

FACIAL LANDMARKS & DROWSINESS DETECTION SYSTEM USING OPEN COMPUTER VISION

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ABSTRACT: On road, accidents are playing a terrific role in many lives. The accidents are due to drowsiness, drunken condition, not wearing a seat belt, red light jumping, etc. Out of this drowsiness is contributing more than 40% of reported accidents and remaining are due to drunken state of the driver, or not wearing a seat belt. The main features of our project are

1. Drowsiness detection

2. Alcohol detection

3. Seat belt indicator

By using this system we can prevent the accidents and prevent safety on roads.

KEY WORDS: Driver, Drowsiness, Alcohol detection, Seat belt indicator, Buzzer, Vibrator motor, Ignition control.

1. INTRODUCTION:

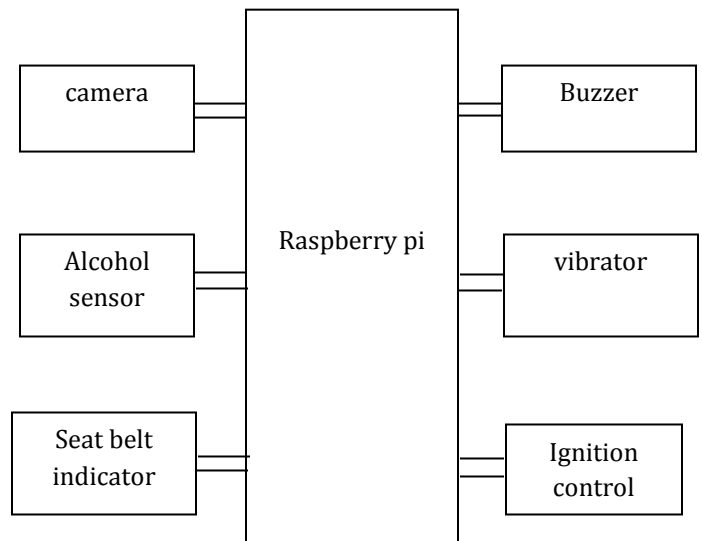
Accident is an unexpected event, typically sudden in nature and associated with injury, loss or harm. Drowsy driving has become a leading cause of car accidents, largely because few people are getting the recommended amount of sleep. Missing even a few hours of sleep per night could significantly increase the chances a drowsy driving collision will occur.

2. MAIN CONCEPT:

The main theme of our project is used to detect the driver's drowsiness, alcohol detection and seat belt indication using Raspberry Pi zero.

3. PROPOSED SYSTEM:

3.1. BLOCK DIAGRAM:



3.2. RASPBERRY PI ZERO:

Raspberry pi zero is the pi, but at a largely reduced size of only 65mm long by 30mm wide and at a very economical price with the addition of wireless LAN and Bluetooth. The pi zero has been designed to be as flexible and compact as possible with mini connectors and an unpopulated 40-pin GPIO. The heart of raspberry pi zero is a 1GHz BCM2835 single core processor, with 512MB RAM. Each case has a standard base featuring a cut-out to allow access to the GPIO, and a choice of three lids: a standard lid, a GPIO lid and a camera lid.

3.3. RASPBERRY PI CAMERA:

The use of raspberry pi camera is used to detect the eyes of the driver. Raspberry pi camera is inserted into raspberry pi by using ribbon cable. The cable slots into connectors situated between Ethernet and HDMI ports.



Driver eyes are in the open state (EAR=0.305)



Eyes are fully closed (EAR=0.094)

6. CONCLUSION:

Our project successfully concludes that the drowsiness detection and alert system is a step forward to avoid road accidents in future. So by using this system death and accidents rates can be reduced due to drowsiness detection or alcohol consumption or a seat belt indication.

7. REFERENCES:

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