



Voice Controlled Wheel Chair System Using Bluetooth

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ABSTRACT

The main objective of VOICE CONTROLLED WHEEL CHAIR SYSTEM project is recommended to control a wheel chair by using speech recognition. The system is designed to control a wheel chair using the voice of person. The objective of this project is to facilitate the movement of people, who are disable or handicapped and elderly people who are not able to move well. The goal of this system will allow certain people to live a life with less dependence on others for their movement as a daily need. Speech recognition technology is a key technology which will provide a new way of human interaction with machine or tools.

Key Words: Android Application ,Wheel chair, physically challenged, ultra sonic Sensor, voice command ,HC-05 Bluetooth module, DC motors ,Arduino UNO micro-controller.

INTRODUCTION

Voice Operated wheelchair is the modified version of the manual wheelchair. It is operated on the (i.e. commands such as forward, left, right, stop, etc.) voice of the patient. The wheelchair does not require any person to move it as it is automated with motors. Voice of an independent speaker is sent through the android app, which is paired to HC-05 and interfacing of the Arduino and HC-05 converts the voice signal sent with the help of L298D .

Driver motors are driven and hence the wheelchair moves in the direction directed from the independent speaker.

STATEMENT OF PROBLEMS

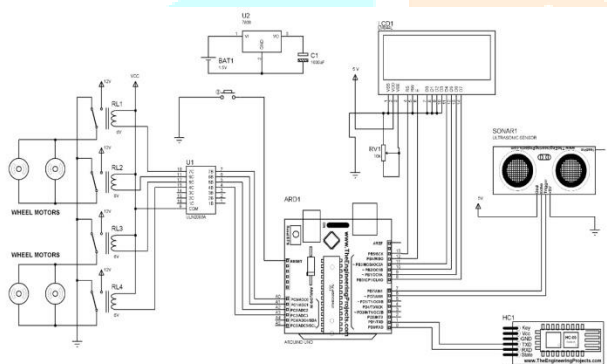
In worldwide context, it is estimated that 100-130 million people with disabled .Reasons for the physical disability can be

- 1) Genetic disorder such as dystrophy
- 2) COndition present at birth such as spinal bifida
- 3) Spinal cord or brain injury during accidents.

Wheel-chair is still the best transportati0n means f0r them.

Presently available manual wheelchairs require c0nstant assistance Of Others f0r people having severe disability and are at a high risk of injuries to the upper part of the body due to mechanical inefficiency of the wheelchair.

CIRCUIT DIAGRAM



WORKING

Here the input is taken from Android mobile, for which the speech signal has been converted into text with the help of Android .application. This text is transferred to a microcontroller that controls the movement of the wheelchair and the direction of the wheelchair wirelessly via a Bluetooth module. Determines the operation of two DC motors depending on the text received on the microcontroller.

The possible wheelchair movements and directions are given below.

1. Forward: Both motors are rotating forward.
2. Reverse: Both motors are rotating in the opposite direction.

3. Left: The motor on the left stops and the motor on the right is moving forward.

4. Right: The motor on the right stops and the motor on the left is moving forward.

5. Stop: Both motors are stopped.

RESULT

Voice operated wheelchair is the modified version of the manual wheelchair. It is operated on the voice control of patient (i.e. commands such as forward, left, right, stop, etc.)

The wheelchair does not require any pers0n t0 m0ve it as it is automated with motors. Voice of an independent speaker is send through the android app, which is paired to HC-05 and interfacing of the Arduino and HC-05 converts the voice signal sand with the help Of L298D Driver m0t0rs are driven and hence the wheelchair m0ves in the direction directed from the independent speaker.

ADVANTAGES

A handicapped person even with voice can use this and become Independent

Very rapidly changing input can be easily rec0gnized due t0 Andr0id m0bile.

Suitable f0r practical applicati0n as c0mpared t0 HM 2007.

Less Hardware require i.e. compact.
Reduce manpower.

CONCLUSION

The Arduino based v0ice c0ntr0lled wheelchair pr0t0type was successfully built and tested t0 respond t0 v0ice c0mmands. It will greatly impr0ve the quality Of life for th0se with severe disabilities. The c0st has als0 been kept low by adding the design t0 any manual wheelchair.

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