**IoT Based Automated Paralysis Patient Healthcare System using Arduino and GSM**

Abstract:

If you have paralysis, you are partly or entirely unable to move the affected parts of the body. Paralysis may be accompanied by a loss of sensation depending on the location of the injury. Strokes and spinal cord injuries cause sudden paralysis. Some medical conditions can cause gradual paralysis

In India, everyday many lives are affected because the patients are not timely and properly operated. Also for real time parameter values are not efficiently measured in clinic as well as in hospitals. Sometimes it becomes difficult for hospitals to frequently check patients’ conditions. Also continuous monitoring of ICU patients is not possible. To deal with these types of situations, our system is beneficial. Our system is designed to be used in hospitals for measuring and monitoring various parameters like temperature, ECG, fall Detection etc. The results can be recorded using Arduino displayed on a LCD display. Also the results can be sent to server using gprs module. Doctors can login to a website and view those results.

We come across hospitals and NGO’s serving paralytic patients who have their whole or partial body disabled by the Paralysis attack. These people in most cases are not able to convey their needs as they are neither able to speak properly nor do they convey through sign language due to loss in motor control by their brain. In such a situation we propose a system that helps disabled person in displaying a message over the LCD by just simple motion of any part of his body which has motion abilities. This system also takes care of the situation wherein no one is present to attend the patient and thus sending a message through GSM of what he wants to convey in SMS. Our proposed system works the bending of the user fingers. The working of the device here is shown by holding in the fingers of the mobile hand. The user now just needs to bend the flux the device in a particular angle to convey a message. Bending the flux sensor the device in different directions conveys a different message. In this way the Automated Paralysis Patient Care System truly automates the care taking ability of the patient which ensures a timely attention to the patient and thus for a good health of the patient.

In this project we propose a Sign Language Glove which will assist those people who are suffering for any kind of speech defect to communicate through gestures i.e. with the help of single handed sign language the user will make gestures of alphabets.  The glove will record all the gestures made by the user and then it will translate these gestures into visual form as well as in audio form.

This project uses ADRUINO controller to control all the processes and flex sensors along with accelerometer sensors will track the movement of fingers as well as entire palm. A LCD will be used to display the user’s gesture and a speaker to translate the gesture into audio signal is planned if possible for execution. This project can be further developed to recognize complex like food, water, etc. gsm modem will send sms to predefined mobile numbers

**Hardware Specifications**

* Atmega2560Microcontroller
* GSM Modem
* Accelerometer adxl
* Lm35
* Ecg
* Flux sensors
* Voice module
* Lcd display
* Powersupply board

**Software Specifications**

* Arduino Compiler
* Orcad software
* Programming Language: C

**Block diagram:**

**POWER SUPPLY**

**ECG SENSOR**

**FALL DETECTION**

**BODY TEMPERATURE SENSOR**

**GSM MODULE**

**LCD Display (16\*2)**

**Arduino MEGA**

**2560**

**APR33A3**

**VOICE MODULE**

**SPEAKER**

**FLUX SENSORS**

**4**

**RECEIVER SECTION ----------IOT WEB SITE**

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| --- | --- | --- |
| **MOBILE** | **TAB** | **PC** |

**GLOBAL**

# Applications

* Home automation ---PATIENTS
* OLD AGE HOMES