International Journal of Innovative Research in Computer and Communication Engineering

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | Impact Factor: 7.194 |

|| Volume 8, Issue 4, April 2020 ||

Hand Gesture Controlled Robot for Military and Paralyzed Patients

Ansari Arif Akbar[1], Piyush Gokhale[2], Zeeshan Dasurkar[3], Prof. Nargis Shaikh[4]

B.E. Student, Department of Computer Engineering, Rizvi college of Engineering, Bandra, Mumbai, India[1,2,3]

HOD, Department of Electronics, Rizvi college of Engineering, Bandra, Mumbai, India[4]

ABSTRACT: Gesture Controlled Car is a robot which can be controlled by simple human gestures. The user just needs to wear a gesture device in which a sensor is included. The sensor will record the movement of hand in a specific direction which will result in the motion of the robot in the respective directions. The robot and the Gesture instrument are connected wirelessly through radio waves.In this project we are going to use hand gesture to control robot which will move in various directions with the help the hand gestures.This robot can also be used as wheel chair for handicapped or paralyzed , spybot, milatary purpose to plant bombs or to supply the machines etc.We will use accelerometer(MMA7455) to detect or to take readings for gestures.We will connect the accelerometer with arduino nano which is a microcontroller and which can perform any action as user commands. Accelerometer will control car to move in particular direction.

KEYWORDS: Arduino Nano, Accelerometer, Hand gesture, Bluetooth.

I. INTRODUCTION

Now a days robots are used in various sectors such as in automobile industries,factories to save money,time etc.They are also used in home automation to enhance the way of living.By using this robot we can control it by using our gestures.It will react as the instructions or the gestures it reads which is given by the user.Here robot will wait for the connection.The robots travel by motion made by the user hand tilting. The objective of this wireless control device is achieved using Arduino, accelerometer, and HC-05(Bluetooth module). The Arduino microcontroller receives the analog input values (x axis, y axis) from the accelerometer and converts that analog value to digital value.Here robot will wait for the connection.As soon as the connection is establish they will be divided into two section i.e transmitter and reciever.Transmitter will be situiated on tyhe hand and it will contain arduino nano,accelerometer and master bluetooth. Accelerometer will read the gesture by its coordinate and transmit using bluetooth.Receiver will read and perform the action.

II. RELATED WORK

The techbox is using for progrmming and control gesture robot is a time spending that apply for technical knowledge . So for make more inovative approach for programming and control gesture robot car in robotics many reserch effort. Have been made design user friendly the main implementation to interface the user such as controlling car but this type of technology are not efficient to control the robot as they not have proper result and the timing is slow.in the last to last year in designing or manufacturing of robot have made effort for implementing human machine interface device .

Using gesture implementation concept to move a robot. Very reasonable motion sensitivity in different application Accelerometer are the main technology. useful for human machine interfaction this type of technology makes easy and clear for human to interact with machine in such a manner

III.DESIGN

Fig.1 shows the transmitter circuit which will be on hand gloves. In this diagram the module will be on idle until it get connection.When it will establish connection with the receiver it will read the coordinates using accelerometer. When it reads the coordinates it will encode the value. As the value gets encoded it will be sent through Bluetooth arduino nano.

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | Impact Factor: 7.194 |

|| Volume 8, Issue 4, April 2020 ||

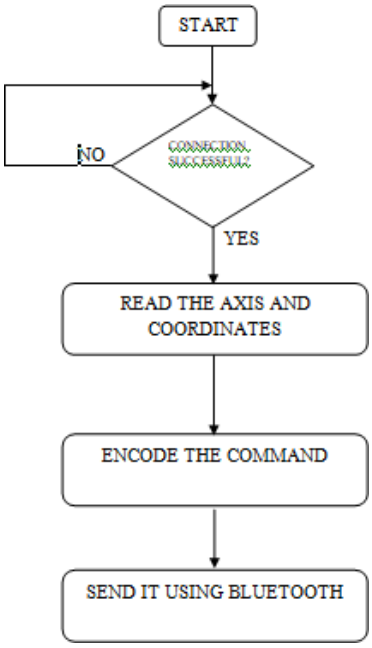

FIG 1: Transmitter Algorithm

Fig 2. shows how the receiver module will work. As soon as connection is established it will wait for the encoded command which will be sent from the tramistter. Bluetooth will receive the encoded code. Arduino will decode the code and it will give command to motor driver(L298N) which is responsible for the movement of the car.

