Abstract

The neural network is a static classifier that requires fixed-size vector functions. For this reason, it is considered as a very effective approach for recognizing characters and graphemes. More than 80% of the research that implements neural networks uses backpropagation. The retro-propagating neural network can be used in many applications such as character recognition, face recognition, etc. Training of neural networks is a complex task in the field of supervised research. The main difficulty is to find the most appropriate combination of network architecture, learning function, transfer and training for the classification task. In this paper we dress the recognition of Arabic handwriting isolated characters using two types of neural networks: a feed forward and a cascade forward. We achieve different experiments by varying the number of hidden layer neurons, learning functions, and transfer functions. For that, we use our database for Arabic handwritten characters and ligatures (DBAHCL) in the training, test and validation phases. We compare the results based on the mean squared error, accuracy, convergence rate, and classification accuracy.
General Term

Pattern Recognition, classification, neural network.

References


Index Terms

Computer Science  Artificial Intelligence

Keywords

Handwritten Arabic characters, recognition, DBAHCL, neural network, transfer function, learning function, feed forward, cascade forward.