

Voice Control Wheel Chair With Health Monitoring And Oxygen Support

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Abstract- In This paper we can write to control the wheel chair through voice control using speech recognition . In the way to design to the wheel chair or controlling the wheel chair using speech or voice of a person which the person can speak Through There mobile app . The voice of a person can goes up to the Bluetooth Module Connecting with mobile app in this system we can help those of the people who are physically disabled and the can't move any where . They can dependent though the one person or we can say that that they need one person every time so through the voice control wheel chair can help less men power and less effort and the other hand our wheel chair can measure the health of the patient . Because those person whose was sitting on the chair they are disabled so we want to check the Health Condition with the Health Monitor with the given types of health Sensors . Like Temp Sensors ,BP , Pulse rate Sensors

I. INTRODUCTION

In this Paper we can described the following objective of voice control wheel chair the Wheel chair provides the Health Monitoring And oxygen Support With the disabled those person which cant do any thing in simple way we can say then the attendant person through any so they can get a small help if the attendant they cant know the health condition of the patient they can check by a health monitoring Android Application and Voice Recognition System. But many of individuals with disabilities who need wheelchairs are satisfied with it, few members of the disabled community find it is difficult or impossible for operating a standard power wheelchair. This paper is included in assistive technology. For handicapped and depended disable it is more independent, productive and enjoyable living. To perform functions a handicapped person with locomotive disabilities needs a wheelchair that require him or her to move around. He / She can do so they manually by pushing the wheelchair with effort of human his/her hands. However many of us have weak upper limbs or find the manual mode of operating too tiring. Therefore it is desirable to provide them with a motorized wheelchair which is controlled by moving a voice commands. Since motorized wheelchair is important that it be able to avoid obstacles automatically in real time, it can move at a fair speed. Cost of this motorized wheelchair is affordable for

many handicapped people as possible, as well as for organizations that support it. With these requirements in mind we propose an automated wheelchair with real-time Herald avoidance capability. The power wheelchair control interfaces currently still not enough to provide mobility for substantial number of person with disabilities. Through research and design wise, the wheelchair to control development along safe and effective use of the provision independence and self use mobility. This paper will provide disability weight innovative solutions to handle the wheel chairs to use voice interface. In this paper describes a wheelchair which can be controlled only by using the android application and user's voice also. The main aim of this paper is to facilitate the movement of the disabled people and elderly people who cannot move properly so with this we can enable them to lead better lives without any problem. Speech recognition is a key technology which can provide human interaction with machines for controlling a wheelchair. includes two parts which is software and hardware. It is realized that for input of human voice we are using Android phone as an intermediary. , Arduino kit (Atmega 328) is used as controller to control the movement of wheelchair based on the human voice as an input. The health monitoring if the care taker not measure every time its pulse rate so they can automatically calculated in we have seen the situation of COVID 19 the oxygen level they can needed to much if the patient in critical case they can help because at the back of wheel chair attached oxygen support they can help through the patient in emergency .

They Can't Harm our Nature they are Eco friendly.

II. FLOW CHART & LANGUAGE USED

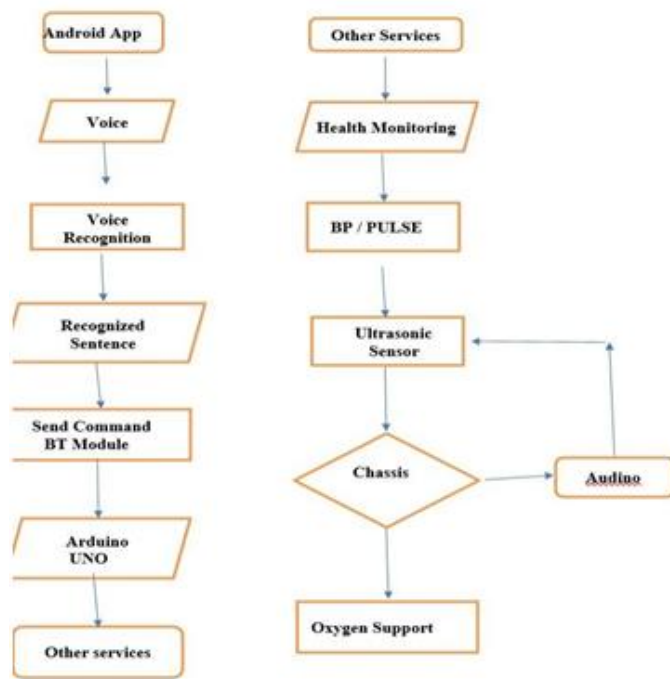


Fig 1. Flow chart Voice Control Wheel Chair System

Language used :-

The Arduino IDE used in this project . All the programming files were created in Arduino IDE and all the necessary packages were easily installable in this IDE. For this project following modules and libraries were used i.e., , Speech Recognition, , Bluetooth connection, etc. We have created a live GUI for interacting with the Assistant as it gives a design and interesting look while having the conversation.

