ABSTRACT

Breast cancer is the second most lethal cancer for women. Mammography is one of some alternatives to examine it, while mammogram is the image produced by mammography. In mammogram, the existance of cancer is showed by mass and microcalsification.

The using of digital image processing helps the radiologs to diagnose mammogram based on computer. This project aims to produce a tool to diagnose and classify type of breast cancer automaticaly into benign or malign, besides to analyze the performance of wavelet filter from Symlet family.

Generally, the system of breast cancer detection consists of two main parts, image processing using texture anlysis and classification using back-propagation neural network. Symlet filter is used to extract the feature of edge details which are located at high frequency subband in image. Statistical approach is used to get the feature vector as the input of neural network.

Previous research that applied the Euclidean method resulted in 70% of accuracy, while others that tried to apply the Coiflet 5 method with a BP neural network resulted 87.5% of accuracy. As a comparison, this project, which is applying some Symlet filters as its feature extractor. The best accuracy is reached by using Symlet 8. The accuracy is 100% for trainning data set and 86.67% for testing data set.