CAR SECURITY WITH DRIVER SAFETY

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Abstract— A major problem today for car owners is that they're in constant fear of getting their vehicles stolen from a typical parking zone or from outside their home. Safe driving could even be a significant concern of societies everywhere the world . Thousands of individuals are killed or seriously injured due to drivers falling asleep at the wheels annually. Hence driver drowsiness is that the main issue behind accidents. during this paper, a low-cost extendable framework for smart car security system is proposed, which consists of blink sensor, a GPS module, fire sensor and alcohol sensor. The system described during this paper automatically take photos of driver and compares his or her face with database to determine whether he's an authenticated driver or not. the other modules transmit necessary information to users and help to stay eyes on cars all the time, even when the car is lost. this system prototype is formed on AtMega 32, controls all the processes. The GPS module within the car detects things of the car. So by this system the identification of the thief and thus the car safety are simply smarter and cheaper than traditional one.

**Index Terms—AtMega 32, relay module, eye blink sensor, Global Positioning System (GPS)**

I. INTRODUCTION

In this world, everyone and every industry likes to keep in pace with the advancement in the technology. Automobile industry is also not behind in this aspect. Nowadays almost everyone has a car. As purchasing a car is a big investment, people are really concerned about the advanced technologies in automobile industry. Therefore, automobile companies have witnessed a major boost in their technological aspects by introducing automation in the vehicles to provide user friendly and advance features to their customers.

Major studies have suggested that around 20% of all road accidents are fatigue related. Drowsy Driving can be extremely dangerous; a lot of road accidents are related to the driver falling asleep while driving and subsequently losing control of the vehicle. However, initial signs of fatigue and drowsiness can be detected before a critical situation arises. Driver drowsiness detection is a car safety

FUNCTIONAL BLOCK DIAGRAM
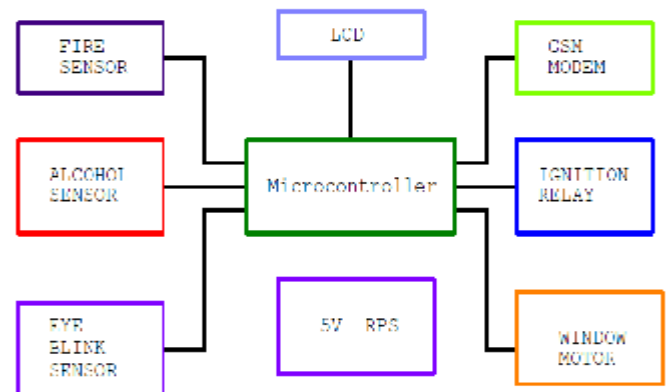
Technology that helps to prevent accidents caused by drivers getting drowsy. In this project, we aim to design and develop driver drowsiness detection and use image processing for detecting whether the driver is feeling fatigued and sleepy, using image processing we detect the eyes of the person and detect for how much time the eyes are closed of the driver if the eyes are closed for greater than 20 sec the speaker included in the system will sound an alert thus alerting the driver and waking him up, preventing an accident.

As far as vehicle security is concerned many options are available depending upon the technology being adopted. Many auto theft alarms and devices are installed in cars but they didn't prove to be a solution to the customer's problems. GSM based car/vehicle security system is one of the possible technology solutions and it is designed by several groups to identify the car/vehicle location upon getting it stolen. However, the issues in locking/unlocking and switching ON and OFF of the car by unknown face then system can be performed just by sending a text message from user (specific) mobile number to the

GSM modem installed in the car. Sending SMS with a specific template can perform different operations of the car.

With the development and applications of many atmega 32 techniques, car security system design and analysis are constantly improving. Many new techniques, such as biometric recognition technique, image processing technique, communication technique and so on, have been integrated into car security systems. At the same time, the amount of accidents of cars still remains high, especially, lost. So, one practicable car security system should be efficient, robust and reliable. Traditional car security systems rely on many sensors and cost a lot. When

one car is really lost, no more feedback could be valid to help people to find it back. We put forward the face detection technique to be applied in car security systems because this kind of technique is effective and fast. The GSM module can send the information out by SMS (Short Message Service) message, including real time position of the lost car and even the images of the driver. All process are controlled by the atmega 32 control central module, include obtaining images, eye blink sensor, alcohol sensor, fire sensor, sending SMS messages.

