

# **RECOGNITION OF HANGUL WRITING PATTERNS USING BACKPROPAGATION METHOD**

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## **ABSTRACT**

*South Korea's official writing system is Hangul (  $\text{한글}$  : [Hangeul]), which consists of a phonetic alphabet or an alphabet such as ideographic writing (writing in the form of 'symbols'). This research makes Hangul recognition system using Backpropagation method. The data set used is taken online from the KAIST Scene Text Dataset. The total data set is 2200 images that will be divided by a ratio of 30:70 with 30% test data and 70% training data. Before being processed, Hangul images in JPG format undergo preprocessing which consists of grayscaling, binaryzation, resizing, thinning, segmentation, and feature extraction. The results of preprocessing are 45x1 image features that will be used for network training using the Backpropagation method. The best network obtained uses 120 hidden layer neurons, 100 input layer neurons, 40 output layers and 1200 epochs. The highest level of accuracy obtained during training was 89.5%.*

**Keywords:** *Backpropagation, Hangul, Pattern Recognition*