StrokeRehab

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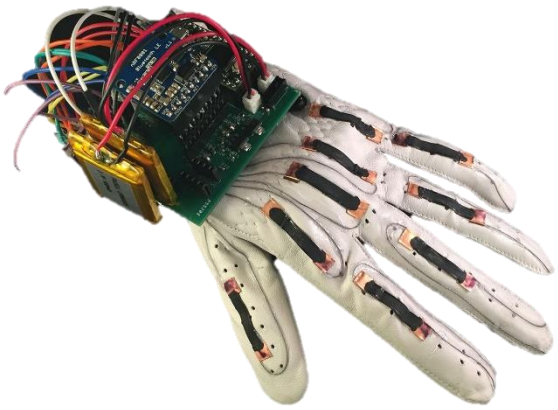
What does StrokeRehab do?

StrokeRehab is an innovative technological solution for patients recovering from serious medical conditions such as Stroke by providing remote diagnosis and remedial processes such as Physiotherapy and others.



What's involved in Stroke Rehabilitation?

There are many approaches to stroke rehabilitation. Your rehabilitation plan will depend on the part of the body or type of ability affected by your stroke.

The goal of stroke rehabilitation is to help you relearn skills you lost when a stroke affected part of your brain. Stroke rehabilitation can help you regain independence and improve your quality of life.

The severity of stroke complications and each person's ability to recover vary widely. Researchers have found that people who participate in a focused stroke rehabilitation program perform better than most people who don't have stroke rehabilitation.

Technology-assisted physical activities might include:

- **Robotic technology.** Robotic devices can assist impaired limbs with performing repetitive motions, helping the limbs to regain strength and function.
- **Wireless technology.** An activity monitor might help you increase post-stroke activity.
- **Virtual reality.** The use of video games and other computer-based therapies involves interacting with a simulated, real-time environment.
- **Functional electrical stimulation.** Electricity is applied to weakened muscles, causing them to contract. The electrical stimulation may help re-educate your muscles.

How does the SmartGlove work?

The SmartGlove contains 5 Pressure Sensors, a Flex Sensor and a single Accelerometer.

These collect the following data from the patient’s hand:

1. **Pressure Sensor.** A VeloStat™ Pressure Sensor to detect the ability of the user to put pressure. The values range from 0 to 1023 with increasing order of pressure being applied.

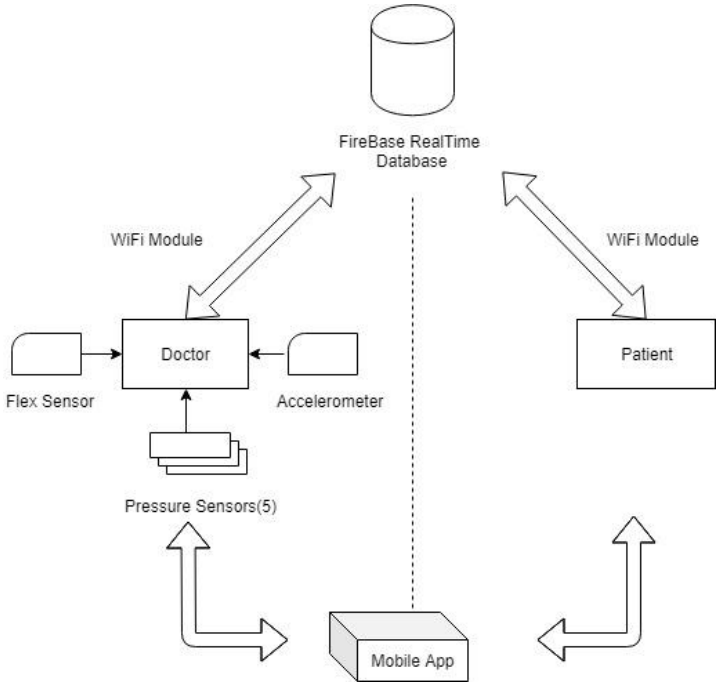
2. **Flex Sensor.** The Flex Sensor detects the ability of the user to bend his fingers and in effect joints.
3. **Accelerometer.** The Accelerometer can detect the user's ability to move his hand relatively fast.

The SmartGlove also can contains following modules for rehabilitation based on the collected data and at the Doctors' prescription:

1. **Artificial Sensation Generator.** Vibration modules with variable outputs are available on the glove for emulating the sensations.
2. **Electrical Stimulation.** Providing minute electrical pulses for increasing sensory feelings

What is the Architecture of the Project?

The Architecture of the project is as follows:



What does the App offer?

The Android Application has the following features:

- **Patient and Doctors Panels.** Both patients and doctors have registerable panels.
- **Data Analysis and Monitoring.** The patients and their respective doctors can keep track of their progress by observing easy interpretable plots and exploratory data analysis
- **Chat-App.** The application also contains a chat app for easy interoperability between patients and doctors.