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 ijirset@gmail.com

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Spy Robot with Wireless Camera Using Android Application

Prof .Mr. Omkar Dike¹, Mayuresh Palkar², Pankaj Shinde³, Shivkumar Malavade⁴

Assistant Professor, Department of Information Technology, Finolex Academy of Management and Technology,
Maharashtra, India¹

UG Student, Department of Information Technology, Finolex Academy of Management and Technology, Ratnagiri,
Maharashtra, India^{2,3,4}

ABSTRACT: Nowadays, the technological and digital world is developing very fast. Everything is getting smart, so we are talking about the technological world the devices like home appliances and other things are getting controlled by mobile applications. So these technologies should also be used in warlike conditions. The main objective for developing the robot is for the surveillance of human activities in the war field or rescue operations to reduce attacks or harm to human life. This research paper proposes a design and implementation of a mobile-controlled robotic car. The robotic car consists of a wireless camera that can transfer the situation or condition through video or in image format and prevent any further damage. The Army soldiers have a risk on their life while entering unknown places. The robot will serve as a useful machine for the defense sector to reduce the loss of human life and will also prevent illegal activities. It can help all the armed forces in any situation before entering another territory. This can also be used in various rescue operations to know the situation. The main advantage of this project is that we can easily control it through the mobile application.

I. INTRODUCTION

Robots can be autonomous or semi-autonomous, they have replaced humans in performing repetitive and dangerous tasks which humans prefer not to do, or are unable to do because of size limitations, or which take place in extreme environments such as outer space or the bottom of the sea. A robot is a machine, especially a computer carrying out a complex series of actions on human commands. Earlier the robots were controlled through attached wires but now to make robots more user friendly, they are framed to work on user commands. To collect these commands through signals we need a radio frequency receiver. The receiver collects and decodes the received signals before feeding them to the microcontroller to drive the DC.

motors via motor drivers. The wireless camera (Arduino camera module) is for spying purposes and the camera is movable in all directions. The different applications are carried out by smartphone via application. Smartphone transmits the commands and data to the 8051 controller and controls the motor by the motor driver.

II. LITERATURE REVIEW

The main idea to construct this robot is for spying purposes, it to keep an eye on the battleground or the war days to reduce the chances of takeovers from the enemy side. Army people or entities have to face many dangers in their life while spying on the enemy or opposite entities. To overcome these ideas for this job robots will be more suitable and will decrease the risks of loss of human lives and can better spy on their opposite entities. Before entering any doubtful places we can send robots to check the status of that field so the military or army individuals don't need to risk their lives. These types of robots will be constructed in such a way that they would have a night vision camera mounted on them so in the darker places or at the night they can record the view. The camera will be controlled through a remote by using an android application. Nowadays many people can construct an android application without any trouble. For communication we need to use some modules, if we use a Bluetooth module it won't be much efficient for long ranges as the Bluetooth communication is weak not that strong. There are many different modules with different specifications. The future scope of this robot is very vast, as it will continue to modify with time. In this spy robot, we can also do modifications for defusing bomb situations, identifying landmines, etc.



III. AIM AND OBJECTIVE

1. The robot consists of a night vision wireless camera which can transmit videos of the war field to prevent any damage and loss to human life.
2. This robot is for the surveillance of human activities in the war field or border regions to reduce infiltrations from the enemy side.

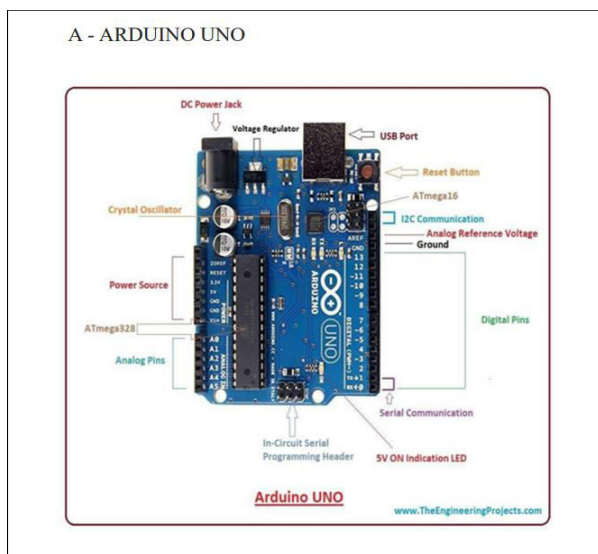
IV. HARDWARE AND SOFTWARE REQUIREMENT

Software Requirement:

- Windows 8,10. 32 bit /64 bit and 4gb /8gb ram

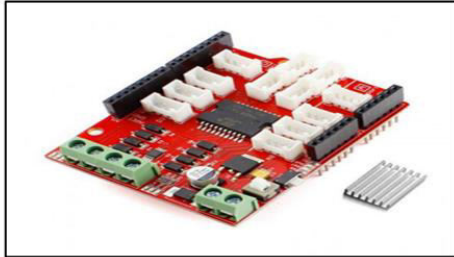
Hardware Requirement:

- Arduino UNO Microcontroller
- PIR sensor(Passive Infrared Sensor)
- Ultrasonic sensor
- Light Dependent Resistor(LDR)
- Arduino Camera Module
- Solar cells for power supply
- 2D motors of 600 rpm
- Rubber wheels
- Wooden thick plywood in pieces
- Motor Driver Module
- Motor Driver Shield

