

## Abstract

In my final project, implemented 2D Gabor Wavelet as a method of feature extraction and Artificial Neural Network Learning Vector Quantization (LVQ) as a method of images recognition. The images will be classified into two classes which are pornographic images or non-pornographic images. The images size used during the construction of knowledge is a 40x40 pixel with 90 training data, 30 validation data and 40 test data. By using this method, the accuracy at of construction the knowledge is 100% for training data, 100% for validation data and 97.5% for testing data. The best system accuration of detection pornographic images using shifting pixel 5 reaches 95,5%. But the best system accuration of detection pornographic and non pornographic images using shifting pixel 10 reaches 83,53%.

2D Gabor Wavelet is a feature extraction that has the ability to differentiate various textures based on various frequency and spatial orientation. Learning Vector Quantization is a Artificial Neuron Network with supervised learning. LVQ is only has 1 hidden layer and 1 linear layer so that rapid process of learning / knowledge development and detection process. Highest accuracy at the time of construction of knowledge obtained with Gabor Wavelet frequency parameters 2, 3, 4, 5, 6 orientations  $30^0$ , kernel size 7 and the parameters of LVQ are 4 hidden neurons and learning rate 0.04. Knowledge development done by using 90 training data, 30 data validation and 40 test data.

**Keyword:** classification pornographic images, *Gabor Wavelet*, *Learning Vector Quantization (LVQ)*