

## ABSTRACT

This thesis talk about neck disorder detection using computerized iridology based on kohonen artificial neural network. Iridology is a methode to reveal the condition of the organ and the network of the human with take handle by iridologist doctor with take picture bith of irish of patient using digital camera. And supervise irish on LCD or computer monitor. Thesis about computerized iridology has been done before this time. It is used to be the back propagation neural network, one of the algorithm of supervised learning as its classification.

Kohonen artificial neural network that using unsupervised learning when its training is need to be input vector consist of  $n$  component that will be classified in maximum  $m$  cluster. The output of the network is cluster that the most nearest/similar with inputs that are given. Size of the nearment that usually used is Euclidean distance that is the most minimum. Nevertheless, kohonen JST algorithm can become solution accurately and flexible for shape of recognition environment that is changed.

In this thesis, disorder detection of neck organ is designed based on segmentation step, extract of texture variation, and shape recognition of kohonen artificial neural network. Input is irish of patient that take disorder of neck and 4 node of output layer kohonen, system can determine 4 stadium disorder of neck, namely acute, subacute, chronic and degeneration in fast time with the high accuration.

Based on the result of experiment, there is got the accuration of system 100 % for each stadium with average time for the detection with Kohonen Artificial Neural Network for left irish is 0.69 second and right irish is 0.72 second. From the result of experiment, with average process time that short enough for 1 sample, so that development system for real time application can be done.