



# Offline Recognition System for Arabic Handwritten Words Using Artificial Neural Networks

**Abstract**— Arabic handwritten recognition is playing an important role in communicating and documenting information in everyday life. Handwriting has functional importance considering its ubiquity in human activities, as in reading handwritten notes in a PDA (Personal Digital Assistant), in postal addresses on envelopes, in amounts in bank accounts, etc. In this work, an offline recognition system for Arabic handwritten names is proposed using Artificial Neural Network (ANN). As part of the feature extraction, region props were used, it extracts array with fields: Area, Centroid and Bounding Box. A feed-forward neural network with three different topologies was trained using backpropagation algorithm. The number of nodes in the hidden layer was varied; the lower the number of hidden layers, the higher the recognition rate. Moreover, we found that the first topology (with two hidden layers) produced a higher recognition rate 92% from the trained data compared to the second and third topologies that produced a smaller recognition rate.