

RECONNAINCE DRONE

Nitesh Ramakrishnan¹, Mithran J², Chappa Sai Chaitanya³, Srikanth A K⁴, Akash Dutta⁵,
Elakya R⁶

¹ Student, Department of Computer Science, SRM Institute of Science and Technology, Tamil Nadu, India.

² Student, Department of Computer Science, SRM Institute of Science and Technology, Tamil Nadu, India.

³ Student, Department of Computer Science, SRM Institute of Science and Technology, Tamil Nadu, India.

⁴ Student, Department of Computer Science, SRM Institute of Science and Technology, Tamil Nadu, India.

⁵ Student, Department of Computer Science, SRM Institute of Science and Technology, Tamil Nadu, India.

⁶ Assistant Professor, Department of Computer Science, SRM Institute of Science and Technology, Tamil Nadu, India.

ABSTRACT

This project is an obstacle avoidance that we have achieved with the help of an ultrasonic sensor which is mounted on a Servo Motor and the whole connection is given to an Arduino board. The L298N Bridge is used to control the two Motors which drive the whole apparatus, this whole apparatus is powered by two nine volt batteries. One is used to cover the Arduino and the other is used to cover the two individual Motors. The two Motors have an rpm of thousand so as to ensure that the Drone is able to move in an orderly fashion. Arduino is an open source computer hardware and software company, project, and user community that designs and manufactures single-board for building digital devices and interactive objects that can sense and control objects in the physical world. The project's products are distributed as open-source hardware and software, which are licensed under the GNU Lesser General Public License (LGPL) or the GNU General Public License (GPL), permitting the manufacture of Arduino boards and software distribution by anyone. The coding is uploaded into the system via ordinary and by connecting the Arduino board to the computer via USB cable.

Keyword: - Remote control, Smart car, Arduino, Drone.

1. INTRODUCTION

RADAR is an object detection system which uses radio waves to determine the range, altitude, direction, or speed of objects. Radar systems come in a variety of sizes and have different performance specifications. Some radar systems are used for air-traffic control at airports and others are used for long range surveillance and early-warning systems. The main objective of this project is to create a surveillance drone that is economically and practically feasible the drone. The main objective of this drone used for a fuse in military purposes so that it can go behind Enemy Lines and catch a glimpse of what is behind those lines without putting our soldiers in arms way.

A mobile robot system, capable of performing various tasks for the physically disabled, has been developed. To avoid collision with unexpected obstacles, the mobile robot uses ultrasonic range finders for detection and mapping. The obstacle avoidance strategy used for this robot is described. So this strategy depends heavily on the performance of the ultrasonic range finders and sensors.

2. EXISTING SYSTEM

The obstacle detection drone prototype is the inspiration for our project. This drone which has fixed camera, strafing enabled wheels and stabilizing arm and also stair climbing assist. This brought us the attention to improvise with more stability and reliability. These types of drones can be used by military purposes for better precautions which possibly could happen with the help of RECONNAINCE DRONE.

3. PROPOSED SYSTEM

This can be done by using simpler way to work with our Prototype Drone by using ARDUINO, RADAR, ULTRASONIC SENSOR, SERVOMOTOR, L298N H-Bridge Motor Controller, Robot Car Chassis, Male to Male Jumper Wires (M to M Wires), Female to Male Jumper Wires (F to M Wires), 12V Battery (for DC Motors), Mini Breadboard and any Android Device. This can be done with cost efficient and prototype will be done. It has fixed camera on the top of the drone for the visibility of other side of the track. It has strafing enabled wheels which it is help to take the direction according to the command which we give. It has Stair Climbing Assist. This is used to take further places like hills and hard terrains for the hidden visuals. This is especially for Military purpose which is very handy to the Military people.

4. DESIGN

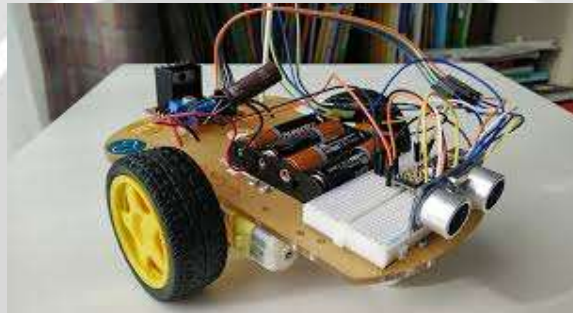


Fig -1: Model of the drone

5. WORKING

This project is an obstacle avoidance that we have achieved with the help of an ultrasonic sensor which is mounted on a Servo Motor and the whole connection is given to an Arduino board. The L298N Bridge is used to control the two Motors which drive the whole apparatus, this whole apparatus is powered by two nine volt batteries. One is used to cover the Arduino and the other is used to cover the two individual Motors. The two Motors have an rpm of thousand so as to ensure that the Drone is able to move in an orderly fashion. Arduino is an open source computer hardware and software company, project, and user community that designs and manufactures single-board for building digital devices and interactive objects that can sense and control objects in the physical world. The coding is uploaded into the system via ordinary and by connecting the Arduino board to the computer via USB cable.

6. MERITS

- It has fixed camera on the top of the drone for the visibility of other side of the track.
- It has strafing enabled wheels which it is help to take the direction according to the command which we give.
- It has Stair Climbing Assist. This is used to take further places like hills and hard terrains for the hidden visuals. This is especially for Military purpose which is very handy to the Military people.

7. ARCHITECTURE DIAGRAM

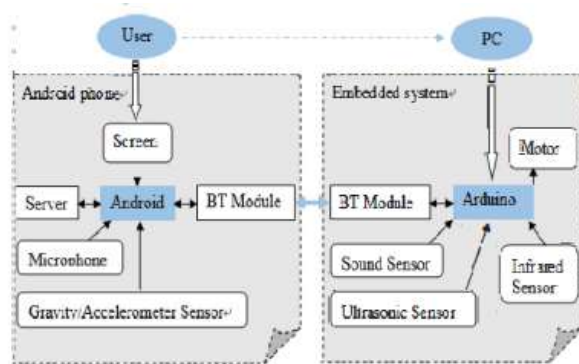


Fig -2: System Architecture

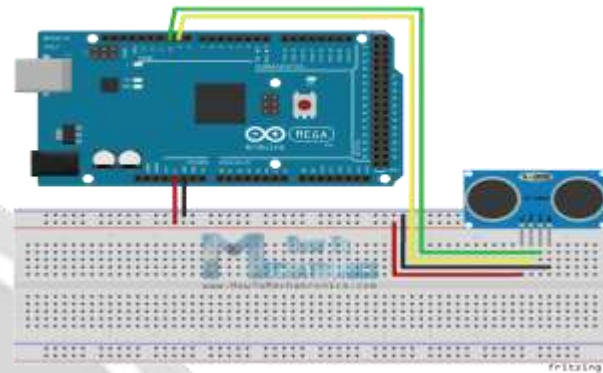


Fig -3: Arduino Architecture

8. CONCLUSION

The project "RECONNAISSANCE DRONE" has been successfully designed and tested. Integrating features of all the hardware components used have developed it. Presence of all reasoned out and placed carefully thus contributing to the best working. Hence this project provides best solution for the places of low visibility, to locate landmines in warzones, to identify and help survivors from Natural disasters.

9. FUTURE WORK

- More power and compact ultrasonic sensor.
- A high power low volume battery for better distance coverage.
- Improvement in solar panel tech for better recharge capability.

10. REFERENCES:

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