

## **ABSTRACT**

With technology development, knowledge about hand gestures recognition has developing rapidly. It is needed to resolve the communication problems occurred in the community, and for educate the community how to interact with disabilities, especially the deaf. This research aiming is to create a hand gesture recognition system with good performances.

This step started with pre-processing, where the hand image that has been taken was separated between the foreground and background. The method used in this research was Discrete Wavelet Transform (DWT) as a hand feature extraction. The foreground then transformed, the image was divided by frequency according to the quantization level. One image splitted into four sections, namely the Low-Low, Low-High, High-Low and High-High sub-band at the 1<sup>st</sup> level quantization. The image taken is usually the low-low sub-band. Transformed images were then classified using Deep Neural Networks (DNNs).

From this research we obtained an accuracy rate of 100% for dataset A and 90% for dataset B. The amount of training data and test data used were 400 training data images and 100 test data images which consists five gesture classes namely class A, B, C, # 5, and pointing.

**Keywords:** Accuracy, Classification, Dataset, Hand Gestures, Pre-processing, Quantization