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Image Processing based Driver Drowsiness Detection, Alcohol Detection, & Accident Prevention

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ABSTRACT

Drowsy driving is the form of impaired driving that continuously affects a person's ability to drive safely. Continuous restless driving for longer time may result in drowsiness and cause accidents. In this project, a propose system is build which identifies his/her state while driving in order to improve safety by preventing accidents. Based on gray scale image processing, the position of the driver's face and his/her eye movement is analyzed. The driver's state identification also includes the detection of alcohol consumption with the help of alcohol sensor. Ultrasonic sensor is maintaining the distance between two vehicle and avoid accident. The propose system to detect the driver drowsiness using image processing and camera, alcohol detection using alcohol detection sensor, and prevent accident using ultrasonic sensor, and all sensors connected to the Node MCU microcontroller.

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I. INTRODUCTION

1.1 PROJECT IDEA

The number of deadly traffic accidents are increasing every year. One of the main cause for these ever increasing accidents is driver drowsiness and alcohol consumption. This project focuses on continuous detection of the driver's current state using image processing. A driver is given an alert as soon as symptoms of drowsiness are detected. This can be done by using an alarm or by fixing a vibrator in driver's seat. Alcohol consumed can be detected using a sensor.



Fig 1.1. Block Diagram

1.2 MOTIVATION OF THE PROJECT

The motivation of this project is image processing based to detect the driver drowsiness, alcohol detection and prevent accident.

II. LITERATURE SURVEY

Title: "Driving Fitness Detection- A Holistic Approach For Prevention of Drowsy and Drunk Driving using Computer Vision Techniques"

Name of Authors: Ipshita Chatterjee, Isha, Apoorva Sharma Year of Publication: 2018

Paper Review: This paper presents a holistic, non intrusive approach for driving fitness detection by checking drowsiness of the driver and loss of vehicle control due to potential influence of alcohol, using computer vision techniques of facial landmark detection and motion detection.

Title: "Drunk Driving and Drowsiness Detection" Name of Authors: Vivek R. Nair, Nadir N. Charniya

Year of Publication: 2017

Paper Review: This paper aims towards the detection of drivers drowsiness using the visual features approach along

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with drunk detection using alcohol sensor. Driver drowsiness is based on real-time detection of the drivers head, face and mouth, where-in HAAR-Cascade classifier for face and eye detection and template matching in the mouth region for yawning detection.

Title: "Driver Assistant for the Detection of Drowsiness and Alcohol Effect"

Name of Authors: Prajnyajit Mohanty Pallem Siddharth Kunja Bihari Swain Rakesh Kumar Patnaik

Year of Publication: 2017

Paper Review: This project work uses a forehead single dry electrode which can collect Electroencephalogram (EEG) based brain signals of different frequency and amplitude. Then using data acquisition system and LABVIEW software the collected signals are analyzed. Depending on mental stages different EEG signals are generated.

Title:"Real-Time Automated Multiplexed Sensor System for Driver Drowsiness Detection"

Name of Authors: Maneesha V Ramesh, Aswathy K. Nair, Abishek Thekkeyil Kun- nath

Year of Publication: 2011

Paper Review: This research work contributed to the design and development of system architecture for real-time monitoring and detection of driver drowsiness. This work also integrated effective real-time sensor fusion techniques for monitoring the heart rate collected from the driver. One of the novel ideas in this research work is the development of multiple sensors embedded in the steering wheel capable to measure the heart rate and dynamically alert the driver or the rescue team about the driver drowsiness, to avert accidents.

III. PROBLEM STATEMENT

Driver's drowsiness is the main reason for vehicular accidents. So we are pro- pose a system that can detect the driver drowsiness, alcohol detection and accident prevention.

IV. PROPOSED SYSTEM

In this project, system propose a Image Processing based Driver Drowsiness Detection, Accident Prevention, & Drunk Driver Detection System. This system using Ultrasonic sensor, Camera, Alcohol Sensor, Node MCU Microcontroller and Buzzer. Our project focus on to providing them more convenience with driver. It provides real-time vehicle driver status so that they may not get accident. Design accident prevention system, which will detect the accident of the vehicle using ultrasonic sensor. Design vehicle drunk driver detection system, which will detect the drunk driver using alcohol sensor.



Figure: System Architecture

V. RESULTS SCREEN SHOTS







VI. CONCLUSION

Designing a system that can detect the drowsiness driver, prevent the accident, detect drunk driver. This project is made with pre-planning, that it provides flexibility in operation. This innovation has made more desirable and economical. This project "Image Processing based Driver Drowsiness Detection, Accident Detection, Prevention Accident & Drunk Driver Detection System" is designed with the hope that it is very much economical and helpful for driver and as wellas conductors and passenger during journey.

REFERENCES

[1] Ipshita Chatterjee, Isha, Apoorva Sharma, "Driving Fitness Detection- A Holis- tic Approach For Prevention of Drowsy and Drunk Driving using Computer Vision Techniques", IEEE, 2018.

[2] Vivek R. Nair, Nadir N. Charniya, "Drunk Driving and Drowsiness Detec- tion", IEEE, 2017.

[3] Prajnyajit Mohanty Pallem Siddharth Kunja Bihari Swain Rakesh Kumar Pat- naik, "Driver Assistant for the Detection of Drowsiness and Alcohol Effect", IEEE, 2017.

[4] Maneesha V. Ramesh, Aswathy K. Nair, Abishek Thekkeyil Kunnath, "Real- Time Automated Multiplexed Sensor System for Driver Drowsiness Detec- tion", IEEE, 2011.