II. LITERATURE SURVEY

Paper 1: **A Dedicated System for Monitoring of Driver's Fatigue K.Subhashini Spurjeon, Yogesh Bahindwar [1]**

In this paper author describes a real time system for analyzing video sequences of a driver and determining the level of attention. For this purpose, author uses the computation of percent of eyelid closure. The eye closure acts as an indicator to detect drowsiness. Driver's fatigue and drowsiness are the major causes of traffic accidents on road. It is very necessary to monitor the driver's vigilance level and to issuing an alert when he/she is not paying enough attention to the road is a promising way to reduce the accidents caused by driver factors.

Paper 2: **Drowsiness Warning System Using Artificial Intelligence, Nidhi Sharma, V. K. Banga [2]**

In this paper author discuss about the various artificial intelligence methods for detecting the drowsiness of system. Driver's drowsiness is an important factor in motoring of vehicle from accidents. The driving performance deteriorates with increased drowsiness with resulting crashes constituting morel vehicle accidents.

Paper 3: A Yawning Measurement Method to Detect Driver Drowsiness, Behnoosh Hariri, et.al: [3]

Describe that the drowsy is the major issue behind the road accidents. The use of assistive systems that monitor a driver's level of vigilance and alert the driver in case of drowsiness can be significant in the prevention of accidents.

Paper 4: DEVELOPMENT OF A DROWSINESS WARNING SYSTEM USING NEURAL NETWORK, Itenderpal singh1, Prof. V.K.Banga [4]

Describe the facial image analysis. The author purposed a vehicle driver drowsiness warning system using image processing technique with neural network. it is based on facial images analysis for warning the driver of drowsiness or inattention to prevent traffic accidents. The facial images of driver are taken by the video camera that is installed on the dashboard in front of the driver. A Neural network based algorithm is proposed to determine the level of fatigue. It measures by the eye opening and closing, and warns the driver accordingly.

SUMMARY OF LITTERATUER SURVEY:

In-car safety technology is experiencing a period of Rapid development. These developments are well placed to support older people driving for longer in later life. Although older people are quite accepting of these technologies, the design of their associated HMIs can be seen to be distracting. This is a significant cause for concern when considering older drivers.

The needs and requirements of older people are both diverse and specific encompassing, any and all of, a gradual decline in cognition, vision or dexterity. There seems little evidence of older people being considered as a group in their own right to inform the design and effectiveness of these system control interfaces.

III. RELATED WORKS

1. **Atmega 32 Development Board**

The AVR ATmega32 Development Board can be used to evaluate and demonstrate the capabilities of AVR ATmega32 microcontroller. The MCU socket on board provides support for a 40 pin DIP package of AVR ATmega32 controller. The board is designed for general purpose applications and includes a variety of hardware to exercise microcontroller peripherals. It is a fantastic tool for code debugging, development and prototyping. The all new board design has made it much more user- friendly than its predecessors, ideally suitable for training and development purposes. The components used in this boards are of high quality and the PCB is high quality two layer PTH PCB, which makes this board especially durable. When you start using the AVR ATmega32 Development Board you will find it to be one of the best development tool available for AVR ATmega32 controller.

2. **Fire sensor**

A flame detector is a sensor designed to detect and respond

to the presence of a flame or fire, allowing flame detection. Responses to a detected flame depend on the installation but can include sounding an alarm, deactivating a fuel line, and activating a fire suppression system.

3. GSM Module

GSM stands for Global System for Mobile communication. It is a digital cellular technology used for transmitting mobile voice and data services. GSM is the most widely accepted standard in telecommunications and it is implemented globally. A GSM modem or GSM module is a hardware device that uses GSM mobile telephone technology to provide a data link to a remote network. From the view of the mobile phone network, they are essentially identical to an ordinary mobile phone, including the need for a SIM to identify themselves to the network.

