Abstract

This paper presents Neuro-Fuzzy approach for forecasting analysis in power load. Forecasting the power load is a difficult task for a country and both positive and negative load forecasting makes a big problem for the country. An approach that Neuro-Fuzzy model is proposed for forecast power load in this paper. The proposed model a fuzzy back propagation network is constructed and then a fuzzy intersection is applied and after that de-fuzzify the result to generate a crisp value by using Radial Basis Function network (RBF). The proposed model improves the accuracy of power load forecasting. The forecasted results obtained by neuro-fuzzy method were compared with the Artificial Neural Network by using Mean Absolute Percentage Error (MAPE) to measure accuracy of the result. The experimental result shows that the neuro-fuzzy implementations have more accuracy.
Neural-Fuzzy Approach for Power Load Forecasting Analysis

Demand Using Artificial Neural Network; IEEE International conference 2012.
- Manish Sankar, B. Yeganarayana, Deepak Khemani; Backpropagation learning algorithms for classification with fuzzy mean square error; Elsevier 1998.
- Rustum Mamlook, Omar Badran, Emad Abdulhadi; A fuzzy inference model for short-term load forecasting; a Middle East University for Graduate Studies, Elsevier 2009.
- A. Ghanhari, A. Naghavi, S. F. Ghaderi, and M. Sabaghian; Artificial Neural Networks and regression approaches comparison for forecasting Iran's annual electricity load; Proceeding International Conference on Power.
- Paras Mandal, Tomonobu Senjyu, Naomitsu Urasaki, Toshihisa Funabashi; A neural network based several-hour-ahead electric load forecasting using similar days approach; Elsevier 2006.
- chih-chou chiu, deborah f. cook, jen-lung kao, and yu-chao chou; Combining a neural network and a rule-based expert system for short-term load forecasting; Elsevier 1997.
- http://www.populstat.info/
- http://www.indexmundi.com/india/gdp_(purchasing_power_parity).html

Index Terms

Computer Science

Neural Networks
Keywords
Artificial Neural Network  Load forecasting  Neuro-fuzzy model  Radial basis function network