WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

The Road Blocker Security System

Shekhar Bansode[1], Vaishnavi Bansode[2], Manjusha Bicchewar[3], Abhijit Birajdar[4], Aniruddha Raje[5]

UG Students of Department of Electronics and Telecommunication, Trinity Academy of Engineering, Pune

ABSTRACT –

The Road Blocker Security System is the vehicle control device that can be either integrated with controlling access to high security areas such as airports, ports, customs, governmental buildings, banks, penitentiaries, power stations, military sites, stores, embassies, warehouses, and the likes. The hydraulic road blocker is designed to guarantee the full level of security. These devices are usually hidden, buried or embedded in the ground at the entrance of the security gateway of a protected site and are erected automatically under alarm conditions, such as when entrance of a suspected vehicle is to be prevented. Under normal conditions, road blockers remain buried under the ground allowing vehicular traffic flow to the site. Erection and retraction of road blockers are usually made by hydraulic or pneumatic actuating element. In this we basically use the use the motor to pop up the defense wall system in the small scale. But in the large scale the hydraulic pump were used to pop up the defense wall on the road to stop the vehicle[1]

INTRODUCTION

The road blocker security system is a physical security measure designed to control vehicular access to a particular area, such as government buildings, military installations, embassies, or high-security facilities.Key components of the system typically include hydraulic or electromechanical barriers installed in the roadway that can be raised or lowered to allow or deny vehicle passage. These barriers are often reinforced with materials like steel to withstand high impact forces.The system is usually integrated with access control mechanisms such as keypads, RFID readers, or biometric scanners to authorize vehicles to pass through the barrier.Additionally, the system may feature surveillance cameras, motion sensors, and alarms to detect and deter unauthorized access attempts.Overall, the road blocker security system provides a robust defense against unauthorized vehicular intrusion, enhancing the security of protected premises and ensuring controlled access to authorized vehicles only Ensure controlled access. [2]

The improvement of cameras for road navigation detection is also useful to increase the chance of safety. One of the supporting technologies is Advanced Driving Assistance System (ADAS) which is extremely contributing navigation detection. Authors proposed a new technology to recognize stop signs and calculate the distance. The stop signal falls outside the camera's field of view when the vehicle approaches the stop signal. Stop character recognition is performed using the cascade classification, which is composed of three different types of classifiers: haar-like classifiers, LBP and HOG. This article aims to build such a system using image recognition to identify traffic signals, and correctly classify it using the neural convolution network via an Arduino- controlled autonomous car.Two neural networks are being built during the reconnaissance process to extract the color and shape features. This process is primarily designed in relation to the discipline of fuzzy sets. Tracking was formed through image sequences using a Kalman filter. [3]

METHODOLOGY

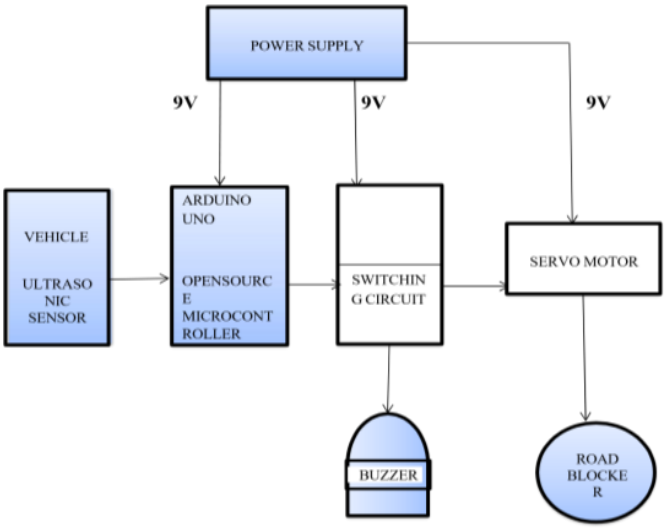
We have used the different materials for the building of sample project of defense and security system also called as road blocker system. The Arduino uno contains the different source code which contains the overall system management in this project. It also helps to sense the vehicle from the particular distance with the help of source code contains in it. We have also used the ultra sonic sensors deter the vehicle froma particular distance. The servo motor which helps to drag the particular road blocker to pull up and stop the vehicle with it. The servo motor also contains industrial automation, robotics, CNC machinery or automated manufacturing, what you really need is a sophisticated, high-quality servo motor capable of top energy efficiency and reliable performance. Leading semiconductor solutions from Infineon's vast portfolio let you have it all: quality, intelligence, efficiency – and the price you demand. Discover what your servo motor can achieve when you choose servo drivers, micro controllers and more from Infineon. [2]

