

## **Abstract**

Optical Character Recognition is a technique to alter the handwriting, typewriters and printing machines (written in the form of non-digital) into digital form of writing that can be changed using a computer. In the OCR, there are several steps that must be done, among others, Image Acquisition, Image Preprocessing, Feature Extraction and Classification.

In this final project will be developed a system that can read handwritten Japanese characters (KANJI) by applying the method of Independent Component Analysis (ICA) as a image transformator changing the feature extraction step and Learning Vector Quantization (LVQ) as a classifier. The best accuracy of results generated by this system is 69.5652% for practicing hiragana data, 61.087% for training data katakana, 43.913% for test data 33.4783% hiragana and katakana for test data. The results of this accuracy is obtained by using 5 IC (independent component) of 8 IC is raised to hiragana and 2 of IC 5 IC is raised to say. Later in the training stage of the learning rate of 0.0015 is best used either in hiragana or katakana, and the number of hidden neurons that are best for hiragana to 184 hidden neurons while katakana is 230 hidden neurons. The results are less good accuracy is due to a high enough level of similarity between the letters so it is very difficult for the classifier to recognize the Japanese characters.

Key words: optical character recognition, hiragana, katakana, independent component, learning vector quantization.