

## A Novel Approach of Drunk Drive and Face Detection with Automatic Turning Signals

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### Abstract

The main aim of this project is to design an embedded system for implementing an efficient alcohol and face detection system that will be useful to avoid accidents. Drunk driving face detection with car ignition locking and drowsy driving alert by using raspberypi aims to change that with automated, transparent , noninvasive alcohol safety check in vehicles. Raspberry pi with dc motor to demonstrate as vehicle engine. If driver is drunk, the processor instantly stops the system ignition by stopping the motor. If alcohol sensor is not giving high alcohol intensity signals, the system lets engine run normally.in additional of this project, automatic turning indication by using GPS location tracking and predefined path.

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### Introduction

Vehicle based alcohol detection systems stop someone with a positive blood alcohol concentration from beginning or operating vehicle. Current breath alcohol ignition interlock devices use either fuel cell or solid-state sensors. In the bulk use the well-established electric cell technology utilized in several evidential breath test devices. To forestall drowsy driving, a system of a tiny, low camera set before of the motive force that detects once the driver's eyelids become serious and begin to droop is commercially out there.

### PIC microcontroller

Microcontrollers made by microchip technology, derived from the PIC1650 originally developed by general instrument's microelectronics division. The name PIC initially referred to peripheral interface controller, and then it was corrected as programmable intelligent computers. PIC devices are popular with both industrial developers and hobbyists due to their low cost, wide availability, large user base, extensive collection of application notes, and availability of low cost or free development tools, serial programming, and re-programmable Flash-memory capability.

### Eye tracking

Eye tracking is the process of measuring either the point of gaze (where one is looking or the motion of an eye relative to the head. An eye tracker is a device for measuring eye. Positions and eye movement. Eye trackers are used in research on the visual system, in psychology, in psycholinguistics, marketing, as an input device for human-computer interaction, and in product design. There are a number of methods for measuring eye movement

### Alcohol sensor

Alcohol Sensor is a complete alcohol sensor module for PIC microcontroller. It is built with MQ303A semiconductor alcohol sensor. It has good sensitivity and fast response to alcohol. It is suitable for making Breathalyzer. This Grove implements all the necessary circuitry for MQ303A like power conditioning and heater power supply. This sensor

outputs a voltage inversely proportional to the alcohol concentration in air.

### LCD Indicators

A **Liquid Crystal Display (LCD)** is a flat-panel display or other electronically modulated optical device that uses the light-modulating properties of liquid crystals. Liquid crystals do not emit light directly, instead using a backlight or reflector to produce images in color or monochrome.<sup>[1]</sup> LCDs are available to display arbitrary images (as in a general-purpose computer display) or fixed images with low information content, which can be displayed or hidden, such as preset words, digits, and seven-segment displays, as in a digital clock. They use the same basic technology, except that arbitrary images are made up of a large number of small pixels, while other displays have larger elements. LCDs can either be normally on (positive) or off (negative), depending on the polarizer arrangement. For example, a character positive LCD with a backlight will have black lettering on a background that is the color of the backlight, and a character negative LCD will have a black background with the letters being of the same color as the backlight. Optical filters are added to white on blue LCDs to give them their characteristic appearance. LCD on used in wide range.

### Relay

A relay is an electrically operated switch. Many relays use an electromagnet to mechanically operate a switch, but other operating principles are also used, such as solid-state relays. Relays are used where it is necessary to control a circuit by a separate low-power signal, or where several circuits must be controlled by one signal. The first relays were used in long distance telegraph circuits as amplifiers: they repeated the signal coming in from one circuit and retransmitted it on another circuit. Relays were used extensively in telephone exchanges and early computers to perform logical operations.

A type of relay that can handle the high power required to directly control an electric motor or other loads is called a contractor. Solid-state relays control power circuits with

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no moving parts, instead using a semiconductor device to perform switching. Relays with calibrated operating characteristics and sometimes multiple operating coils are used to protect electrical circuits from overload or faults; in modern electric power systems these functions are performed by digital instruments still called "protective relays".

#### Ultrasonic Sensor

Ultrasonic sensors work on a principle similar to radar or sonar which evaluate attributes of a target by interpreting the echoes from radio or sound waves respectively. Ultrasonic sensors generate high frequency sound waves and evaluate the echo which is received back by the sensor. Sensors calculate the time interval between sending the signal and receiving the echo to determine the distance to an object. this technology can be used for measuring wind speed and direction, tank or channel level, and speed through air or water. For measuring speed or direction a device uses multiple detectors and calculates the speed from the relative distances to particulates in the air or water. To measure tank or channel level, the sensor ultrasonography, burglar alarms and non-destructive testing. Systems typically use a transducer which generates sound waves in the ultrasonic range, above 18000 hertz, by turning electrical energy into sound, then upon receiving the echo turn the sound waves into electrical energy which can be measured and displayed. an ultrasonic transducer is a device that converts energy into ultrasound, or sound waves above the normal range of human hearing.

#### Camera

A camera is an optical instrument to capture still images or to record moving images, which are stored in a physical medium such as in a digital system or on photographic film. A camera consists of a lens which focuses light from the scene, and a camera body which holds the image capture mechanism.

