ABSTRACT

Japan is a country which uses different letter with Latin character. So, need more time to learn Japanese language because we must know the all of Japanese character before. But the fact, not easy to learn Japanese character because of its shape which very complex.

In this final project, designed the reading Japanese character system in the form of application program which the function is to identify Japanese character especially Kana (Hiragana-Katakana) character then translate it to Latin character by using *Optical Character Recognition* (OCR), a computer system which used to recognize a combination of character from typewriter, printer or handwriting. The combination of Japanese character which identified in this final project is from printed Japanese character document. Then the image of that document is captured by webcam and processed directly to translate it in Latin character.

In its process are done 5 steps. In preprocessing is done the modification of image color to BW image, in segmentation step is done the region separation at each character which will be detected, and in normalization process is done the modification of character dimension. Then, in feature extraction is done the removal of certain features of each character. And in the character recognizing character which use Self Organizing Map (SOM) artificial neural network is done the determining of vector character line by connecting the dots of neuron in a character region.

The testing process is done by taking samples of training image and not training image. The best accuracy result is 83.33% to Hiragana character and 77.55% to Katakana character with the recognizing times is 0.256614 second to each character and time for capturing image is 1 second.

Keywords: Kana (Hiragana-Katakana) character, printed, OCR, webcam, feature extraction, SOM artificial neural network.