

Handwriting Character Recognition Using Gradient Morphological Edge Detection Method Based on Backpropagation Neural Networks

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ABSTRACT

Handwriting is a form of identity of a person. As humans who are endowed with the ability to recognize patterns and shapes, we will easily recognize and classify words as well as letters and numbers in a handwritten document. However, it will be a problem for the computer to recognize and classify different handwritten characters. Morphology Gradient edge detection method based on Backpropagation artificial neural network can be an alternative in solving solutions for handwriting character recognition. This study aims to apply the edge detection method of Gradient Morphology and backpropagation neural networks in order to recognize handwritten character images with the extension .png. The data used in this research is image data of handwritten characters with numbers (0-9), uppercase letters (A-Z), and lowercase letters (a-z) totaling 30 images per character. The results obtained from this study are that the system built can produce the highest accuracy value for network training of 23.19% and the value of character recognition accuracy of 19.68% with the number of hidden layer neurons as many as 60 neurons and the number of epochs of 500 epochs.

Keywords: Handwriting character recognition, Gradient morphology, Backpropagation