

Portable Glove Controlled Video Game for Hand Rehabilitation

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Abstract : There are numerous neurological conditions that may result in a loss of motor function. Such conditions may include cerebral palsy, Parkinson's disease, stroke or multiple sclerosis. Due to impaired motor function, specifically in the hand and arm, living independently becomes tremendously more difficult. Rehabilitation programs are the main method to treat these kinds of disabled individuals. However, these programs require longtime commitment from the clinicians/therapists, demand person to person caring, and typically the treatment duration is usually very long. Aside from the treatment received from the therapist, the continuation of neuroplasticity at home is essential to maximizing development and restoring the biological function. To contribute in this area, we have researched and developed a portable and comfortable hand glove for fine motor skills rehabilitation. The glove provides interactive home-based therapy to engage the patient with simple games. The key to this treatment is the repetition of moving the hand and being capable of positioning the hand in various ways.

Keywords : home based, wearable sensors, glove, rehabilitation, motor function, video games

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