

## **ABSTRACT**

Medical informatics is the application of computer technology, communications and information technology and system in medical fields. In Malaysia, medical informatics is a relatively young field, which is fast gaining popularity. This research is a step towards significant contributions in the field of medical informatics.

Medical prognosis is a prediction of the future course and outcome of a disease and an indication of the likelihood of recovery from it. Prognosis can be used to monitor the progress of treatment programmes as an aid in choosing treatment types and suitable methodologies. Prognosis can also help patients and their relatives plan their treatment options, and make decisions with regards to the quality of life, especially financial issues.

Artificial neural networks are useful tools for solving many real-world problems, which are utilized especially for complex data analysis. In the field of medicine, artificial neural networks have been applied to an increasing number of prediction and classification problems in recent years, initially as an aid to diagnosis and treatment, and lately as a tool for the analysis of survival data. The main advantage of a neural network is its ability to generalise to new situations. After being trained on a number of examples, neural networks can interpolate and extrapolate from the examples to induce a certain pattern of relationship.

Breast cancer is one of the more common cancers to afflict the female population. Breast cancer is a malignant tumour that develops from uncontrolled growth of cells in the breast. In this thesis, we describe the initial research on the use of artificial neural

networks to predict medical prognosis in the domain of breast cancer based on the cases seen in the University of Malaya Medical Centre from the year 1993 to 2002.