Abstract

Determination of optimum feed forward artificial neural network (ANN) design and training parameters is an extremely important mission. It is a challenging and daunting task to find an ANN design, which is effective and accurate. This paper presents a new methodology for the optimization of ANN parameters as it introduces a process of training ANN which is effective and less human-dependent. The derived ANN achieves satisfactory performance and solves the time-consuming task of training process. A Genetic Algorithm (GA) has been used to optimize training algorithms, network architecture (i.e. number of hidden layer and neurons per layer), activation functions, initial weight, learning rate, momentum rate, and number of iterations. The preliminary result of the proposed approach has indicated that the new methodology can optimize designing and training parameters precisely, and resulting in ANN where satisfactory performance.


Optimizing the Multilayer Feed-Forward Artificial Neural Networks Architecture and Training Parameters using Genetic Algorithm

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