Still images stored in digital form are called "image files," while moving images similarly stored are called "video files." In the deprecated paradigm of photographic film for image storage, still images are simply called "photographs," and moving images are called "films." The still image camera is the main instrument in the art of photography and captured images may be reproduced later as a part of the process of photography, digital imaging, photographic printing. The similar artistic fields in the moving image camera domain are film, videography, and cinematography. The word *camera* comes from camera obscura, which means "dark chamber" and is the Latin name of the original device for projecting an image of external reality onto a flat surface. The modern photographic camera evolved from the camera obscura. The functioning of the camera is very similar to the functioning of the human eye.

#### DC Motor

ADC motor is any of a class of rotary electrical machines that converts direct current electrical energy into mechanical energy. The most common types rely on the forces produced by magnetic fields. Nearly all types of DC motors have some internal mechanism, either electromechanical or electronic, to periodically change the direction of current flow in part of the motor.

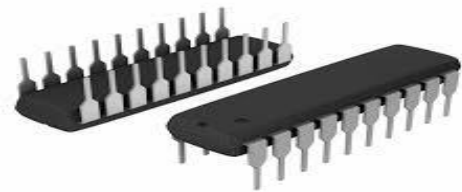
DC motors were the first form of motor widely used, as they could be powered from existing direct-current lighting voltage or by changing the strength of current in its field windings. Small DC motors are used in tools, toys, and power distribution systems. A DC motor's speed can be controlled over a wide range, using either a variable supply appliances. The universal motor can operate on direct current but is a lightweight brushed motor used for portable power tools and appliances. Larger DC motors are currently used in many applications.

#### Power Supply (Battery)

A power supply is an electrical device that supplies electric power to an electrical load. The primary function of a power supply is to convert electric current from a source to the correct voltage, current, and frequency to power the load. As a result, power supplies are sometimes referred to as electric power converters. Some power supplies are separate standalone pieces of equipment, while others are built into the load appliances that they power. Examples of the latter include power supplies found in desktop computers and consumer electronics devices. Other functions that power supplies may perform include limiting the current drawn by the load to safe levels, shutting off the current in the event of an electrical fault, power conditioning to prevent electronic noise or voltage surges on the input from reaching the load, power-factor correction, and storing energy so it can continue to power the load in the event of a temporary interruption in the source power (uninterruptible power supply).

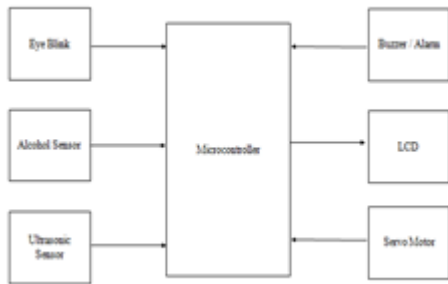
#### Existing System

The most obstacle is that safety measures regarding drunk and drowsy driving disagree, and this place a big inconvenience to automobile users. At a similar time, the counseled technique provides interference for the automobile from striking may error caused by man .Eye detection remains a difficult drawback with no cheap or industrial solutions.



#### Proposed System

The automatic parking maneuver for little mobile vehicle is represented using some analytical techniques. To forestall drowsy driving, a system of a tiny, low camera set before of the motive force that detects once the driver's eyelids become serious and begin to droop is commercially out there. Visual image captured by the camera and controller and additionally DSP to search out the surroundings and act consequently to complete the parking. In this proposed system automatic alcohol detection system which is also connected to the server from where the status of the person will be known at the same time. If the alcohol is detected automatically the ignition will be off. If the location is fixed, the left and right indicators work automatically by detecting routes.



### Advantages

- Obstacle detection
- Getting back on the path towards the goal
- Detection of parking spot

### Conclusion

The vehicle is at a very high speed on highways due to which handling is tough and getting the vehicle to halt in such a condition is difficult. Due to this many automobile companies are trying to research into how an accident which occurs due to driver fatigue can be prevented.

In this project will generate a model which can prevent such an incident.

### Reference

- [1]Al – Absi, H.R.H., Devaraj, J.D.D., Sebastian P. and Voon V. P. 2010. Vision-Based Automated Parking System. Information Sciences Signal Processing and Their Applications, pp.757-758
- [2].Yang G, Lin Y, Bhattacharya P. Driver fatigue recognition Model based on information fusion and dynamic Bayesian Network. Information Sciences, 2010, 180(10): 1942-1954
- [3].Lal S K, Craig A. Reproducibility of the spectral components of the electroencephalogram during driver fatigue. Int. J. Psychophysiology., 2005, 55(2): 137-143.
- [4]Fairus M. A., Salim S. N., Jamaludin I. W. and Kamarudin M. N. 2011. Development of an Automatic Parallel Parking System for Non holonomic Mobile Robot. International Conference on Electrical Control and Computer Engineering (INECCE), pp.45 – 49.
- [5]Hélène V., Sébastien G., Nicoleta M.E. and Saïd M. 2015. Automatic Parallel Parking in Tiny Spots: Path Planning and Control. IEEE Transactions on Intelligent Transportation Systems, Vol. 16, No. 1, February, 2015.