

# Voice Control Robot Using Arduino

Mr. Manoj Jalindhar Narale<sup>1\*</sup>, Mr. Vivek Vitthal Pandhare<sup>2</sup>, Mr. Ganesh Tukaram Jagdale<sup>3</sup>, Prof. Bhosale A. K.<sup>4</sup>

<sup>1,2,3,4</sup> Dept of Electrical Engineering

<sup>1,2,3,4</sup> SMSMP Institute of Technology & Research, Akulj, India

**Abstract-** This robotic is designed to control vehicle by using human voice command through Bluetooth module. Voice Control Robot is used to complete specific commands like Forward, Backward, Stop, Left, Right and dancing (or rotation of robot) etc. Voice Control Robot is based on Speech Recognition. The commands are given to robot using Android application. The Android application “Arduino Bluetooth Voice Control” is connected to Bluetooth Module (HC – 05), which is directly connected to Arduino Uno R3. We give command to the robot and it performs work according to the given command. Voice Control Robot is much useful for those areas where humans can't reached. Robot can work in all type of situations like toxic area, in fire situations, polluted area and also on hills. This robot is very useful for those who is physically handicapped. This robot is very small in size so we can use this project for spying or espial. If we implement in this project so we can use this robot in military application, agriculture purpose, industrial purpose and also for surveillance device.

**Keywords-** Voice Robot, Robot Control By Voice Command, Arduino Robot.

## I. INTRODUCTION

The robot basically works on human speech command. The Voice Control Robot is controlled by using voice command which is directly given by user to the robot. We can say, this is a wireless robot. The android application is installed in smartphone which works as a transmitter. The commands are given by this android application. The android application “Arduino Bluetooth Voice Control” is use to recognize the Arduino using a Bluetooth link. The Bluetooth module (HC-05) which is connected to the Arduino. As we know that Arduino is programmable, so we have to do the programming using C or Java Language.

Voice control robot is just a practical example of controlling motions of a simple robot by giving daily used voice commands. In this system, an android app is used as a medium for the transmission of human commands to microcontroller. A controller can be interfaced with the Bluetooth module through the UART protocol. The speech is received by the android app and processed by the voice module. Voice is then converted to text. The microcontroller

will further process this text, which will take suitable action to regulate the robot. The objective is to design a robotic car whose basic movements such as moving forward, turning to left or right can be controlled by the human voice.

The rest of the paper is organized as follows, Section I contains the introduction of ‘Voice Control Robot Using Arduino’. Section II deals with the literature survey consisting of the existing work. Section III deals with the proposed system. Section IV contains the objective of our system. Section V describes the conclusion.

## II. LITERATURE SURVEY

K. Kannan, Dr. J. Selvakumar author describes In 2003, Worldwide speculation in modern robots up 19%. In 2004, orders for robots were up another 18% to the highest level ever recorded. Overall development in the period 2004-2007 conjecture at a normal yearly pace of about 7%. More than 600,000 family unit robots being used several millions in the next few years. Various researches have been made by different researchers in developing this project. Be that as it may, they serve an alternate application and have various innovations actualized. Some of those papers are mentioned below stating their technology and application.

Mrumal K Pathak, Javed Khan, Aarushi Koul, Reshma Kalane Raunak Varshney The motivation behind of this author paper is to furnish amazing computational android stages with less difficult robot equipment design. This paper depicts how to control a robot utilizing portable through Bluetooth communication, a few highlights about Bluetooth innovation, segments of the versatile and robot. It present an audit of robots constrained by smart phone by means of moving the robot upward, reverse, left and right side by the android application, for example, Arduino, Bluetooth.

Aniket R. Yeole, Sapana M. Bramhankar, Monali D. Wani, Mukesh P. Mahajan. author have structured a robot that can be controlled using an application running on an android smartphone. It sends control order by means of Bluetooth which has certain highlights like controlling the speed of the engine, detecting and sharing the data with telephone about the bearing and separation of the robot from the closest hindrance.

RitikaPahuja, Narender Kumar. Authors describes in this paper a robot is normally an electro-mechanical machine that is guided by PC and electronic programming. Numerous robots have been worked for producing reason and can be found in production lines around the globe. This paper build up the remote fastens in the android application which control the robot movement with them. What's more, in which Bluetooth communication is use to interface controller and android. Controller is interfaced to the Bluetooth module however UART convention.

S R Madkar, Vipul Mehta, NitinBhuwania, MaitriParida This authors, deliberate how to control robot controlled vehicle utilizing Wi-Fi module through android application of an android Smart Phone. It is additionally show that the apparatuses can be controlled even without an android telephone by sending an ordinary SMS. This task can be adjusted effectively to incorporate a covert agent camera too that can stream the recordings to the client over Wi-Fi. Sunlight based cells are rather than the customary lithiumion battery for the venture.

### III. PROPOSED SYSTEM

The simple voice controlled robotic vehicle is given it consists of the smartphone that recognizes the voice commands and are being wirelessly transferred to the Bluetooth module HC05. The module at that point changes over the order to content and the series of characters are sent to the Arduino for additional handling. The Arduino microcontroller decodes the string got and correspondingly performs further capacities. The signals are sent to the motor that hence powers and drives the motors connected to it. On the Transmitter area, commands are given to the Mobile Application through the mic. This portable handset is associated with the moving vehicle by means of Bluetooth module.

