

Report

Team name: Blue Bird

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Auto Chair

Problem:

Quadriplegia or Tetraplegia is a term used to describe the inability to voluntarily move the upper and lower parts of the body.



Picture:

A person with a complete C4 level of injury is paralyzed from the shoulders down.

Causes of Quadriplegia:

1. Motor vehicle accidents
2. Slips and falls
3. Sports/Recreational Activities
4. Surgical or Medical accidents

Solution:

As noted above , They find it hard to move by themselves so we make a chair to help them to move without anyone's help.

Our chair provides a speech recognition system which helps the patient to control the chair in all directions (right - left - forward - backward) and this is done by making a mobile app.

We also put an ultrasonic sensor and FSR (Force Sensitive Resistor) for safety.

The ultrasonic sensor detects if there is an object in front of the chair or not , if there is an object the chair will stop.

The FSR detects if the patient is on the chair or not , when the patient falls an alarming sound from a buzzer will beep.

Components:

- Arduino Uno board
- FSR (Force Sensitive Resistors)
- Ultrasonic sensor
- Microphone
- DC Motors
- H-Bridge
- Bluetooth Module
- Battery
- Buzzer
- Resistors
- Jumper Wires
- Chair

Recommendations:

- We can make another mobile app for recording the vital signs of the patient (Temperature - Respiratory rate - Blood pressure) and this app will be with the nurse who takes care of the patient , so if there is anything wrong she can make a decision.

Prototype:

