

IOT BASED AUTONOMOUS THEFT PROOF DELIVERY ROBOT

¹Dhanashri Pawbake, ²Sangale Divya, ³Ugale Bharti, ⁴Banker Pankaj, ⁵Dr. S.R Jondhale

¹UG Scholar, Dept. of Electronics and telecommunication, AVCOE, Sangamner

²UG Scholar, Dept. of Electronics and telecommunication, AVCOE, Sangamner

³UG Scholar, Dept. of Electronics and telecommunication, AVCOE, Sangamner

⁴UG Scholar, Dept. of Electronics and telecommunication, AVCOE, Sangamner

⁵Asst. Prof., Dept. of Electronics and telecommunication, AVCOE, Sangamner

ABSTRACT- The autonomous delivery robot is meant to be a substitute for a goods delivery person. The delivery robot is capable of navigating through a cluttered space environment from a home location to a destination while avoiding impediments along the way. When something is placed within the bin, the robot only moves from one position to another after being detected by an ultrasonic sensor as having done so. The start, end, and midpoint are represented by Bluetooth beacons, and the robot will utilise them to distinguish between the designated sites. The robot will detect Bluetooth beacons as a terminal. Unlike the outdated robot that could only operate inside a specified black lane, the autonomous robot will travel along an unmarked path.

Index Terms- Delivery Robot; Parcelling; Remote Control; GPS Modem; speed .

I. INTRODUCTION

In terms of both the variety of new applications and the degrees of interest among established actors in the automotive, truck, public transportation, industrial, and military worlds, the field of autonomous robots is expanding quickly around the world. Autonomous robotic systems have the potential to significantly improve operational effectiveness and safety. The importance of creating quicker, cuter, and more sustainable last mile delivery is increasing as a result of the explosive rise of ecommerce. Autonomous robots can be used to address a variety of issues, including decreased capacity, a driver shortage, damaged and stolen goods, unsuccessful delivery efforts, increasing track An autonomous robot is designed and engineered to deal with its environment on its own, and work for extended periods of time without human intervention. It must not only carry out its task of delivery properly, but must also consider the various scenarios changing around it and act accordingly. The robot must make quick decision even in adverse conditions, considering the safety of pedestrians around it [1]. The aim of autonomous robots is to work alongside humans and try to make human life easier. Currently, many robots are being used in industries [2], homes [3], military applications, disaster man agreement [4], etc., all around the world. The advancements in robotics has made lives easier for humans in many aspects and it provides with a safer and more client alternative to perform tasks which are dicot or time consuming for humans. Some of the applications of autonomous robots include cleaning robots like Roomba, delivery robots, autonomous vehicles, and other robots that move freely around a physical space without being guided by humans [5].

II. METHODOLOGY

A. BLOCK DIAGRAM

In this block diagram of the IOT base autonomous theft proof delivery robot for food and Ecommerce by using ESP 8266 Node Mcu Microcontroller and motor driver. Robot has an upper section to carry the packages on it that can be opened only by intended recipients .The anti theft mechanism eliminates the risk of any robot thefts and ensure human like delivery. Also wi-fi camera help to detect the path of the automated robot.

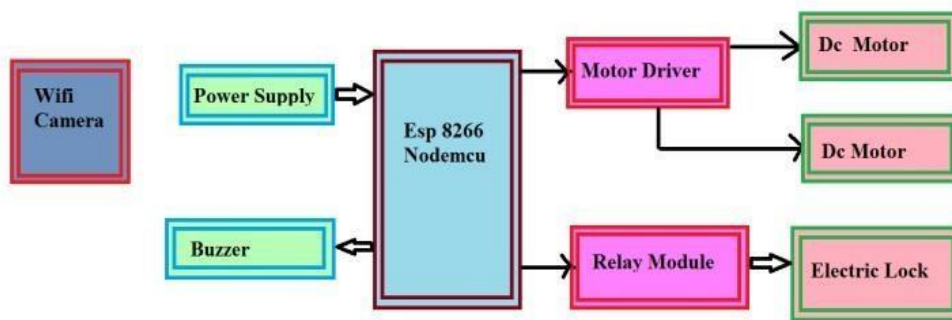


Fig.1: Block Diagram

B. HARDWARE IMPLEMENTATION

1 NodeMCU ESP8266 :

ESP8266EX delivers highly integrated Wi-Fi SoC solution to meet users' continuous demands for efficient power usage, compact design and reliable performance in the Internet of Things industry. With the complete and self-contained Wi-Fi networking capabilities, ESP8266EX can perform either as a standalone application or as the slave to a host MCU. IOT Based Autonomous Theft Proof Delivery Robot AVCOE, Sangamner 8 When ESP8266EX hosts the application, it promptly boots up from the flash. The integrated highspeed cache helps to increase the system performance and optimize the system memory. Also, ESP8266EX can be applied to any microcontroller design as a Wi-Fi adaptor through SPI/SDIO or UART interfaces. ESP8266EX integrates antenna switches, RF balun, power amplifier, low noise receive amplifier, filters and power management modules.

