

**Universiti Teknologi MARA**

**Breast Cancer Classification Using  
Mammography Image and K-Nearest  
Neighbour**

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**Thesis submitted in fulfilment of the requirement  
for  
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## **SUPERVISOR APPROVAL**

### **BREAST CANCER CLASSIFICATION USING MAMMOGRAPHY IMAGE AND K-NEAREST NEIGHBOUR**

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This thesis was prepared under the supervision of the project supervisor, Nur Nabilah binti Abu Mangshor. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfilment of the requirements for the degree of Bachelor of Computer Science.

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JANUARY 21, 2020

## **STUDENT DECLARATION**

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

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## ABSTRACT

Breast cancer is an abnormal cells that forms in breast of human body. Breast cancer in Malaysia is a major cancer among women, followed by cervical cancer. Mammogram image is needed by radiologist for breast cancer diagnosis, mammogram is considered to be the most popular and accurate method of cancer prevention. However, mammography images has a limitation such that it cannot detect any type of breast cancer, but because of its cheap and low complexity, it is still widely used in this world for breast cancer detection. In addition, the process of detecting tumour in dense breast tissue is not an easy process, as there is a weak contrast among their fatty tissue in mammograms. Several image processing techniques are currently being proposed to classify tumours in mammograms. Hence, this study purpose to implement image processing technique in classifying cancer in breast mammography image. This study used dataset which is composed of cancer and not cancer images are obtained from Mammographic Image Analysis Society (MIAS) dataset. For pre-processing, the image from the input is process using Image Enhancement, Image Thresholding and Image Segmentation technique Next, GLCM is used for the purpose of extracting the features from the mammography images and KNN classifier is used for the classification. Based on the testing that have been conducted on 113 images and the system achieved accuracy result of 57.52%. All in all, GLCM has been extract a total of 12 features from the image. About 65 total number of true result out of 113 mammography images have been test. This prototype met the objective to test the KNN classification technique accuracy. This KNN classifier and features in extraction process is not suitable for this project. For future enhancement, breast cancer classification can be test on other segmentation and machine learning technique in order to increase the accuracy.

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