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**Universiti Teknologi MARA**

**Effective Noise Removal Technique for  
Enhancement of the X-ray Image**

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**Thesis submitted in fulfillment of the requirements for  
Bachelor of Science (Hons) Information System Engineering  
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**APPROVAL**

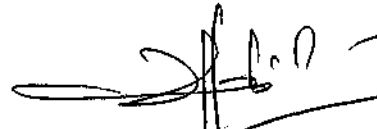
**EFFECTIVE NOISE REMOVAL TECHNIQUE FOR ENHANCEMENT OF THE  
X-RAY IMAGE**

by

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This thesis was prepared under the direction of the thesis advisor, Pn. Noor Elaiza bt Abdul Khalid and it has been approved by thesis supervisor, Dr. Noor Habibah bt. Arshad. It was submitted to the School of Information Technology and Quantitative and was accepted in partial fulfillment of the requirement for the degree of Bachelor of Information Technology.

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## **DECLARATION**

I certify that this thesis and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline

APRIL 01, 2005

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## **ABSTRACT**

The noise removal is an important aspect of image processing, because the human visual System is very sensitive to the high amplitude of noise signals, thus noise in an image can result in a subjective loss of information. There are a lot of methods for noise removal like the Median, Mean, Gaussian or other filter. But there are only few measuring methods for the quality of a smoothed image. In most cases the developed filters are tested on standard images. On the other hand it is difficult to decide, which filter should be used for a given image with noise introduced to it.

In this paper two methods for noise removal are introduced which are mean and median filtering in order examine important features for an automatic detection of adequate smoothing operators for a given noisy X-ray image. This paper tries to find the most suitable methods for noise removal and using the Signal-to-Noise Ratio to measure the noise.