Abstract

The combination of evolutionary algorithms and ANN has been a recent interest in the field of research. Hopfield model is a type of recurrent neural network which has been widely studied for the purpose of associative memories. In the present work, this Hopfield Model of feedback neural networks has been studied with Monte Carlo adaptation learning rule and one evolutionary searching algorithm i.e. genetic algorithm for pattern association. The aim is to obtain the optimal weight matrices with the MC-adaptation rule and Genetic algorithm for efficient recalling of any approximate input patterns. The experiments consider the Hopfield neural networks architectures that store all objects using Monte Carlo-adaptation rule and simulates the recalling of these stored patterns on presentation of prototype input patterns using evolutionary algorithm (Genetic Algorithm). Experiment shows the recalling of patterns using genetic algorithm have better results than the conventional recalling with Hebbian rule.
Analysis of Hopfield Associative Memory with Combination of MC Adaptation Rule and an Evolutionary Algorithm

- Zhou Zen and Zhao Hong, Improvement in Hopfield Neural Network by MC-adaptation rule, department of physics, Xiamen 2006.

Index Terms

Computer Science

Algorithms

Keywords

Hopfield Neural Network with associative memory for pattern association problem using MC-adaptation rule and Evolutionary Genetic Algorithm