



Iot Based Spy Control Robot For Military Purpose

Dr. G. Chenna Kesava Reddy¹, B.Shirisha², D.Vamshidhar Reddy², L.Sindhuja², N.Ramu²

¹Associate Professor, Department of ECE, Teegala Krishna Reddy Engineering College, Medbowli, Meerpet, Saroornagar, Hyderabad.

²Department of ECE, Teegala Krishna Reddy Engineering College, Medbowli, Meerpet, Saroornagar, Hyderabad.

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ABSTRACT

In this project, the Robot car is designed with DC motors and wheels. This robot will be controlled from anywhere in the world with the help of IOT technology. By using a IOT service provider app or website we can control the robotic movements like forward, backward, left, right and stop. In addition the robot is interfaced with obstacle sensor. When any obstacle is detected then the robot will stop and changes the direction. We are using a ESP32 and ESP32 CAM Micro controller with inbuilt Wi-Fi module to interact with IOT server. In addition to the first stage, we will use a metal detector. When any metal is identified then the robot will be stopped. GPS will activate and identify the location in the form of latitude and longitude and the same information will be updated in the IOT cloud platform.

KEYWORDS: DC motors, ESP 32 CAM Microcontroller, Battery, Metal detector, GPS module, ESP 32 dual core microcontroller.

1. INTRODUCTION

Here an IOT technology is used i.e an IOT describes network of physical objects or things that are embedded with sensors, software and other technology for exchanging the data with devices over the internet .In this project the main protocol is the robot vehicle can operate everything through IOT cloud platform.

Due to lack of security and terrorist activities most of the army people are losing their lives at borders for wars and other attacks, we do not want that to be happen so, to overcome this problem we have proposed a system called controlling a robot by applying directions and a camera module which will provide a live streaming, It will helps to identify the unauthorized persons. A metal detector is used to detect the mines such as bombs or metal. When a metal detected

immediately GPS will activate and send the information to the user and also we can find the location when the bomb is detected.

That is the reason it is safest and stable spying unit for the battlefield. This robot gives many functionalities in one thing. It is reliable to easily identifying the unauthorized persons by sitting miles away.

2. LITERATURE SURVEY

The main idea to construct this robot is for the spying purposes, it for to keep an eye on people maneuvers in the battle ground or in the war days to reduce the chances of takeovers from the enemy side. Army people or entities have to face many dangers on their lives while spying on enemy or opposite entities. To overcome these ideas for this job robot will be more

suitable and will decrease the risks of loss of human lives and can better spy illicit maneuvers of their opposite entities. These types of robot will be constructed in such a way that it would have a night vision camera mounted on it so in the darker places or in night it can record the view clearly.

Camera will be controlled through remote by using an android application. For communication is needed to use some modules, here Bluetooth module won't be much efficient for long ranges as the Bluetooth communication is weak not that strong. There are many different modules with their different specifications. For large ranges Wi-Fi, Zig honey bee and many other can be used. Future scope of this robot is very vast, as it will continue to modify with time. For example it will be modified by planting gas sensors which will detect harmful gases in the surroundings. It can also be used as bomb diffuser in the future, bomb disposal team can have these robots which will help to diffuse bombs. The size of the robot can be scaled down to its minimal size. This innovative robot system is constructed to perform various special tasks which is dangerous for human's life, which have his risk factor of human loss. On the whole system can be used to perform task in cases where some crime happened and can be very important for military or army for keeping an eye on opposite entities or purpose of spying. Some of the time it is important for a human which is bomb transfer master to incapacitate the gadget. For this reason, the master who uncovered the bomb will put on a defensive suit and protective cap, get a tool compartment of gear and walk the 100 or so meters to the site .To achieve the bomb's area ,it might be important to climb stairs, creep through entry way or even rests to satisfy the mission. This framework spares the profitable existence of our officers. This robot can also be used as robotic arms and mobile robots to go into armed force territory. The entire framework is controlled through android application.

PROBLEM STATEMENT

Due to lake of security and terrorist activities we are loosing lives of people. Our men are dying in wars ,and we do not want that,so to overcome this problem, we have proposed a method for controlling the robot through camera providing online streaming it it eill

detect mines too.that is the reason it is safest and stable spying unit for batterfield.

The robot gives many functionalities in one thing,it is reliable and it can see everything even if the users are sitting miles away.

3. PROPOSED SYSTEM

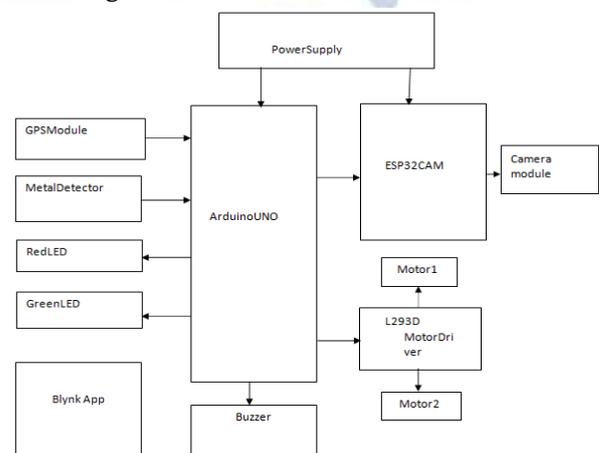
In our proposed model , we use a metal detector robotic vehicle that can be used in metal detection as well as for gas detection so the robot instead of humans can be put to detect a dangerous item and thus reduce the chance human injury or fatality to a great extent. It describes an all-terrain robot with Android based Wi-Fi wireless communication system would be a very adaptable solution. Our prototype is controlled wirelessly from a safe distance. Its water proof and has extended wireless communication range than the existing systems.

