

Asmaria, Talitha, 2012, Detection Of Twelve Leads Electrocardiogram Signal To Identify Cardiac Abnormalities Using Artificial Neural Network With Backpropagation Method. Final project was under guidance Imam Sapuan, S.Si, M.Si and Endah Purwanti, S.Si., M.T., Department of Physics, Faculty of Sains and Technology, Airlangga University, Surabaya

ABSTRACT

A research has been conducted to detect the twelve leads of electrocardiogram signal to identify cardiac abnormalities using artificial neural network with backpropagation method. This study aimed to obtain the image features that can be used as input of the software and get optimal parameter values of backpropagation, and get an optimal value of accuracy of the software. In this research, the software was designed using interface which aims to allow users to easily use the software. The software was designed using two artificial neural networks, which for detected abnormalities of wave on leads and finally identified cardiac abnormalities. Backpropagation parameters of this software was the number of hidden layer was fifteen, the value of learning rate was 0,1, the maximum epoch was 1000, and the error target was 0,001. The software has been conducted to detect cardiac normality, left atrial hipertrophy, right ventricular hipertrophy, and, cardiac abnormalities. The software has been tested to detect cardiac abnormalities on ECG images with an accuracy rate was 93,33%.

Key words : *artificial neural network, backpropagation, cardiac*