# Iot Based Smart Glove for Stroke Patients

**Smritti Bala R**
Department of Biomedical Engineering, SRM Institute of Science and Technology, Ramapuram campus, Chennai, Tamil Nadu, India

**Aswini. R**
Department of Biomedical Engineering, SRM Institute of Science and Technology, Ramapuram campus, Chennai, Tamil Nadu, India

**Dr. Pushpa B**
Department of Biomedical Engineering, SRM Institute of Science and Technology, Ramapuram campus, Chennai, Tamil Nadu, India

## Abstract:

By combining vibration therapy with a pre-programmed messaging system, the rehabilitative glove aims to improve blood circulation during the post-operative recovery process and alleviate the high expense of physical therapy. This is a cost-effective and automated substitute for ongoing professional rehabilitation services, which many people cannot afford. The glove is equipped with vibration motors that deliver controlled therapeutic vibrations to stimulate blood flow and aid in muscle recovery. Users provide feedback ("Good" or "Pain") after each therapy session, which helps adjust the vibration intensity and duration for future sessions. Negative feedback, in the form of "Pain," triggers a reduction in therapy intensity, ensuring comfort and avoiding strain. In addition, a predefined messaging system is integrated into the glove, allowing the user to communicate via an OLED display and buzzer. The user can send pre-programmed messages, like "Need Help" or "Therapy Completed," by pressing a push button. These messages will be shown on the OLED screen and will be accompanied by a buzzer alert to let carers or medical professionals know.

Continuous oversight is made possible by uploading all session data—including vibration settings, time, feedback, and messages—to an Internet of Things platform for remote monitoring. This system, which is driven by an ESP32 microcontroller, provides patients with an affordable and easily accessible means of undergoing individualized rehabilitation at home.

This method offers a home-based, safe, and adaptable rehabilitation solution that promotes patient autonomy while guaranteeing expert care.

## Keywords:

IoT Platform, Personalized Therapy, Post-Surgical Recovery, Remote Monitoring, Vibration Therapy.