

## **ABSTRACT**

*The large number of people undergoing post-stroke rehabilitation is one of the reasons for making a hand exoskeleton that can be used for daily rehabilitation. The purpose of this study is to develop technology in the post-stroke bilateral rehabilitation process using muscle pattern recognition by acquiring leading muscle signals to control the hand exoskeleton. The control of this hand exoskeleton uses dominant electromyograph signals. Obtained from muscle data retrieval when the movement opens and closes using the OYMotion sensor. The captured data will later be acquired into electromyograph signals. The data acquired were 3 leading muscles (Abductor pollicis longus, extensor digitorum, and flexor digitorum superficialis) with 3 conditions (rest, pronation, and supination) in open and closed conditions. From the data retrieval of the acquired muscle, the dominant electromyograph signal signal value (extensor digitorum on an oblique condition) is used to control the hand exoskeleton in opening and closing movements. The data that has been obtained will be tested again to determine the accuracy in controlling the hand exoskeleton during the opening and closing movements. Based on the evaluation of the electromyograph signal signal data, the dominant training data from 5 respondents was obtained, the maximum result was 96% for the extensor digitorum muscle on an oblique condition. The results of this study are expected to assist the bilateral rehabilitation process of post-stroke patients using a hand exoskeleton.*

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**Keywords :** *Hand exoskeleton, Post Stroke, EMG Signal Acquisition.*