

**Universiti Teknologi MARA**

**The Development of Extra Axial Brain  
Tumor Detection Prototype Using Back  
Propagation Based Neural Network**

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Thesis submitted in fulfillment of the requirements for  
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## **DECLARATION**

Herein is being admitted that this report together with all this words, facts, and relevant materials are fully under my own, except several fact finding that each of their sources are been stated and clarified.

**27 APRIL 2006**

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## **ABSTRACT**

**This project is about detecting which type of extra axial brain tumor suffered by patient using the artificial intelligence approach. Artificial intelligence method that used in this system is artificial neural network. The neural network approach takes the concept of human brain. Knowledge appearance is compulsory for neural network in which it comes under the training phase before it recognize or detecting any pattern. A study about the artificial neural network has been done and back propagation training algorithm is suitable for this system development. A research about brain tumor also has been done and all data needed for this system was collected from Hospital Universiti Sains Malaysia (HUSM) Kubang Kerian, Kelantan. About 46 patients' data was collected from the Radiographic Department in that Hospital. All 46 patients' data in the form of Magnetic Resonance Image (MRI) analysis report are suspected suffering brain tumor. This system developed in order to assist the diagnosing process done by doctor when they referring the Magnetic Resonance Image (MRI) image of the patient and they try to make their impressions about the MRI features of each patient. With the help of this system, doctor can ease their diagnosing task by running this program and do some data training and then testing the data to get the better result. To ensure the performance of the system, some experiments are done by adjusting the network parameters of the back propagation training algorithm. So, neural network are able to capture the good and better result or detection even there are the presence of noise that other method normally fail and neural network becomes more popular as a technique to perform disease detection in medical diagnosing.**

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