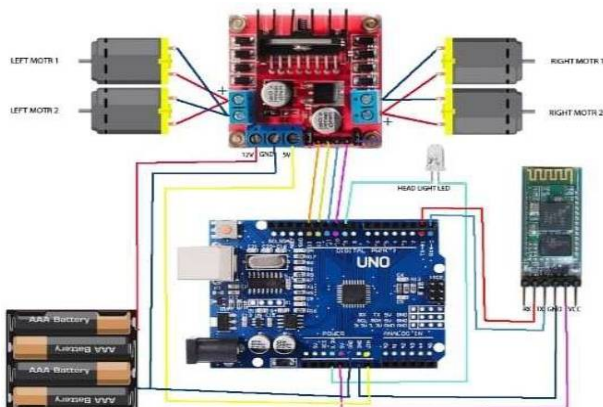


Fig. Circuit Diagram

The portable application utilized, is modified so that the voice orders given to the handset are received by the mic and these simple voice orders are changed over to advanced word successions (A to D transformation). These stored sequences are than transmitted to the robotic vehicle via Bluetooth transceiver module and are sent to the transceiver controller. Android application transceiver is used to decode the received signal with the Bluetooth module. The controller contrasts these signals and the put away program orders in it and convert them into voice strings. The voice strings are then used to run the servo engines for the ideal interval of time. The microcontroller, sends directions, which when executed, helps in working.

#### A. Applications:

1. By commanding the robot, we can use this robot for that places where human can't reach like fire situation, highly toxic area, hills etc.
2. We can use this robot as speech recognition security system.
3. We can use this robot for military purpose.
4. We can use this robot for those people who is physically handicapped
5. We can use this robot for agriculture purpose.
6. We can use this robot to bring and place small object.

#### B. Advantages:

1. It is easy to use.
2. It work on simple voice command.
3. The size of this robot is small.
4. It is user friendly.
5. It reduce man power.
6. Low power consumption.
7. Reliable, low cost.
8. Accident can be also avoided by using this robot.

### IV. OBJECTIVES

The main goal of this project is to develop By commanding the robot, we can use this robot for that places where human can't reach like fire situation, highly toxic area, hills etc.

The project is designed to develop an due to voice application based here "Arduino Bluetooth Voice Control" is use to recognize the Arduino using a Bluetooth link.

## V. CONCLUSION

The voice controlled robot is an easy programmable (software) project. This project operated on human voice command with android application. The implementation of this project is easy, so this robot is beneficial for human life. The Voice Control Robot is useful for disable people and monitoring purpose. It works on simple voice command, so it is easy to use. It is useful for those areas where humans can't reach. We can implement Image processing in this robot, so that we can detect the color of the object or targeted system. The size of this robot is small, so we can use this robot for spying purpose. It can be used for surveillance. We can implement web cam in this robot for security purpose. The voice recognition software has an accuracy of 76% for identify a voice command and it is also highly sensitive to the surrounding noise.

Robotic System Using Arduino Microcontroller” Ijntr, Volume-3, Issue-4, April 2017.

## REFERENCES

- [1] K. Kannan<sup>1</sup>, Dr. J. Selvakumar<sup>2</sup> “Arduino Based Voice Controlled Robot” Ijett, Volume: 02 Issue: 01 March – 2015, Pp.49
- [2] Nelson Rai<sup>1</sup>, Deepak Rasaily<sup>2</sup>, TashiRapden Wangchuk<sup>3</sup>, Manoj Gurung<sup>4</sup>, Rit Kr. Khawas<sup>5</sup> “Bluetooth Remote Controlled Car Using Arduino” Ijett, Volume-33 , Number 8- March 2016
- [3] Prof. Bhuvaneshwari Jolad<sup>1</sup>, Mohnish Arora<sup>2</sup>, Rohan Ganu<sup>3</sup>, Chetan Bhatia<sup>4</sup> “Voice Controlled Robotic Vehicle” Irjet, Volume: 04, Issue: 06, June-2017.
- [4] Ayan Maity<sup>1</sup>, Avijit Paul<sup>1</sup>, Priyanka Goswami<sup>2</sup>, Ankan Bhattacharya<sup>1</sup> “Android Application Based Bluetooth Controlled Robotic Car” Ijiis, Volume-6, Number-5 November 29, 2017.
- [5] Arti Paswan<sup>1</sup>, Ajay Kumar Gautam<sup>2</sup>, Bhartendu Vimal<sup>3</sup>, Farheen<sup>4</sup>, Arun Kumar Mishra<sup>5</sup> “Voice Controlled Robotic Vehicle” Ijsrr, Volume 07, Issue03, March 2019.
- [6] P R Bhole<sup>1</sup>, N L Lokhande<sup>2</sup>, Manoj L Patel<sup>3</sup>, V D Rathod<sup>4</sup>, P R Mahajan<sup>5</sup> “Voice Command Based Robotic Vehicle Control” Ijraset, Volume 5, Issue Xi, November 2017.
- [7] VineethTeeda, K. Sujatha, RakeshMutukuru “Robot Voice A Voice Contolled Robot Using Arduino” Ijeat, Volume-5, Issure-6, August-2016.
- [8] Yasir Ali Memon<sup>1</sup>, Imaaduddin Motan<sup>2</sup>, Muhammad Ali Akbar<sup>3</sup>, Sarmad Hameed<sup>4</sup>, MoezUl Hasan<sup>5</sup> “Speech Recognition System For A Voice Controlled Robot With Real Time Obstacle Detection And Avoidance” Ijeedc, Volume-4, Issue-9, Sep. – 2016.
- [9] Mr. VedantChikhale, Mr. RavirajGharat, Ms. ShamikaGogate, Mr. RoshanAmireddy “Voice Contolled