- Advance signal processing
- Spur cancellation and RF co-existence mechanisms for common cellular, Bluetooth, DDR, LVDS, LCD interference mitigation



Fig.2: Pin Configuration of ARM7TDMI-S

2. Wifi Camera:

- Sales Package: 1 Security Camera, Adapter, Cable, QSG, Warranty Card, 2 Wall Anchors, 2 Wall Screws.
- Model Number : HCP03
- Camera Type: IP
- Video Output: WiFi
- Video Recording Resolution : 1080p
- Video Recording Frame Rate: 10fps per Channel



Fig 3: Wifi Camera

3. Electric Lock Solenoid Cabinet Miscellaneous

- 12V DC operation (you can use 9-14 DC volts, but lower voltage results in weaker/slower operation)
Push or pull-type
- Size: L27mm*W29mm*H18mm
- Lead length: 25mm
- Locking telescopic length: 10mm
- Unlock time: 1 second
- Widely used in automation projects, electronic safes, etc.



Fig 4: Electric Lock Solenoid Cabinet Miscellaneous

C. FLOWCHART OF DILEVERY ROBOT :

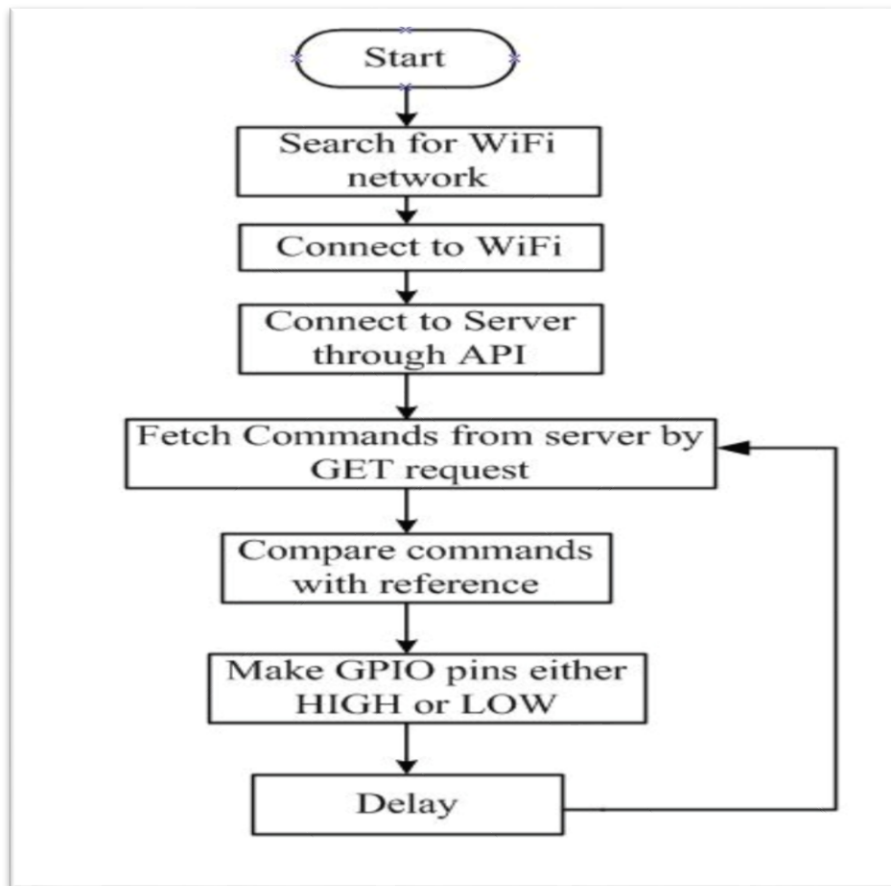


Fig 5: Flowchart of DELIVERY ROBOT

III. RESULT

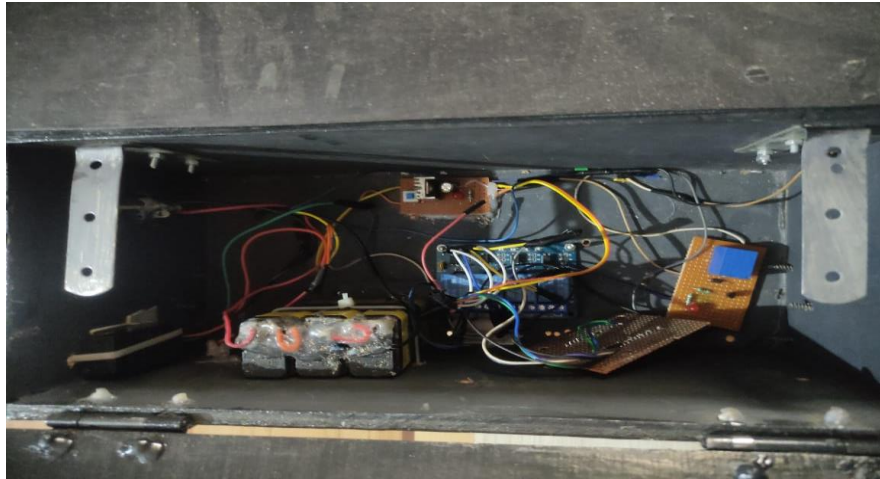


Fig 4: Result of Hardware and Webpage Data

IV. CONCLUSIONS

In this paper we will achieve to build an autonomous delivery robot capable of transporting material to our desired destination. Using our project, we can substitute the job of a delivery person since this robot is capable of delivering goods from one place to another which can thus, help save money over time as this option will be cheaper for a company to use for delivery purposes in the long run.

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