Chapter 4[1]

Using Soft Computing Methods for Time Series Forecasting

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Abstract: Time series forecasting is one of the important problems in time series analysis. Many different approaches have been developed in this field. Unlike statistical methods, soft computing methods are more tolerant to imprecision, uncertainty, partial truth, and approximation in time series. This chapter addresses two major aspects of time series forecasting: 1) how to identify time series variables including exogenous ones relevant to forecasting future values, and 2) how to build a better forecasting model to improve the forecasting accuracy. Two different models are developed in this research. First, we propose a soft computing based hybrid method to improve the accuracy of a neural network model. Then a sub-clustered rule-based forecasting method, called WEFuNN, is developed to group similar time series data together in order to reduce the computational time and to increase the accuracy of the forecasting method.

***Key Words*:** Time series forecasting, Soft computing, Clustering.

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[1] Liao, T.W. and E. Triantaphyllou, (Eds.), **Recent Advances in Data Mining of Enterprise Data,** *World Scientific*, Singapore, pp. 189-246, 2007.