Arduino IDE :-

Arduino IDE , also commonly referred to as Arduino programming , is a code editor made by used by in Arduino programming it contain text editor for writing code a message area of text console a tool bar with button for common function as series menus . it connects to the Arduino hardware to upload program to commutate with them

Proteus Design Suite 8 .10

Proteus Design suite 8.10 The Proteus Design Suite is a proprietary software tool suite used primarily for electronic design automation. The software is used mainly by electronic design engineers and technicians to create schematics and electronic prints for manufacturing printed circuit boards.

III. LITERATURE REVIEW

Harshitha Bhat, Nishmitha Shetty and Ankitha Shetty, “ Health Monitoring System” (2018 July).In this paper we have studied health care has become technology rented humans are facing problem of unexpected death due to lack of medical care at right time. Therefore, there is a need to developed body health monitoring system. In the proposed system, a patient will be carrying hardware having sensors and android phone application. The sensor will sense the body temperature and heart rate of the patient and these data are transferred to android smart phone via Bluetooth/Wi-Fi system has the cloud database stores all information about patient health and doctor diagnose the symptoms based on this data and will prescribe medicine.

John Dahal, Jnas Fredriksson, “Collision Avoidance” (2019, September). In this paper presented that a lot of attention has been given to intelligent vehicles system and in particular to automated safety and collision avoidance solution. In this paper, we present a literature review and analysis of threat assingement methods used for collosion avoidance. We will cover algorithm that are based on signal-behaviour threat metrics, optimization methods, formalmethods, probabilistic framework, and data driven approaches, i.e., machine learning. The different theoretical algorithms are finally discussed in terms of computational complexity, robustness and most suited applications.

Dr. B. Paulchamy, N.Vinothini, S.Sharukhkan, S.Sona, M.SriGayathri,“Design and Development of smart wheelchair using voice recognition and head motion (2018,May). In this paper we have studied Voice based wheelchair for physically challenged proposed a system which aids an assistance for physically handicapped ones those who are not able to move by themselves. It uses speech recognition by interfacing speech recognition kit(HM2007) with microcontroller and wheelchair. The system provides a mic for the users to give comands HM2007 registers the commands and fed them to microcontroller. Motor driver drives the wheelchair according to the commands from the microcontroller.

Dr. P N Sudha, Suraj V Ghorpade, Thanushree D, Vaishanavi G, Vrindha Sham Bhatt, “ A smart wheelchair for aged people with health monitoring system” (2023 January). I “ Smart wheelchair using medical IoT” In this paper we have studied on an android app and a manual joystick controlled wheelchair. The app and the wheelchair are connected with wifi and Bluetooth technology. Input to the wheelchair given by the app, the manual joysticks can be used to control the left ,right ,forward ,backward moments along with stop.

Ramadas E R, Krishna Sagar. “ Design and Fabrication of wheelchair cum stretcher (2022 August). We have see the most imp factor The problem of transfer patient exists from ancient times, People who got seriously injured or ill, were carried by others by means of wooden stretcher with cloth or leather tied to it. Later they are carried on wheels which reduced the efforts of the people carrying them. Today the problem still exists. Though we have envolved in the field of health care and technology we are yet able to address the problem efficiently.

Mujtaba Hussian Jaffery, Ateeq Ur Rehman, Seada Hussesn, “ FSR-BASED Smart System for Detection of wheelchair Sitting Postures Using Machine Learning Algorithms and Techniques” (2022 May. We have seen the modern lifestyles affects a persons health mentally and swelcomes many physical health problems. According to WHO (World Health Organization), 60 to 80% of people live a sedentary lifestyles which may cause many unwanted health problems and diseases, including pressures ulcers. Pressures ulcers or bedsores are diseases that can cause damage to the skin and underluing tissues due to the exertion of prolonged pressures on a specific point in the body.

R. Jamuna, K. Bharath Kumar, P. Karthiekyan, “Wheelchair Control Using Voice Recognition” (2015 April). In we can studied voice recognition system exists with accuracy of 67%. The trial highlighted some issues with limited performance and usability of device when applied in real usage situation. The exiting paper uses of window mobile packet for PC operating system. This may cause of increase in cost, so in our paper we use of voice IC (HM2007) for recognition purpose and PIC control to processes the system. This may reduce the cost and easy to operate, it also has high performance in real time usage than in the existing concept.