In our proposed model we are using Arduino IDE for compiling the program. Download the blynk app from the Google play store. Create a New Project (new Auth Token will be sent to your email) add Button Widget then Go to Widget Settings. Then set PIN to D3 - this where you tell the app that Button will turn ON and OFF something and finally set Mode to Switch.

The robot can be controlled from anywhere via this Blynk app. After logging into the Blynk app, turn on the hotspot and check the status whether it is online or offline. Then it will display four buttons for directing the robotic movement. If a metal has been detected, it will display that a metal has been detected in the mobile screen.

4. MODELING AND ANALYSIS

Block diagram:



WORKING

The working principle of the project is categorized into two parts one is Detecting the obstacle and the second part is automatic gun firing.

PART 1: - CONTROLLING THE ROBOT MOMENTS:

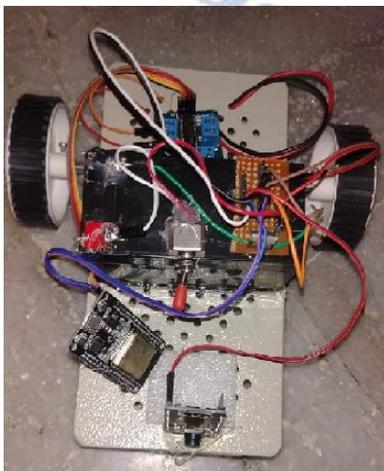
The Robot car is designed with DC motors of 12V. The ESP32 Dual Core Micro controller of frequency 240MHZ with in-built wifi & Bluetooth is used with 3.3V output. L293D Motor Driver is used to increase the output voltage of Micro controller to DC motor output as the motor has to run. This robot will be controlled from anywhere in the world with the help of IOT technology. By using a IOT service provider app i.e., Blynk app. The robotic movements like forward, backward, left, right and stop can be controlled with the commands given by micro controller. The live streaming is done by ESP32 CAM.

PART 2: - DETECTING THE OBSTACLE:

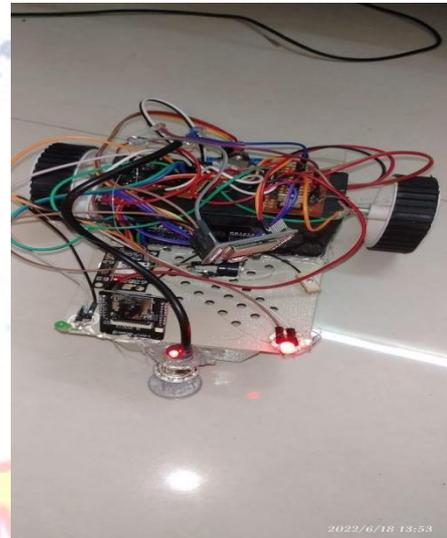
Here a metal detector is used to detect the metals/bombs. Whenever a metal comes in contact with a particular device then there will be generation of electricity inside the particular metal detector and it gets amplified and gives the signal to the controller. With the help of GPS of NEO-6M ,it will send the notification and also location of the obstacle .

5. IMPLIMENTATION OUTPUT STREAMS

In stage 1, here a robot car is design with DC motors and wheels. This robot will be controlled from anywhere in the world with the help of IOT technology and camera module for live streaming.



In addition to the first stage, A metal detector is used. When any metal is identified then the robot will be stopped. GPS will activate and identify the location in the form of latitude and longitude and the same information will be updated in the IOT cloud platform. This Robot will be controlled from anywhere in the world with the help of IOT technology.



6. CONCLUSION

This paper mainly focuses on the security, remote surveillance, and monitoring of our homes done by the surveillance robots. Remote surveillance has become the most important research topic over the past decade. In this project the motion of the robot is being controlled manually using a blynk application. According to the moment it controlled the wheels and hence the moment of the robot through the blynk application by using IOT. The input is given to the blynk app is send through the internet and desired moment occurs at the output. Here ESP 32 cam microcontroller capturing the live streaming visuals with the help of IOT technology Thus the project has been Successfully designed and tested.

FUTURE SCOPE:

Future scope Future scope of this robot is very vast, as it will continue to modify with time. The work that can be done on our robot in the future in order to enhance its performance are to find ways to meet the challenges described in the same thesis. More research can be done to find out lighter weight materials to form the base of the robot. This will provide a smoother movement of the robot. The most effective method to increase the accuracy of our robot is the inclusion of better sensors,

although the project cost might increase but the accuracy will definitely increase as well as the problem space where the robot can be used. Better actuators will result in a faster and more efficient robot. The project helped us to see the requirement of more environmentally friendly batteries that not only last longer but are also rechargeable. More research could be done on developing environmental yet cost efficient batteries

Conflict of interest statement

Authors declare that they do not have any conflict of interest.

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