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Wireless Gesture Controlled Robot

Siddhi Khillare[1], Rupesh Waghmare[2], Raj Patil[3], Shubham Patil[3], Kranti Patil[4]

Department of Electronic and Telecommunication, Trinity Academy Engineering, Pune, India

ABSTRACT: Gesture recognition is a topic in computer science and language technology with the goal of interpreting human gestures via mathematical algorithms. Gestures can originate from any bodily motion or state but commonly originate from the face or hand. Current focuses in the field include emotion recognition from face and hand gesture recognition. Users can use simple gestures to control or interact with devices without physically touching them. Gesture recognition enables humans to communicate with the machine and interact naturally without any mechanical devices.
In today's era human-machine interaction is becoming widespread. So ,with the introduction of new technologies the gap between machines and humans is being reduced to ease the standard of living

I. INTRODUCTION

Gesture Recognition
Human gestures constitute a variety of motion expressed by the body which includes facial expressions and hand movements.
Among all the variety of gestures, hand gesture is the most expressive and the most frequently used and proves an excellent means for the physically disabled people as well .
In border to enable a more natural and easy communication with virtual reality systems ,automatic hand gesture recognition has proved to be an excellent means for the users having no technical knowledge as well.
Objectives
Conveniently control the To movement of the robot with hand gesture using accelerometer
Enable humans to communicate with the machine and interact naturally without any mechanical devices.

II.LITERATURE SURVEY/BACKGROUND

Rishank S Nair, Sadhana Kumar and N Soumya
The robotic arm has found numerous applications in an array of industries. They are designed in manner so as to ensure maximum flexibility and usability for its planned application.
Dr. R. V. Dharaskar S. A. Chhabria Sandeep Ganorkar proposed the human-robot voice interface plays a key role in many fields of application. Here they used voice interface in order to control the robot. Human hand gesture is exceptionally regular way of human communication which can be used appropriately in various situations.
Stefan Waldherr and Sebastian Thrun are proposed a movement interface for controlling a versatile robot with the help of hand gestures. Here they have used camera to follow the humans and to get the signals that include movement of the robot. However, it allows robot for trace ability purpose and to complete the regular work.
Rafiqul Zaman Khan and Noor Adnan proposed and showed a key issues of the hand gesture recognition framework. To get exact and appropriate values for recognition of the hand movement which has ability to interact with the PC applications.
Anala pandit proposed an essential wearable hand motion gadget utilizing establishment of clinical and early present day considers. Connecting with frameworks is finished with the assistance of contact and console. Here the individuals are conveying gadget, the natural imparting gadget and to collaborates to the gadget and the other apparatus. Successful cooperation.
Christian manery" embracing a wobot peculiar? Examining the impact of robot appearance on client's view of embracing". Robots can collaborate with people utilizing physical cooperation like embracing etc. In this the physical communication must be arranged cautiously as a clear framework which interface regularly and limit repugnance.
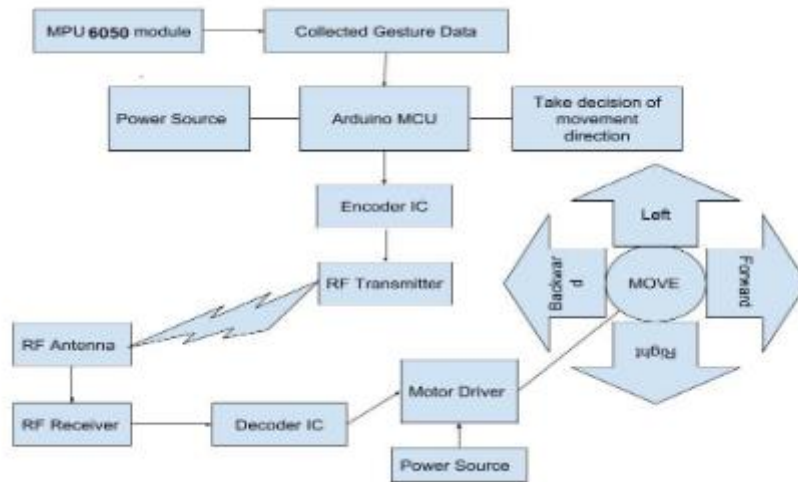
III. PROPOSED WORK /SYSTEM

Figure 1: flowchart of wireless gesture controlled robot

Hardware Design:
- MPU6050
- Arduino uno
- HT12E (Encoder)
- HT12D (Decoder)
- RF Pair
- L293D (Motor Driver)
- DC Motor (100 rpm)

Gyroscope's sensor senses the hand gesture movement from hand to microcontro MCU receives the data and make instructions for the robot. Encoded data transmits through the transmitter.In the receivers end the receiver receives the encoded Sends the instruction to the encoder IC.Receiver sends the encoded data to the decoder.Decoder decodes the data and sends to the motor driver.Motor driver drives the motor in all movements by following the instruction and gesturesfinally, the robot moves with the gestures.
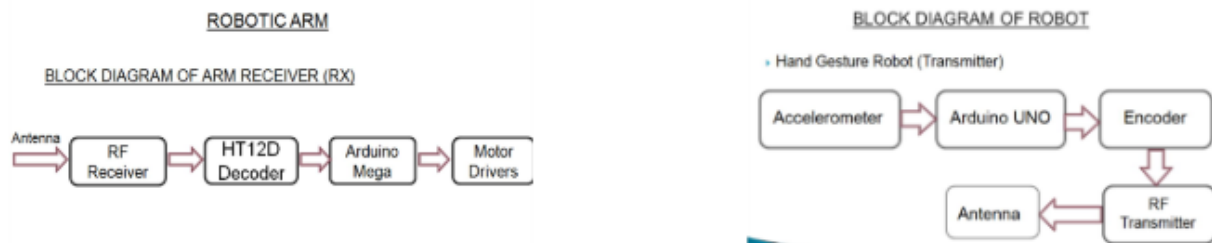
BLOCK DIAGRAM

Figure1: Block Diagram Of Face Detection And Reorganization Using Raspberry PI

IV. DISCUSSION

A Gesture Controlled robot is a robot which can be controlled by your hand gestures. You just need to have a small transmitting device in your hand, which included an acceleration meter to transmit an appropriate command to the robot so that it can do whatever we want.

V. CONCLUSION

In today's era human-machine interactionis becoming wide spread. So,with the introduction of new technologies the gap between machines and humans is being reduced to ease the standard of living. Gestures have played a crucial role in diminishing this gap. Our project is based on Arduino. In future this robot is useful in industries, for domestic purpose. The robot can constantly work without any error in its functioning. As we have included high range of transmitter and receiver, the controlling range of robot is wide rand sufficient to control. This hand gesture feature will help many physically disable people sand by using this robot we can save the time, it is very useful in military purpose.

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9940 572 462 6381 907 438 ijircce@gmail.com

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