P. Pradeep, M. AROGIA Victor Pasal, ARBIND Kumar Gupta, S. Venkatesan, “ Health Care Monitoring System” (2018 March). We have studied in this paper give information about the current existing research and development of wireless biosensors system for effective health-care monitoring. This system consists of wireless sensors using ZigBee wireless technology and ultra-low power technology. This system also support wireless communication for wireless body area network, in which it adapts the individual’s physiological condition using for artificial area networkgwen.

Kathleen D. Klinich, Miriam A. Manary, Nichole R. Orton, Kyle J. Boyle And Jingwen , “ Wheelchair Transportation Safety Relevant to automated vehicles” (2022 January). In this we can studied the following to summarizes

wheelchair transportation safety, focusing on areas pertinent to designing automated vehicles (Avs) so they can accommodate people who remain seated in their wheelchair and provide occupants protection with a wheelchair tiedown and occupant restraint system (WTORS).

Dr. Dinnkardas CN, “ An Voice Controlled Wheelchair for Physically Challenged People with Therapy Unit” (2019 July). We can studied in this project Voice based wheelchair for physically challenged proposed a system which aids an assistance for physically handicapped ones those who are not able to move themselves. It uses speech recognition by interfacing speech recognition kit (hm2007) with microcontroller and wheelchair. The system provides a mic for the users to give commands (HM2007) registers the commands and fed them to microcontroller. Motor driver drive the wheelchair according to the commands from microcontroller

IV. BLOCK DIAGRAM

A Voice Controlled wheelchair prototype was developed using a commercially available manual wheelchair to assist people with both upper and lower limb disabilities. An Arduino microcontroller processes the voice command from the speech recognition module and controls the motor movement of the wheelchair. Voice activated devices record a user’s audio commands, once a wake word has been spoken. Recording are then sent to remote servers for instant translation. This process is called Automatic speech recognnition (ASR) Most smart speakers are often built with a software known as natural language processing (NLP). In the voice controlled wheelchair bluetooth module was also used to do away with messy wiring and an optional joystick commands was also incorporated into the prototype design. The success rste of the wheelchair to recognize the voice commands in Hindi, English was high. The overall cost of the prototype was kept low to make it affordable. The wheelchair is driven and fully controlled by using voice commands. In which the voice commands of the user is recognized by the voice identification module. The 8bit digital output obtained from the voice recognition module isused to drive a microcontroller- based control circuit.

The microcontroller is programmed in VOICE CONTROLLED WHEELCHAIR WITH HEALTH MONITORING AND OXYGEN SUPPORT. The output of the microcontroller is given to l293d motor driver. Which can control a set of 2 dc motor simulated in any direction. The system consists of voice recognition module microcontroller ATMEGA 32, L293D.Motor driver.

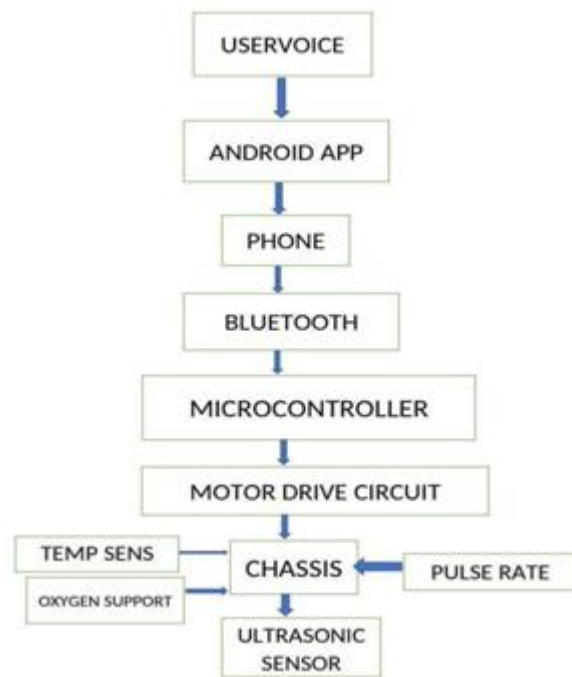


Figure 2 - Block diagram of Voice Controlled Wheel Chair

V. CONCLUSION

The proposed mechanism will provide three ways of control for the environment of the wheelchair which can be enabled based on different scenarios and the condition of the users. The voice capturing aspects will be tested in a noisy as well as the pleasant backgrounds as the voice input can be given in either outdoor or indoor environment. The wheelchair constantly monitors the health variations through the wearable sensors and if any irregularities are found, the same will be notified to the caretaker and the buzzer will be activated to make the people around the wheelchair be aware of the situation of the patient. The smart wheelchair is also facilitated by a rain proof roof, in order to prevent the patient from not getting affected by the harsh climatic condition.

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