Thesis Title	An Application of Neural Networks in Forecasting Temperature
Thesis Credits	12
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Degree of Study	Master of Science
Department	Information Technology
Academic Year	1998

Abstract

Information derived from forecasting temperature is essential in forecasting electricity demand in Thailand. Therefore, the accuracy in forecasting the temperature is important to the overall plan for future electricity generation.

This research study utilises neural networks theory in forecasting temperature. Data used in training and testing neural networks are daily temperature readings on the department of meteorology's hygrometers, situated at Bang-Na district in Bangkok, between 13:00 hrs. and 17:00 hrs. inclusively. Data in 1991 to 1995 were used for training where as data in 1996 were used for testing. Neural networks implemented are of Multilayer Perceptron type which improvise Back Propagation Algorithm. Mean absolute percentage error (MAPE) values of less than 10 % were obtained. A software package known as DataEngine was selected as the tool for implementing the neural networks. Results from the neural networks were compared with results obtained from time series analysis on the same set of data.

The comparison revealed that forecasting by the neural networks yielded a better accuracy than forecasting by time series analysis. The study also points out the benefit and limitation of neural networks in forecasting when input data are highly fluctuated.

Keywords : Back Propagation / DataEngine / Forecasting / Hygrometers /Multilayer Perceptron / Neural Networks / Temperature / Time Series Analysis