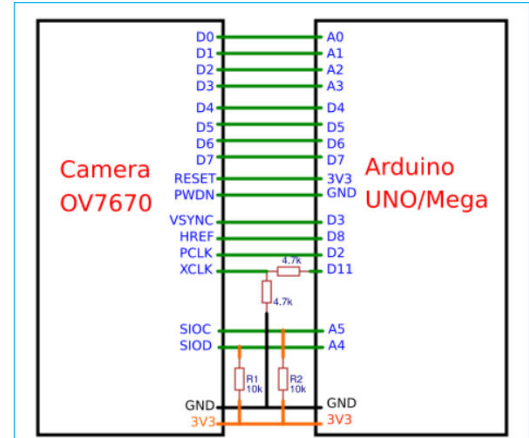




B - MOTOR BASED SHIELD

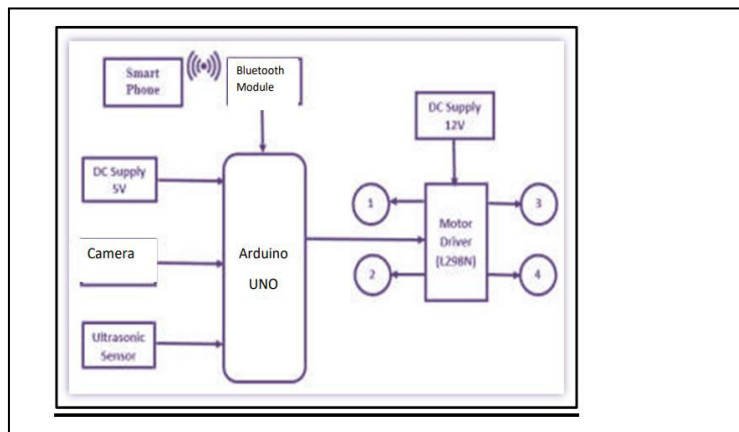


C - Connection between camera and Arduino



V. IMPLEMENTATION DETAILS

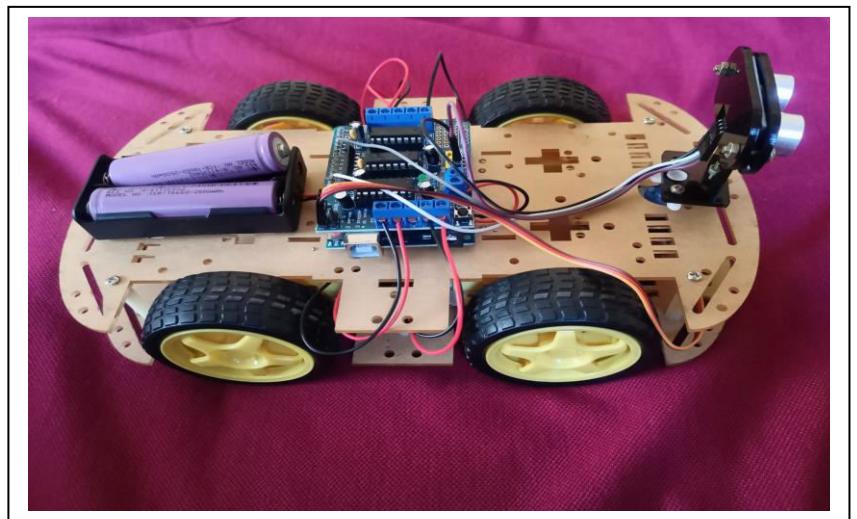
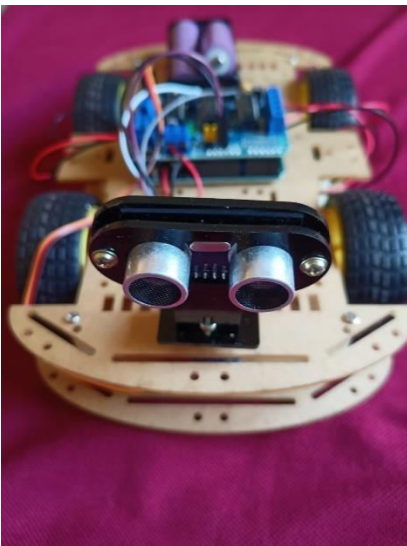
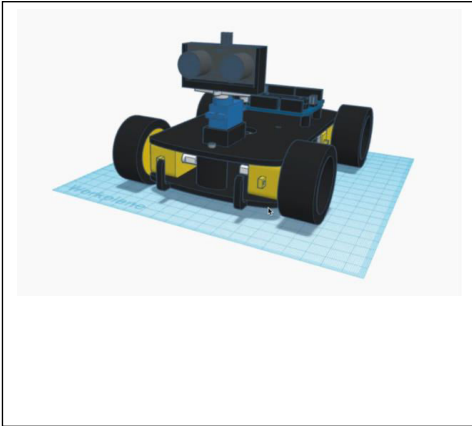
The following diagram represents the algorithm flowchart of how our project is going to work .i.e how it is going to work and the connections between different modules. Here it is shown how the connections are made between different hardware used. First of all dc 5v supply is given to the Raspberry Pi. Also various hardware like the pi camera different sensors and motor driver module. And 12 v dc supply is provided to the motor driver module.



VI. CONCLUSION

The robot is designed to move by our command and also on its own according to the command given by the program. The video and audio are monitored at the control unit. * In this prototype project, we design it in such a way that this robot can be moved anywhere and can get the information of a particular place. * It is easy to detect any faults or dangers in the industry. It leads easy process without the interaction of humans. An alerting message will be sent to a prescribed SIM using the GSM module. This project is very much useful in places where a human cannot go into the places like ground canals, smoke oriented caves and this project is very much useful in such situations.

VIII. RESULT



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