ABSTRACT

The growth of information technology is motivates to produce a new inovation that follow into optimization system. This optimization based on artificial intellegence in order to make a system work automatically in identifying an object. In this reasearch, vehicle image is used for an input system. Pass through of image processing, the vehicle image from database is firstly processed into wavelet transform that used for feature extraction of image input. Wavelet transform is produced a representation multi resolution of original image. Then, vehicle image can be identified and classified into specific category of vehicle. The results of preprocessing image using wavelet transform will be inputs for artificial neural network in order to make a decision on identifies that image.

There is approach for classify in order to obtain result analysis perfectly which is based on artificial neural network theory. Classification in neural network is an algorithm that adapts from capability human brain in computation. Artificial neural is simply emulation from biology neural that its takes the information from sensor or other artificial neural, doing simply operation on the data, and forward results into the other neural. In this research is trying to design and implementation of backpropagation neural network method for system classification of vehicle. Backpropagation neural network contains three phases in learning the system to recognize spectral data model of image in every pixel; forward propagation, backward propagation, and weight adjustment.

This research produces system classification of vehicle that gives level accuracy until 100% toward process testing using image learning and 85% using image testing. Beside of that, process testing need elapsed time between 0.129758 – 0.214593 seconds. It means, this system can be implemented on real time.

Keyword: Wavelet Transform, Artificial Neural Network, Backpropagation