Optimalisasi paramter neural network menggunakan algoritma genetik

Radhietya, author

Abstrak

One of the problems faced in applying neural network to some real world application is related to difticulties in finding an optimum set of weights and thresholds during the training phase. A general most method in tinding these solutions for these problems is backpropagation.
A different method to tind the solutions of the same problems is Genetic Algorithms. Genetic algorithm is relatively new search algorithm that has not been fully explored in this area. ln this thesis, genetic algorithms are applied to train neural networks and to evolve an optimum set of weights and thresholds. Process begin with encode neural networks parameters to binary chromosomes, and evaluate. The Spinning wheel selections are using to produce offspring with high titness_ then recombinate with crossover and mutation as genetic operator.
The proiect carried out investigates whether genetic atgonthms can be applied to neural networks to solve pattem classitication and function approximation problems. This thesis describes tl1e simulation works that have been perfomwed. It describes the design ofa genetic algorithm and the results obtained. ln pattem classilication problem that use feedforward network show, that genetic algorithm is superior to backpropagation training rule in error and speed calculation. ln function approximation, the result shows that genetic algorithm approach is very much slower than the backpropagation method. Results' show that even for relatively simple network, genetic algorithm requires a much longer time to Uain neural networks-