4. Alcohol sensor

An alcohol sensor detects the attentiveness of alcohol gas in the air and an analog voltage is an output reading. The sensor can activate at temperatures ranging from -10 to 50° C with a power supply is less than 150 Ma to 5V. The sensing range is from 0.04 mg/L to 4 mg/L, which is suitable for breathalyzers.

5. Eye blink sensor

The IR Sensor is used to detect the eye blinking. The eye blink is a sensor which is placed in front of the driver on the top. While in driving time the eye blink in normal means it checks when the eye close to a particular second's buzzer will be indicated to alert him to wake up.

6. Relay module

The IR Sensor is used to detect the eye blinking. The eye blink is a sensor which is placed in front of the driver on the top. While in driving time the eye blink in normal means it checks when the eye close to a particular second's buzzer will be indicated to alert him to wake up.

IV. SYSTEM DESIGN

A. Hardware Design
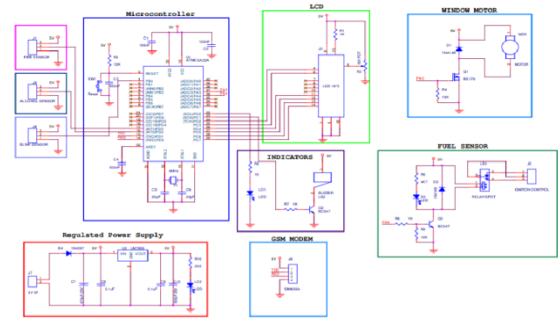
B. Software Design
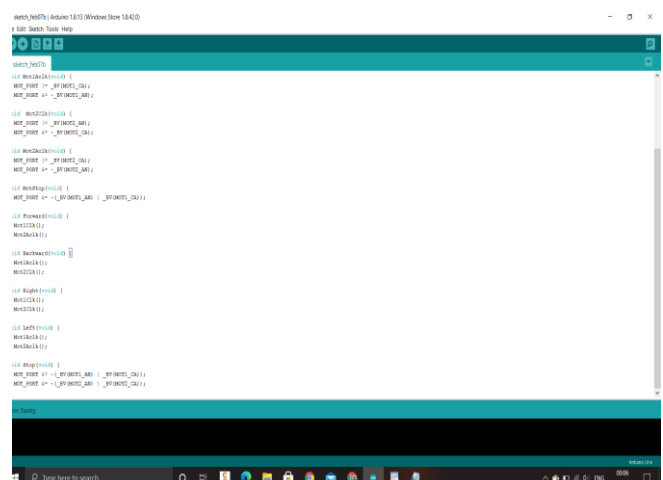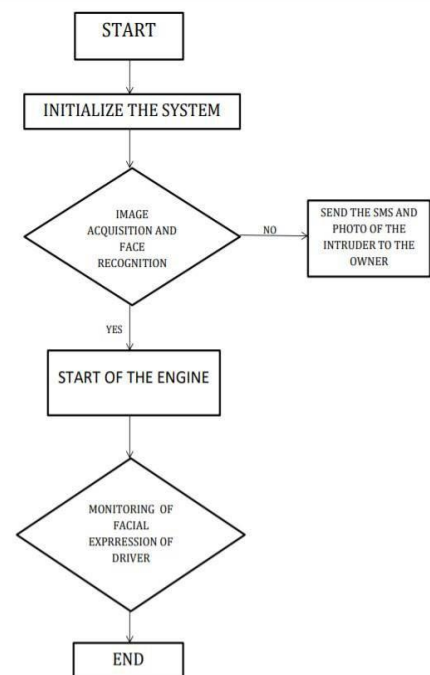
IV. CONCLUSION

From this we implement theft control techniques that can provide the important functions required by advanced intelligent Car Security, to avoid vehicle theft and protect the usage of unauthenticated users. In this project successfully we have developed an embedded system and implemented drowsiness detection, alcohol detection, fire detection in car. Also we have designed and formulated the algorithms although testing is yet to be done. This project will help us to reduce the complexity and improve security, also much cheaper and smarter than traditional ones.

V. FUTURE SCOPE

1. AI Based with Server monitoring

ACKNOWLEDGMENT

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