

A Multi-Objective Evolutionary Algorithm of Neural Network for Medical Diseases Problems

Authors : Sultan Noman Qasem

Abstract : This paper presents an evolutionary algorithm for solving multi-objective optimization problems-based artificial neural network (ANN). The multi-objective evolutionary algorithm used in this study is genetic algorithm while ANN used is radial basis function network (RBFN). The proposed algorithm named memetic elitist Pareto non-dominated sorting genetic algorithm-based RBFNN (MEPGAN). The proposed algorithm is implemented on medical diseases problems. The experimental results indicate that the proposed algorithm is viable, and provides an effective means to design multi-objective RBFNs with good generalization capability and compact network structure. This study shows that MEPGAN generates RBFNs coming with an appropriate balance between accuracy and simplicity, comparing to the other algorithms found in literature.

Keywords : radial basis function network, hybrid learning, multi-objective optimization, genetic algorithm

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