

Abstract

Artificial Neural Network (ANN) is a classification machine which has keen on accuracy towards classification matters. However, it doesn't have symbolic rule or other form of knowledge structure. ANN makes its decision by using activation of the nodes (input and hidden) combined with the weights of the connections between these nodes. In this Final Project, we are going to extract the rule of ANN into IF...THEN form thus easily interpreted by human experts. Extracting rule of ANN is accomplished by enumerating fitness value each chromosome constructed based on Neural Network's weights. Fitness values are enumerated by using Genetic Algorithm (GA). In case, cross-over, mutation, and generalisation are used in order to achieve satisfied fitness value. This method's strong point is its ability to search rule in relatively short time (less than 0.2 seconds per 100 generation) on whichever ANN architecture it's implemented in. Therefore, this method is best implemented in case study which involves relatively large datasets and attributes. But it has flaws at accuracy, some cases it needs more than once experiments in order to obtain accuracy close to optimum results.

Keywords : *Artificial Neural Network, weight, Genetic Algorithm, Fitness Value, Rule.*