drowsy Driver Alerting System".

[12] . 2017 11TH International Conference on Intelligent Systems and Control (ISCO) "AN AUTOMATIC DRIVER DROWSINESS ALERT SYSTEM BY USING GSM ".

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)