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Army Spy Agent Robot

Pratik Khule[1], Revati Kashmire[2], Lochana Jadhav[3], Manasi Wagh[4]

[1]Pratik Khule Department of Information Technology & NDMVP'S KBTCOE
[2]Revati Kashmire Department of Information Technology & NDMVP'S KBTCOE
[3]Lochana Jadhav Department of Information Technology & NDMVP'S KBTCOE
[4]Manasi Wagh Department of Information Technology & NDMVP'S KBTCOE

Abstract - Science is a field developing in a rapid phase in order to create the technology which can make human life easier. Nowadays, many innovations and inventions are made in the field of to reduce the loss of human lives. Robots are assuming a critical job in the military application. The vast majority of the work in the military is unsafe for person. In a war field or safeguard task a warrior needs to take his own specific manner to achieve the goal. The various approaches are perilous for a warrior robot replaces the trooper. The proposed system is a variant of spying robot that can empower us to watch the place of our advantage. The extent of the robot additionally helps it to be utilized as a covert agent robot.The robot consists of IOT based wireless camera which can transmit videos of the war field to the server in order to prevent any damage and loss to human life. It will also contain a weapon i.e gun,which will be controlled by us from a remote location.Robot is provided with radar system for completely dark areas.
In the proposed model cloud based IOT interface with app and Wi-Fi module are used for retrieving, storing and recovering information to increase the range of communication.

Keywords **-** IoT, Camouflage, Surveillance, CCD camera military, RF, spy robot, video transmission.

1. INTRODUCTION

The technology has brought a revolutionary change in the field of robotics and automation which ranges in all the sectors from household domestic works to the defense sector. Today in the global market smart phones have brought a revolution in changing people's lifestyles. Android operating system is one of these systems which has made a huge impact providing many applications for robotics to help people in their day to day life. Numerous basic military technologies deployed are now advanced to the piece of industrial robots. In any case, the importance of military autonomy and modern mechanical autonomy is still quite different. The military has special, robotic equipment while, in modern terms, the robot is a larger amount of a smart, adaptable, large-scale manufacturing machine. Later, the use of modern robots for military applications will always be imaginable. Cost and development of the specialized capacity of the innovative robot will build the enthusiasm of the military customers. This work will be flexible to control at any type of landscapes. And can be controlled up to 800 meters by using the mobile phone. By using the camera we can see it in our laptop or computer. The night vision wireless camera is attached with the robot in order to monitor the situation and the camera can be rotated 360 degrees with the android application through motor.

2. LITERATURE REVIEW

The main idea to construct this robot is for the spying purposes, it for to keep an eye on people 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 problems 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. Before entering to any doubtful districts we can send robot to check the status of that field so the military or army individuals don't need to risk their . The primary focal point of this exploration is the use of robots in wars and in harmony and their effect on the general public. This paper examines about advances utilized for spying and observation in various situations and condition. The creators examine the need and motivation behind building up the cutting edge robots for various, unforgiving and condition of the war zones. They intend to present progressed controlling, self-ruling and rapid robots to serve for harmony in countries, as effectively

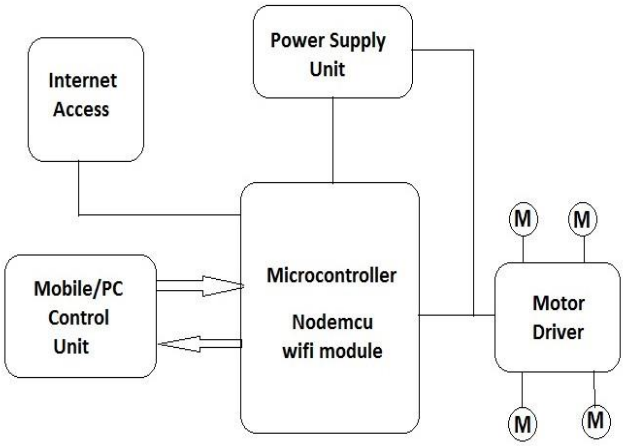
as human controlled machines. Alongside these variables, they center on growing innovative weapons and hardware to be utilized.

This government operative robot is easy to use. It can undoubtedly move, catch pictures and transmit them remotely on the checking screen where the warriors can see the present circumstance of the war field. The powers can design their guards as indicated by the risks been appeared through the robot. This robot is utilized for short separation reconnaissance for the security of that locale. The structure of a vehicle having a camera for checking with RF innovation for remote activities. The transmitter sends the directions to the recipient for controlling the development of robot. The collector gathers and disentangles the gotten flags previously intensify the micro-controller which drives the motors through drivers. Remote of the camera can live sound and visual recording to a PC or a TV through a tuner card to the station of remote controller. Current military forces are using different kinds of robots for different applications going from mine distinguishing proof to spare exercises. ,they will be used for perception and surveillance, coordination and support, correspondences establishment, forward-passed on antagonistic exercises and as strategic fakes to cover move by keeping an eye on resources. The task is to build a mechanical vehicle which will be controlled through the android application which will be linked or connected to the remote of the camera for observation purposes. The camera which is attached on the robot it will continuously or transmits the data by special feature of CCD camera which is night vision competencies. This robot is a very useful application in the battle ground or war fields in form of spying purposes as an agent. As in this research paper, existing system is discussed where global system for mobile (GSM) built mobile robot and Dual tone multi frequency build robot (DTMF) was used, these robots have realistic drawbacks for example, more vitality or energy is acquired to the system, the robot and the controlling unit must be in pathway, for various Mobile phones, the control unit must be reassembled so that the movement of the system is subordinate to cell phone. To end this requisite with a final goal, this research paper presents a voice over android application via Bluetooth connection.