WORKING PRINCIPLE

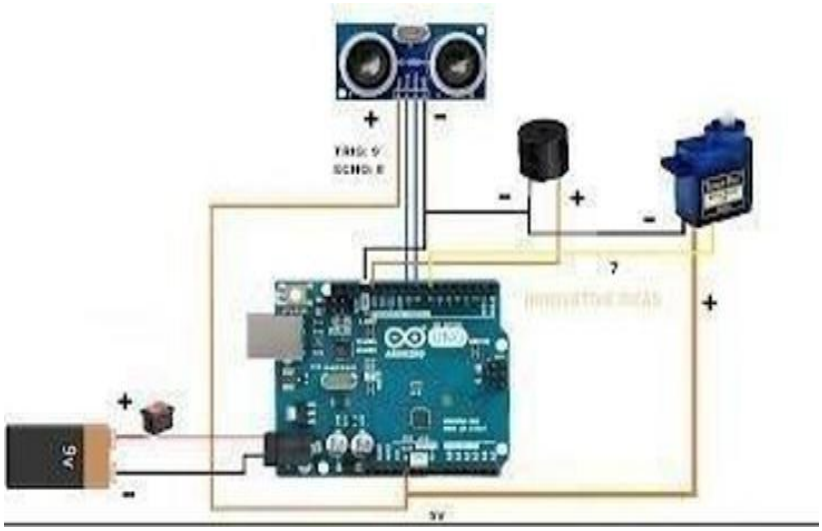
The Arduino sends the signal to the buzzer to make the noise. In this way, the vehicle is detected. Another purpose for which this system can be used is called the road blocker system This system can be used to check if the driver might rush the vehicle while driving. This can be done with some minor changes in the Arduino code. Instead of detecting numbers of vehicles, the Arduino should give the command to buzz when the vehicles rushed through

the gates without permission. This system can be used with only vehicles like trucks, cars, big loaded vehicles .Another purpose of this system, it can be used in hospitals to check when patients gain consciousness. A patient when unconscious, has the eyes closed. So whenever they open their eyes, the buzzing sound can inform the nurse that the patient is awake. [2]

BLOCK DIAGRAM



CIRCUIT DIAGRAM



COMPONENTS REQUIRED

Arduino Nano: The Arduino Nano has a number of facilities for communicating with a computer, another Arduino, or other microcontroller. The ATmega328 provides UART TTL (5V) serial communication, which is available on digital pin 0 (RX) and 1 (TX).

Ultrasonic Sensor: An ultrasonic sensor is an instrument that measures the distance to an object using ultrasonic sound waves. An ultrasonic sensor uses a transducer to send and receive ultrasonic pulses that relay back information about an object's proximity.

Buzzer: Buzzer meaning electronic component that generates sound through the transmission of electrical signals. Its primary function is to provide an audible alert or notification and typically operates within a voltage range of 5V to 12V.

Servo Motor: A servomotor is a rotary or linear actuator that allows for precise control of angular or linear position, velocity, and acceleration in a mechanical system. It constitutes part of a servomechanism, and consists of a suitable motor coupled to a sensor for position feedback. It also requires a relatively sophisticated controller, often a dedicated module designed specifically for use with servomotors.

Battery: battery in electricity and electrochemistry, any of a class of devices that convert chemical energy directly into electrical energy. Although the term battery, in strict usage, designates an assembly of two or more galvanic cells capable of such energy conversion, it is commonly applied to a single cell of this kind.

CONCLUSION

It completely meets the objectives and requirements of the system. The framework has achieved an unfaltering state where all the bugs have been disposed of. The framework cognizant clients who are familiar with the framework and comprehend it's focal points and the fact that it takes care of the issue of stressing out for individuals having fatigue- related issues to inform them about the rush driving. The road blocker system is an advance mechanism based on Internet Of Things (IOT) while we have improved the importance of rushed driving through a particular area or sensitive resident the purpose is to stop the accidents and criminal activities takes place within the conservative places like government offices etc. The system is highly advanced and to build such it consumes highly expensive.

REFERENCES

1. M. Miyim and M. A. Muhammed, “Smart traffic management system,” 2019 15th Int. Conf. Electron. Comput. Comput. ICECCO 2019, vol. 6, no. 2, pp.
2. 377–383, 2019, doi:
3. 10.1109/ICECCO48375.2019.9043219.

4. K. Akhilesh, J. Ratnakar, R. Sandesh, and K. Adnaan, "Border Security System Using Arduino, Ultrasonic Sensors and Iot," Int. Res. J. Eng. Technol., no. May, pp. 3293–3299, 2020, [Online].
5. Available: www.irjet.net
6. Al Shahrani and A. K. Al-omaireen, "Design of Hydraulic Road Blocker Team members," Google Sch., vol. 1, 2014, [Online]. Available: of%0Ahydraulic%0Aroad%0Ablocker.pdf