

ABSTRACT

The heart is the main source of bodily function that is fragile to diseases. Electrocardiograph (ECG) is a commonly used equipment in the health sector that is used to record the signal wave activity of the heart. This final project implemented Matlab to design an image converter software to convert the ECG data in the form of photographic images(.jpeg) to form a signal(.mat). This project aims to help physicians and doctors to store and analyze the ECG data to a computer for further disease diagnosis. With this method, the image signal information related to the intrinsic functions included in the image ECG data can be extracted and separated from the noise and the original ECG data can be obtained for further analysis.

In this research, the program was designed using Matlab with pixel extraction technique that means limiting the value of pixel in the image that meets the experiment criteria of more than 10 and 20 pixel and threshold at 0.5 and 0.8. with the main goal to get back the remaining value into a new image and then plot it. This technique is used to separate the background and noise of the image with the desired signal.

The results of this study shows that pixel extraction technique can produce signals with the best average value of *0.264* from *Normalized Cross Correlation*, *0.785* from *Structural Similarity Index*, and *595.95* for *Mean Squared Error*

Keywords: ECG,Pixel Extraction,SSMI,NCC,MSE