In this exam control on both remote correspondence between the versatile robots Android GUI application has been achieved. This framework can also be created by upgrading the execution and adding highlights. The improvement of this framework depends on the application used there. The frame may include highlights such as gas sensor, thermal image recognition, automated arm connection, and may be used in pick-and-place and so on should be possible. The improvement of this framework has been achieved by wide application zones, for example in army and legal authorization and industrialized and mischance organization criteria correspondence between the versatile robot Android GUI applications has been achieved. 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.

3. WORKING

We needed a compact robotic vehicle operated from anywhere in the world Very small and efficient radar system which can send data to internet in real time. This type of robots will be used for surveillance purpose for army, and for remote areas. After considering problem statement we are making a spy robotic vehicle controlled from mobile app on which we will mount a radar system and various sensor like Human detection etc. In the age of artificial intelligence, robots will soon represent a large part of the armed forces, according to the UK's chief of the deffence staff Nick Carter, who predicted that up to a quarter of the army could be made up of autonomous systems in the near future.



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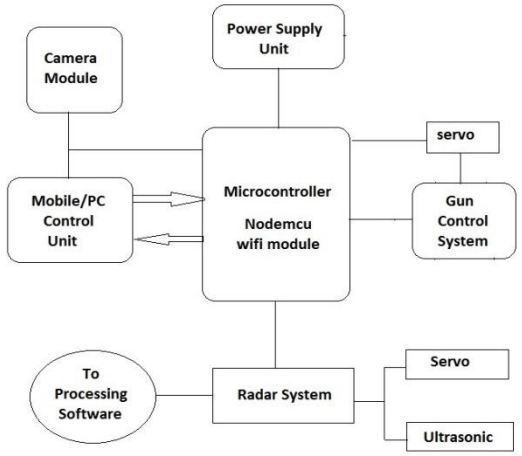
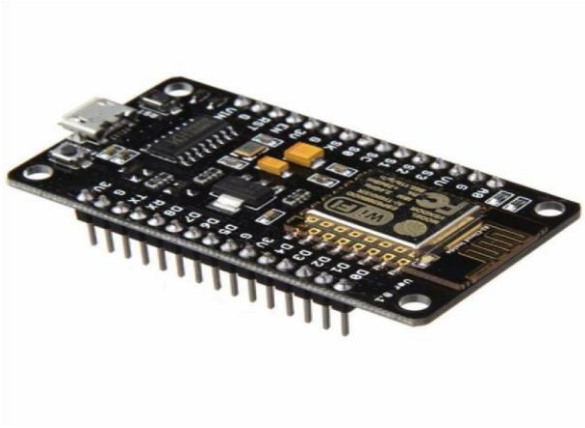


Camera Module, Radar, Weapon System

Arduino Uno- The Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and developed by Arduino.cc. The board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits. The board has 14 digital I/O pins (six capable of PWM output), 6 analog I/O pins, and is programmable with the Arduino IDE (Integrated Development Environment), via a type B USB cable. It can be powered by the USB cable or by an external 9-volt battery, though it accepts voltages between 7 and 20 volts. It is similar to the Arduino Nano and Leonardo. The hardware reference design is distributed under a Creative Commons Attribution Share-Alike 2.5 license and is available on the Arduino website. Layout and production files for some versions of the hardware are also available. The word "uno" means "one" in Italian and was chosen to mark the initial release of Arduino Software. The Uno board is the first in a series of USB-based Arduino boards; it and version 1.0 of the Arduino IDE were the reference versions of Arduino, which have now evolved to newer releases. The ATmega328 on the board comes preprogrammed with a bootloader that allows uploading new code to it without the use of an external hardware programmer. While the Uno communicates using the original STK500 protocol, it differs from all preceding boards in that it does not use the FTDI USB-to-serial driver chip. Instead, it uses the Atmega16U2 (Atmega8U2 up to version R2) programmed as a USB-to-serial converter.

NodeMCU- NodeMCU is an open source firmware for which open source prototyping board designs are available. The name "NodeMCU" combines "node" and "MCU" (micro-controller unit).The term "NodeMCU" strictly speaking refers to the firmware rather than the associated development kits.[citation needed] Both the firmware and prototyping board designs are open source.The firmware uses the Lua scripting language. The firmware is based on the eLua project and built on the Espress if Non-OS SDK for ESP8266. It uses many open-source projects, such as lua-cjson and SPIFFS. Due to resource constraints, users need to select the modules relevant for their project and build a firmware tailored to their needs. Support for the 32-bit ESP32 has also been implemented. The prototyping hardware typically used is a circuit board functioning as a dual in-line package (DIP) which integrates a USB controller with a smaller surface-mounted board containing the MCU and antenna. The choice of the DIP format allows for easy prototyping on breadboards. The design was initially based on the ESP-12 module of the ESP8266, which is a Wi-Fi SoC integrated with a Tensilica Xtensa LX106 core, widely used in IoT applications (see related projects).



