

Abstract

Electromyography (EMG) is a process of detecting, analyzing and using electrical signals originating from muscle contractions. The signal obtained is called an electromyogram or myoelectric signal. EMG is widely used for the rehabilitation and prevention processes developed in human muscles. EMG is also used by fitness centers to analyze athlete fitness through information recorded from athlete's muscle signals. However, studies on the conversation have not been done without disputes. This research was conducted to fill this gap, by conducting studies on the Extraction features in muscle based on EMG signals using Discrete Wavelet Transform.

This study discusses the application of the EMG signal-based feature extraction method to approve the muscle. Can be expected with the results of this study can uncover or find the best feature extraction algorithm to get help. To solve the above problem, this final project proposes the development of feature extraction algorithm on EMG signals by comparing 3 different types of mother wavelets from DWT, namely the type Wavelet Daubechies, Wavelet Coiflets and Wavelet Coiflets to improve the accuracy of the classification process.

The results show that the algorithm with *Daubechies* mother wavelet with classifying using KNN managed to Daubechies average accuracy achieved the best value compared to other DWT with sensitivity of 95.09%, specificity of 96% and accuracy of 95.09% of the 10 subjects tested by taking the best wavelets from daubechies and the best level of decomposition.

Keywords: Electromyography, Feature Extraction, Discrete Wavelet Transform