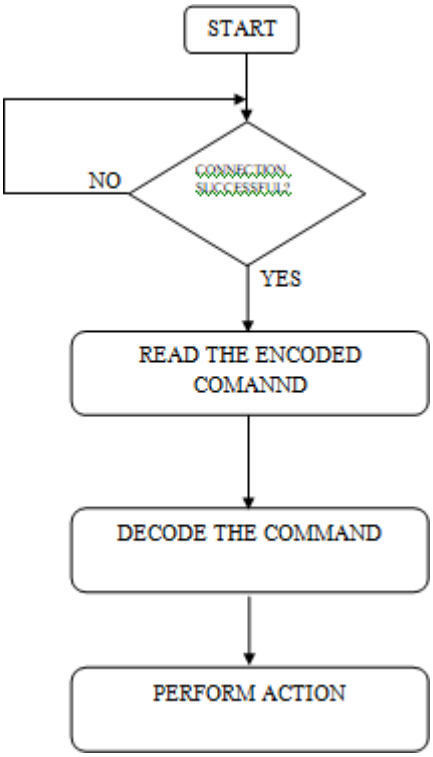

FIG 2. Receiver Algorithm

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | Impact Factor: 7.194 |

|| Volume 8, Issue 4, April 2020 ||

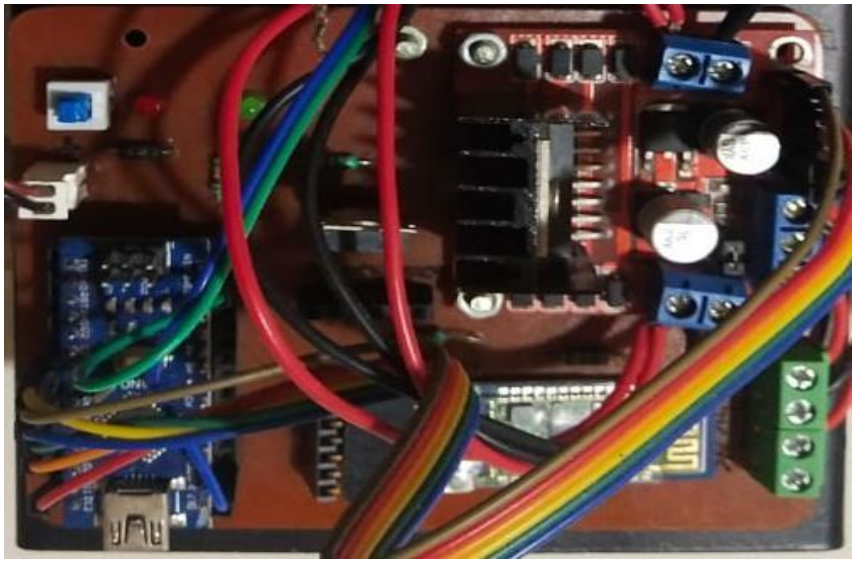

FIG 3. Receiver Circuit Board

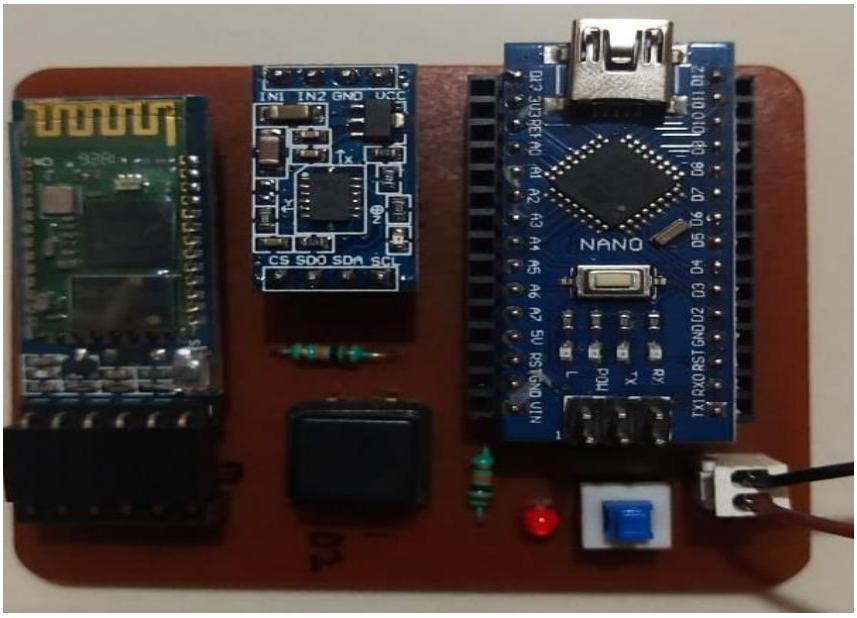

FIG 4. Transmitter Circuit

IV.CONCLUSION AND FUTUREWORK

Hand gesture robot is an example of artificial intelligence. With the help of hand gesture it becomes easier to control any thing and it is also stable. We have proposed the methodology for this robot. In future we are going to implement this project by actually designing it in an appropriate manner.

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | Impact Factor: 7.194 |

|| Volume 8, Issue 4, April 2020 ||

V.RESULTS

Test case	Test Case Name	Output	Result
TC1	Car move right	Moving right	pass
TC2	Car move left	Moving left	pass
TC3	Car move back	Moving back	pass
TC4	Car move front	Moving front	pass
TC5	Car stop	stop	pass

REFERENCES

[1] https://store.arduino.cc/usa/arduino-uno-rev3

[2] https://www.rakeshmondal.info/L293D-Motor-Driver

[3] www.ijsr.net Volume 4 Issue 3, March 2015

[4] http://www.instructables.com/id/Gesture-controlled-robot-using-Arduino/

[5] https://www.elprocus.com/accelerometer-based-gesture-control-robot/

[6] https://create.arduino.cc/projecthub/user206876468/hand-gesture-controlled-robot-4d7587

[7] https://www.slideshare.net/noufalnechiyan/hand-gesture-controlled-wheel-chair-56228325

[8] https://www.elprocus.com/h-bridge-motor-control-circuit-using-l293d-ic/