PIR Sensor: A passive infrared sensor (PIR sensor) is an electronic sensor that measures infrared (IR) light

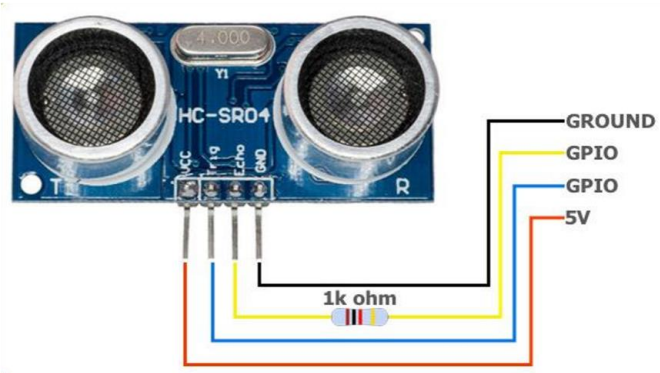
radiating from objects in its field of view. They are most often used in PIR-based motion detectors. PIR sensors are commonly used in security alarms and automatic lighting applications. PIR sensors detect general movement, but do not give information on who or what moved. For that purpose, an imaging IR sensor is required.

PIR sensors are commonly called simply "PIR", or sometimes "PID", for "passive infrared detector". The term passive refers to the fact that PIR devices do not radiate energy for detection purposes. They work entirely by detecting infrared radiation (radiant heat) emitted by or reflected from objects.

Servomotor: A servomotor is a rotary actuator or linear actuator that allows for precise control of angular or linear position, velocity and acceleration.[1] It 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.Servomotors are not a specific class of motor, although the term servomotor is often used to refer to a motor suitable for use in a closed-loop control system.Servomotors are used in applications such as robotics, CNC machinery or automated manufacturing.

Camera: This Arduino camera comes with an F1.8/6 mm lens, it also supports AEC, AGC, AWB, ABF and ABLC, detailed specifications can be found below.It can be connected to most Arduino boards, although we'd recommend using our SPI Modules for better performances. Program requires the latest ArduCAM library and ArduCAM Shield_V2 shield and use Arduino IDE 1.6.8 compiler.

UltraSonic Sensor: This is the HC-SR04 ultrasonic distance sensor. This economical sensor provides 2cm to 400cm of non-contact measurement functionality with a ranging accuracy that can reach up to 3mm. Each HC-SR04 module includes an ultrasonic transmitter, a receiver and a control circuit.There are only four pins that you need to worry about on the HC-SR04: VCC (Power), Trig (Trigger), Echo (Receive), and GND (Ground). You will find this sensor very easy to set up and use for your next range-finding project.This sensor has additional control circuitry that can prevent inconsistent "bouncy" data depending on the application.



4. RESULTS

This spying robot can be modified and made it for prolonged ranged and can be make it more useful by consuming more operational procedures and modules like Wi-Fi module, raspberry pi. Future scope of this robot is very efficient it may have gas sensors to detect the harmful or hazardous gases in the surroundings. It can also be used as bomb diffuser and bomb disposal

team can also use these type of robot in many ways and reduces the risk factor of human loss. Further, a terminating framework can be set on the robot, to fire any foe when he is spotted. The innovation can be enhanced further by offering directions to accepting circuit and control it by utilizing satellites correspondence. It will utilized in shopping centers for pickup, drop trolleys and car vehicle painting. Likewise, the framework can be made android based, where all controlling should be possible through an advanced mobile phone. There is a light called halogen light which is useful for the camera's vision which is attached on the robot. This robot can also be controllable by giving commands through voice it will response to the voice commands also.

5. CONCLUSION

Every day our army soldiers will walk into the death, they will keep their life at risk to save our lives. So I wanted to give them or help them giving something that will reduce their risk. That something is my project war field spy robot. The essential point of view of the military reconnaissance robot should make it straightforward. The administration operator robot can move without quite a bit of a track, getting pictures and transmitting them remotely, at that point the warriors give a recommendation about the dangers and conditions in the field of war. The robot moves relying upon the engines, which are reliant on the data we give about the transmitter (remote). RF signals are utilized as control signals. By utilizing these characters, the coding is done and signal is sent by the sender. At the beneficiary end, this decoded banner is given as a commitment to the drive of the engines. The robot is utilized for brief detachment and along these lines ensures the wellbeing of the territory. This makes the powers see precisely what's going on in the encompassing locale and to set it up as it ought to. With the assistance of this proposed advancement, there is some help for our security controls in area of interloper. This mechanized structure can likewise be utilized in high height territories where it is troublesome for people, as a feature of our edges fall into high elevation areas. The proposed computerized structure can likewise be utilized in the look for the harmed individuals amidst disasters.

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