AN ENHANCED PARALLEL & DISTRIBUTED IMPLEMENTATION
OF THE HARMONY SEARCH BASED SUPERVISED TRAINING
OF ARTIFICIAL NEURAL NETWORKS

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Abstract

The authors have published earlier a parallel & distributed implementation method for the supervised training of feed-forward artificial neural networks using the Harmony Search algorithm. Such implementation was intended to address the training of larger pattern-classification problem. The implementation platforms included both a homogeneous and a heterogeneous system of Master-Slave processing nodes. The latter heterogeneous implementation utilized a node benchmarking score obtained via independent software in order to determine the load balancing ratios for the different processing nodes. In this paper an enhanced alternative benchmarking technique is proposed that is based on the actual workload execution times for each heterogeneous processing node. Using the same pattern-classification problem on the same heterogeneous platform setup used in the previous technique, results show that the proposed technique has attained higher speedup in comparison with the former.

Keywords: Neural network, Harmony search, Parallel & distributed processing, Pattern-classification