

## Abstract

Artificial Neural Network can be used in many cases, such as pattern recognition, etc. Until today, there is no exact formula for getting the most optimal artificial neural network structure. So, researcher here is trying to find the most optimal artificial neural network structure using artificial bee colony algorithm. From the testing results of the system, the maximum accuracy of non-optimized artificial neural network for this arabic characters pattern recognition is 55% while the average of its accuracies is 52,33% and the maximum accuracy of optimized one is 55% and the average of its accuracies is 51,67%. From this results, it can be concluded that the artificial neural networks optimized by artificial bee colony have a smaller average of accuracies than the non-optimized one and have an equal maximum accuracy of the non-optimized one. So, it shows that artificial bee colony algorithm can not optimize artificial neural network in this system.

**Keywords:** optimization, artificial neural network, artificial bee colony algorithm, pattern recognition, arabic character.