

ABSTRACT

Vessel segmentation of fundus retina is important for Biomedical Sciences in diagnosing ailments related to the eye. Segmentation can simplify medical experts in diagnosing retinal fundus image State.

Therefore, in this final task, author of designing a software using MATLAB which system was able to segment the retinal blood vessels on retinal fundus images. There are two main steps in the process of segmentation. The first step that is doing the image preprocessing that aims to improve the quality of the image to be segmented with optimal. The second step is the segmentation of the image in order to perform the extraction process so that retrieved the blood vessels of the retina of the eye fundus image. using Morphology Operation and Discrete Wavelet Transform and combine the methods of Morphology and Discrete Wavelet Transform Operation.

The amount of data that is used as many as 40 in the retinal image join 40 image segmentation by manual. In this research, conducted an analysis of the performance of the system using the Confusion Matrix. So the obtained average results accuracy using Morphological methods of operation in the can yield an average accuracy of 88.45865% while for Discrete Wavelet Transform of 89.2753406%. and for the method of combined Operations between Morphology and Discrete Wavelet Transform produces the accuracy of 89.53365%

Keywords: *The eye, Image Detection, segmentation, discrete wavelet transform, Morphology Operation*