

Abstract

Artificial neural network of multilayer perceptron backpropagation is mostly used for handling of classification, recognition, and prediction. Artificial neural network create well architecture to solve classification, recognition, and prediction with minimum error. Architecture of artificial neural network consists of connection bit of connector and weight of connector. Connection bit of connector shows that connector connects one unit in lower layer to another unit in higher layer or not. Weight of connector shows that how many signal that will be sent. But, artificial neural network of multilayer perceptron backpropagation is possible to trap in local optimum. So, artificial neural network of backpropagation needs a method to far away from local optimum. One of method to far away from local optimum is tabu search.

Beside that, artificial neural network of multilayer perceptron backpropagation is possible to have weights that reduce of generalization capability of neural network. That weights are called noise weights. So, artificial neural network of backpropagation needs a method to eliminate noise weights. One of method to eliminate noise weights is weight elimination.

Artificial neural network of multilayer perceptron backpropagation do training and testing to get well architecture which has minimum error. Then, that architectur is optimized by tabu search. Tabu search creates searching space by generating new architecture which its connection bits are cutting or connecting from connection bits before and its weights are increasing or decreasing from weights before. Each of architecture that is generated, will be trained with backpropagation – weight elimination and tested to get well architecture which has minimum bit connection and maximum accuration.

Result of implementation, architecture that generated by tabu search is simpler than backpropagation but has training error that higher than backpropagation.

Keywords: *artificial neural network of multilayer perceptron backpropagation, tabu search, weight elimination.*