ABSTRACT

Transformation coding method has been using a lot in practice for image data compression system. Coding and digital compression are used to reduce memory which is used to present and save image data as well as data dispatch. One of coding method and image data compression is transformation method. Transformation method is applied a lot in image data coding because of its ability to reduce redundancy information, so that big compression can be achieved.

In this thesis, is done the research about the ability of wavelet transformation, included adaptive quantization technique and redundancy erasing method (Huffman Coding) for image data processing. This research is realized by using software named MATLAB 7.0 with criteria work experiment result is measured in form of MSE value, MAD value, and SNR value of reconstruction result image.

The elements that influence compressed image quality are image characteristic, filter type and scale that are used in the process. From the work experiment, it is known that reconstruction image which has been processed by wavelet transformation, give MSE and MAD values is 7.64 dB or SNR value is 23.15 dB. This means that reconstruction result image is almost the same or approach the first image. The quantization also influences on the SNR, so that the best method which does not too influence on SNR is very needed.

The elements which influence reconstruction result image by using wavelet transformation are image characteristic, filter type and cost function which is used in the process.