

Abstract

Advances in technology make computer devices have high computing capability to enhance performance in the processing of data into information. One of the applications is in character recognition. The uniqueness of each character and the nature of each theory produce new and interesting problems to attempt further research. Based on this, a pattern recognition system is developed which has the ability to recognize characters with the output of the correct reading of the characters by using a combination of the Modified Direction Feature (MDF) and Bidirectional Associative Memory (BAM), to analyze the accuracy of the recognition of characters, analyze the factors that influence the accuracy of letter recognition using MDF and BAM.

MDF is a technique which takes the feature vector from every direction and combines them to form a specific feature vector. From the feature vector extracted from all directions, it can be shown that every input character has uniqueness. BAM has the capability as a content addressable memory or associative memory; a memory that can be called using a piece of information stored on them.

Character recognition system using MDF and BAM leads to the conclusion that BAM is less effective in classifying characters, in which the pattern feature vector generated from the MDF has been able to provide the uniqueness of the patterns, but the classification of the BAM has a low accuracy. This is due to BAM is not suitable to be used to recognize patterns with a lot of classes and large variance of data just like character recognition. The accuracy of the system is influenced by the number of transitions, the size of normalization and iteration at BAM. Accuracy of character recognition system reached is only 40%.

Keywords: Character Recognition, Modified Direction Feature (MDF), Bidirectional Associative Memory (BAM).