



Patinet's Helper

Lithyashree V^{a}, Nishanthini G^b*

^a Student, KPR Institute of Engineering and Technology, Coimbatore, lithyashree0201@gmail.com

^b Student, KPR Institute of Engineering and Technology, Coimbatore, nishanthinigovind27@gmail.com

DOI: <https://doi.org/10.55248/gengpi.5.0424.0941>

ABSTRACT

This project is design to help a patient, the one who is affect the Contagious diseases, (literally “communicable by contact,”) This helper system contains Arduino microcontroller with basic mobility features. Arduino programs contains instructions mediating between android controller and Arduino helper system. Android mobile controller uses different mobile. An appropriate program in the arduino microprocessor to interact with the android controller has to be created. The program has been successfully complied through arduino IDE to the arduino We have to download an android application that will provide user interface to interact with the Helper system. Then the Instruction to arduino for various actions through interface via Bluetooth module. From the above words, we can control the system that will help the contagious diseased patient and we can know their Situation and fullfill their needs

Keywords: Contagious diseases Arduino microcontroller Mobile controller interface Bluetooth communication Patient assistance system Remote monitoring

1. INTRODUCTION

The world is at the dawn of a smart phone era where everything in our day to day life is, and can be controlled with a smartphone. The main purpose of this project is to create a remote interface to control helper system with wireless technology. There is a need to communicate with a contagious diseased patients with this robotic helper system to control the movement of system Today, the most common method is material handling process. This process improves customer service, reduces delivery time and hard work. To alleviate the hassle of handling robots, a Bluetooth-powered helper system is a relatively inexpensive, easy-to-use and efficient way to go. The project aim is to help a patient, that one who is affected by the contagious diseases (communicable by contact).an Arduino system and write a program on arduino Microprocessor. The Arduino helper system contains an Arduino microcontroller with basic navigation features. Arduino apps contain mediation instructions between Android controller and Arduino helper system. Android mobile controller uses various mobile sensors to monitor movement. An appropriate program in the arduino microprocessor to interact with the android controller has to be created. The program will be complied through arduino IDE to the arduino microprocessor & loaded in to it after proper checking of logic to to minimize any hardware loss / damage. We will use a android application that will provide user an interface to interactwith the arduino powered car. The interface will be easy to use and will control arduino microprocessor via the Bluetooth after giving instruction to arduino for various actions throughinterface through the Bluetooth module. Arduino will be interfaced with Bluetooth module to establish the connectivity and it will also be attached with motor driver to control the motor speed. The user will have access to control the robot helper system using the Android programmed app. This helper system will move according to the instruction given through the Android application by the user. from this helper system we can control the system that will help the contagious diseased patient and we can know their situation and full fill their needs it will be operated on any kind of surface that is another advantage. This is also cost efficientand simple than other existing systems. The proposed system is more suitable for modern era. The Arduino Uno is a microcontroller board based on the ATmega328P

2. METHODOLOGY

- First, attach the four gear motors in the board
- Then, connect the motor drive shield to the Arduino board an
- Next, connect these four motors to the motor driver shield.
- Connect the Bluetooth module using the jumper wire.
- Rxd to A1 pin
- Tdx to A0 pin

- Ground to ground
- VCC to 5v
- In the motor shield board
- Next Connect to the computer to upload the code
- Now, attach the Li-ion battery holder on the back and connect the power wires
- connect the wheels to the gear motors
- Next download the inbuilt app from playstore
- Arduino Bluetooth RC app
- Next, we need to connect to the Bluetooth module to the app
- the Bluetooth module is connected correctly, the circle on the left will be green in the app. now we click the arrow buttons. Then look at the movement in the machine.

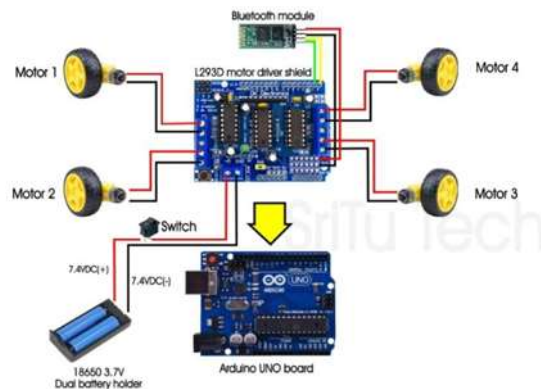


Fig 2.1 circuit diagram of patient's helper

2.1 CODE

```

Include <AFMotor.h>

AF_DCMotor motor1(1);
AF_DCMotor motor2(2);
AF_DCMotor motor3(3);
AF_DCMotor motor4(4);

int Speed = 230;

char value;

void setup() {
Serial.begin(9600);

motor1.setSpeed(Speed);
motor2.setSpeed(Speed);
motor3.setSpeed(Speed);
motor4.setSpeed(Speed);
}

void loop() {
if (Serial.available() > 0) {
value = Serial.read();

```

```
}  
if (value == 'F') {  
  motor1.run(FORWARD);  
  motor2.run(FORWARD);  
  motor3.run(FORWARD);  
  motor4.run(FORWARD);  
} else if (value == 'B') {  
  motor1.run(BACKWARD);  
  motor2.run(BACKWARD);  
  motor3.run(BACKWARD);  
  motor4.run(BACKWARD);  
} else if (value == 'L') {  
  motor1.run(BACKWARD);  
  motor2.run(BACKWARD);  
  motor3.run(FORWARD);  
  motor4.run(FORWARD);  
} else if (value == 'R') {  
  motor1.run(FORWARD);  
  motor2.run(FORWARD);  
  motor3.run(BACKWARD);  
  motor4.run(BACKWARD);  
} else {  
  motor1.run(RELEASE);  
  motor2.run(RELEASE);  
  motor3.run(RELEASE);  
  motor4.run(RELEASE);  
}  
}
```

3. CONCLUSION

The project titled Patient helper using Arduino is an application based on popular open source technology - Android and Arduino. The aim of the project was to create a helper system to help the contagious that has to be controlled through an application that runs on the android operating system. The project has been completed with success with the utmost satisfaction. The constraints square measure met and overcome with success. The system is intended as find it irresistible was set within the design section. Validation checks iatrogenic have greatly reduced errors. Provisions are created to upgrade the code, we can control the system that will help the contagious diseased patient and we can know their Situation and fulfill their needs.

