UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

COMPARISON BETWEEN SEED BASED REGION GROWING AND OTSU THRESHOLDING METHODS IN SEGMENTING MICROCALCIFICATION ON MAMMOGRAM IMAGES

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ABSTRACT

Segmentation method is a challenging method especially in detection of microcalcification in mammogram images. It can be categorized into two which is region and boundary segmentation. However, boundary segmentation is sensitive to noise, complex images will often produce missing edges. Thus, this study attempt to compare the performance of two region based on segmentation method which is Seed Based Region Growing (SBRG) and Otsu Thresholding in terms of accuracy and sensitivity. SBRG method implements a segmentation of an image with regards to a point known as seed while Otsu Thresholding method is one of the most attractive methods for segmenting natural images because it selects a threshold value that maximizes the between-class variance. The proposed methods are tested on 61 mammogram images confirm by radiologist that consist microcalcification. The experimental result show that SBRG positively segment 42 microcalcification images with accuracy 93.27% and sensitivity 92.86% meanwhile Otsu Thresholding has successfully segment 25 microcalcification images with accuracy 91.63% and sensitivity 88.00%. Hence, this implies that SBRG method is better segmentation method in segmenting microcalcification om mammogram images.