

Universiti Teknologi MARA

Shape-Based Segmentation of Nucleus Cell

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ABSTRACT

This thesis presents a shape-based segmentation of nucleus cell. Immunohistochemistry (IHC) is commonly used by pathologists to detect specific types of cells. The use of IHC has found for many areas of applications especially in prostate cancer diagnosis. Commonly, diagnostic decisions are made by assessing sample cells. Pathologists will evaluate the cells from diverse diagnostically important parameter including number, size, shapes and textures of cells. However, the cell may be clustered and the image may have a lot of noise that make the diagnosis hard to be precise and accurate. Therefore, the following processes are being applied to segment the abnormal cell. The first step involves the converting RGB color image to gray scale color. The second step involves applying threshold to the image. The third step involves shape feature extraction where the shape is defined by area, compactness and eccentricity. The method was applied to 20 abnormal cell images and the result shows the segmented of abnormal cell.