

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 5, Issue 6, March 2025

AI Door with IoT Driving

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Abstract: Now a days, public safety plays a major role in human life, it can be achieved by developing technology through automation. Road accidents are caused due to various reasons. Some of them also caused due to sudden opening of the car door while getting out of the car and bike riders suddenly comes to the door of the car at same time. In this paper also we are presenting a driving license detection and safety system capable of testing the knowledge and mental awareness of the person while driving a vehicle so as to improve the standard of license issuing mechanism in order to improve safety in a country.

Keywords: Sudden opening of car door, Improve safety, Driving license detection

I. INTRODUCTION

In this project to develop the system driving license detection and safety system. The system is done by interfacing Node MCU Board with number of sensors. In this project we are using Node MCU Microcontroller. When the RFID tag is swapped the motor will on and off. The alcohol sensor, to detect the drink and drive and voice module to produce a deep sound If the person is drunken so send the message to person and to change the driver. It is a voice interactive system. RFID reader to read the tags. The Alcohol level and license name and number will be displayed on the LCD, web application and Android application. This is an effective method to manage traffic management system. With rapid advancements in technology, the world is heading towards connectivity in all fields. Such technology that provides communication among anyone at any place or any time is Internet of Things (IoT). The lot may is considered as the Internet of future that will enable machine-to machine learning. The main idea behind IoT is to have self-governing connection that secures and allows exchanging of data between real world and physical devices and real time applications. The sensors and the methods we use here are easy to implement and is cost efficient. Unlike other methods our prototype does not have any wires or sensors which has to be attached to the driver's body, our system is equipped with MQ sensors, alcohol sensor which is placed inside the car near to driver seat to detect the presence of alcohol and an alarm is produced if the presence is detected. To reduce road accidents, we need to analyze the reasons behind the accidents. If we see the records, it is found that many accidents take place because of rash driving caused by the alcoholic state of drunken drivers. Driver loses their driving control once drunk. Second type of accident occurs due to fatigue condition of driver while driving a long distance at a stretch or driving at night without taking proper sleep. This paper presents very effective solutions to reduce the road accidents and other post accidental medical help. It provides eye blink monitoring system, accident site locator, alcohol detector and safe distance monitor and control system. It detects the drowsiness and provides alarm signal to the driver. Even after the alarm signal the driving condition continues the brake mechanism of the vehicle is activated and the further movement is restricted. The road accident rates are increasing day by day due to large numbers of vehicle running on the road. A control system for a Car to avoid accidents using the Ultrasonic sensor and ESP32. With the help of such a control system, the car speed is automatically adjusted depending on the distance. This control system is entirely based on the ESP32, Ultrasonic Sensor, to solve this problem you will need to make an automatic system that can measure the distance between you and the car in front of you. For distance measurement, we can use the Ultrasonic sensor. The ultrasonic sensor with ESP32 can be used in different ways. We have implemented a prototype of the proposed door lock system and conducted experiments to observe the response time and reliability of such system. System will automatically indicate the Red and green LED and it will show the obstacle present or absent on LCD with the distance between the obstacle and the sensor. The project to avoid the accident and provide human safety automatically with the help of the sensor.

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II. LITERATURE REVIEW

1. "Driver Authentication and Accident-Avoidance System for Vehicles" - Dhivya, M., and S. Kathiravan

In this paper, the main aims of accident-avoidance system are to avoid a loss of life and provide safety mechanism for the driver. Speeding drunk drinking, seat belt adjustments and low use of helmets all leads to accidents. Most city accident are due to driver careless but outside the city accidently mostly occur due to drunken driving. Accidents may also occur due to health condition, if there is a loss of pulse, the driver may fall unconscious.

2. "An IoT Based Safety and Security Mechanism for Passenger Vehicles" - Binu P K, Sredhey K J

In this project the driver and passengers in the vehicle to be alert enough while they are having a ride and thus providing better security features for the passenger vehicles. Increased count in road accidents now a days are mainly because of rash driving, low vigilance level of the driver, drunken driving etc.

3. "Automated Door Lock System Using ESP32" - Okpara, Chinedu & Reginald, & Ononiwu.

In this paper, the automated door lock system with L293D motor driver IC as the focal point. The system is composed of three major modules. The microcontroller module consists basically of the microcontroller. The keypad module serves as the input to the microcontroller, as the password required to open the door must be entered into the system via the module.

III. PROBLEM STATEMENTS

1 The device combines radar technology with artificial intelligence to detect unattended children or animals with accuracy.

2 The system works by sending out radar signals that are reflected back by people, animals or object in the vehicle.

3 The built in AI then analyses the reflected signals. The system would prevent vehicle doors from locking and sound alarm to alert the driver, passenger and other people in the area that there is problem.

IV. OBJECTIVES

1. To avoid the Accident and provide human safety automatically with the help of the sensor

2. System will automatically indicate the red and green LED

3. It will show the obstacle Present or absent on LCD with the distance between the obstacle and the sensor

4. To display Alcohol sensor level, License name and number on LCD and Android app& Web development

5. To detect the driving license for accident safety

V. MOTIVATIONS

1. The prototype consists of various components that are interconnected to form a document verification unit which consists of a RFID reader to read the tag, a LCD display to displaywhether the id is matched or not, Wi-Fi module to connect Node and cloud

2. Embedded C is used to program Node MCU Controller. It consists of an alcohol sensor to detect drink and drive and a buzzer to produce a beep sound if the person is drunken.

3. A Node is used to control LCD display, RFID reader, alcohol sensor and buzzer.

VI. SCOPE

1. This system basically works on two modes. First, Artificial intelligence and Second, manually.

2. In AI mode, it measures the distance between the obstacle and take action accordingly.

3. In manual mode, in parking area the distance between the cars are less than 250cm then at that time, driver will take action.

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