

**DEVELOPMENT OF ARTIFICIAL NEURAL NETWORK
MODEL (ANN)
FOR MAXIMUM DAILY LOAD FORECASTING**

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ABSTRACT

This paper is concerned with the prediction of the daily peak value of the load in the power system using Artificial Neural Network (ANN). The objective of this project is to develop a program that could be used to predict the short-term load forecast for year 2007 using the Artificial Neural Network (ANN) model. 365 data is used in order to perform this model.

Artificial Neural Network (ANN) can be a problem solver for the future computing problems. It has an ability to perform task efficiently with a minimum time of determining the results. Furthermore, they can recognize patterns by a given data and generalize those data pattern into a pattern needed with the purpose of achieving a desired target. Thus, the implementation of Artificial Neural Network have been tried out where the quality of decision based on careful analysis of growth patterns is acceptable and accurate to forecast the future demands.

The network with single and two inputs is tested and involved of 365 data presented 365 days. The numbers of training and testing patterns are 329 and 36 respectively. Input of analysis is considered by the factor of previous year load data (year 2006 load data) and three different types of extra load for future purposes.

The effectiveness of this method is shown through the comparison of the actual load data with short term forecasted values. It proved that ANN method is suitable for forecasting the load demand for year 2007.

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CHAPTER 1.0

INTRODUCTION

1.1 Introduction

Load forecasting is an important work in power system. It has always been an essential part of an efficient power system planning and operation. Several electric companies have adopted the conventional method for forecasting the future load. In conventional method, the method is designed base on the relationship between load power and factors that influence the loads.

As an industrial country, Malaysia needs a reliable system that can be used to forecast the electric utility. Forecasting load is very significant to the electric utility in power system operation and managed the planning of electrical power generation so that the energy can be used efficiently. It means, that load forecasting become an important contribution that goes beyond the electrical distribution.

The motivation of accurate forecast lies in the nature of electricity as a commodity and trading article whereas electricity estimation of the future demand is necessary in managing the production and purchasing in an economically reasonable way. Load forecasts in this projects concentrates in Short-Term Load Forecasting where the prediction of time span varies between a few hours and about 1 week only.

Thus, the implementation of Artificial Neural Network have been tried out where the quality of decision based on careful analysis of growth patterns is acceptable and accurate to forecast the future demands.