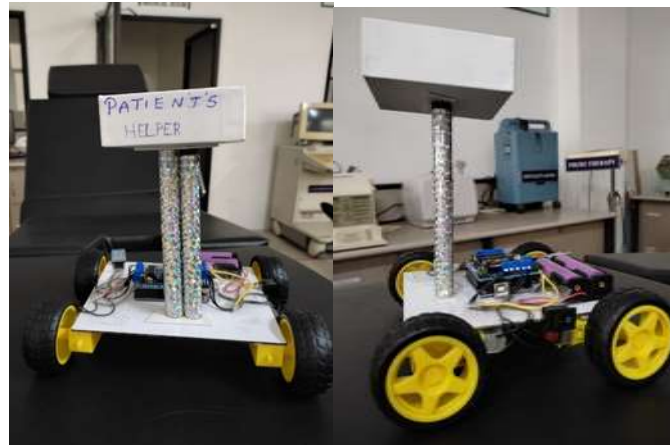


Fig 3.1 Product of patient's helper

4. RESULT

This Android controlled HELPER SYSTRM is working is based on Android OS, Arduino, Motor, DC motor driver, and Bluetooth module. Arduino is an open source prototype platform. Helper system, with an Arduino, L298N motor driver and Bluetooth module. The Arduino code The simulated on software and be interface with the hardware. The device can be controlled by any smart device with android. It will defently useful product in medical fiel for present and future use

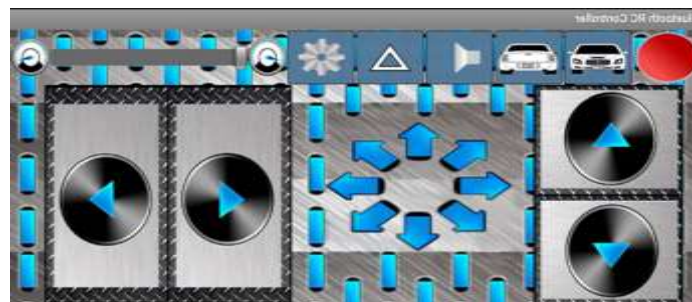


Fig 4.1 mobile controller for patient's helper

REFERENCE

- [1] Chang C-S, Wu T-H, Wu Y-C, Han C-C. Bluetooth-Based Healthcare Information and Medical Resource Management System. *Sensors*. 2023; 23(12):5389. <https://doi.org/10.3390/s23125389>
- [2] Taiwo O, Ezugwu AE. Smart healthcare support for remote patient monitoring during covid-19 quarantine. *Inform Med Unlocked*. 2020;20:100428.doi: 10.1016/j.imu.2020. 100428. Epub 2020 Sep 15. PMID: 32953970; PMCID: PMC7490242.
- [3] Bhat, Sandeep. (2016). Remote Healthcare Monitoring System Using Arduino Board over Distributed Ubiquitous Environment. *International Journal of Innovative Research in Computer and Communication Engineering*. 5.
- [4] V.A. Chekubasheva, O.A. Kravchuk, H. Hlukhova, O.V. Glukhov,
- [5] Creating of a remote-presence robot based on the development board Texas Instruments to monitor the status of infected patients, *Biosensors and Bioelectronics: X*, Volume 11, 2022, 100215, ISSN 2590-1370,
- [6] Ajay, V. S., Jindal, D., Roy, A., Venugopal, V., Sharma, R., Pawar, A., ... & Prabhakaran, D. (2016). Development of a smartphone-enabled hypertension and diabetes mellitus management package to facilitate evidence-based care delivery in primary healthcare facilities in India: the mPower Heart Project. *Journal of the American Heart Association*, 5(12), e004343.
- [7] Digarse, Pratiksha & Patil, Sanjaykumar. (2017). Arduino UNO and GSM based wireless health monitoring system for patients. 583-588. 10.1109/ICCONS.2017.8250529.
- [8] Davide Piaggio, Marianna Zarro, Silvio Pagliara, Martina Andellini, Abdulaziz Almuhini, Alessia Maccaro, Leandro Pecchia, The use of smart environments and robots for infection prevention control: A systematic literature review,
- [9] American Journal of Infection Control, Volume 51, Issue 10, 2023, Pages 1175-1181, ISSN 0196-6553, <https://doi.org/10.1016/j.ajic.2023.03.005>.

-
- [10] Hadi, Haneen. (2020). Line Follower Robot Arduino (using robot to control Patient bed who was infected with Covid-19 Virus). 1-3. 10.1109/ISMSIT50672.2020.9254906.
- [11] Amrutha R, Dama Manasa, Modiyam Chavva Radhika, Monisha M Y, Thilagavathy R, 2021, Patient Monitoring and Assistance using Robotic ARM, INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH & TECHNOLOGY (IJERT) NCCDS – 2021 (Volume 09 – Issue 12),
- [12] Digarse, Pratiksha & Patil, Sanjaykumar. (2017). Arduino UNO and GSM based wireless health monitoring system for patients. 583-588. 10.1109/ICCONS.2017.8250529.