Simultaneous Evolution of Architecture and Connection Weights in Artificial Neural Network

Abstract

The important issue for designing architecture is the evolution of Artificial Neural Network (ANN). There is no systematic method to design a near-optimal architecture for a given application or task. The pattern classification methods are used to design the neural network architectures and efforts towards the automatic design of network topologies, constructive and destructive algorithms can be used. In the proposed work the optimization of architectures and connection weights uses the evolutionary process. A single-point crossover is applied with selective schemas on the network space and evolution is introduced in the mutation stage so that an optimized ANNs are achieved.

References

- M. C. Moze and P. Smolensky. Using relevance to reduce network size automatically.
Simultaneous Evolution of Architecture and Connection Weights in Artificial Neural Network

Index Terms

Computer Science  
Artificial Intelligence

Keywords

Artificial neural network  
topology mutation  
schema theory