Abstract

Satellite imagery results from remote sensing images that taken by satellit from space. Object recognition with texture analysis on the satellite imagery is a process where satellite imagery can be identified by calculating the texture features based on statistical calculations. By implementing object recognition on satellite images, it will result a new image that represents the color of the object represented. Objects are identified: water, clouds, roads, trees, and buildings.

Satellite imagery that viewed from above will look like texture. Therefore, texture analysis is used to obtain feature from the object on the satellite image. One method that can be used to classify object recognition to satellite imagery is with Backpropagation Neural Network. This method has the ability to learn like a human's brain. Backpropagation trains it network to achieve balance within network ability to recognize patterns used during training.

This final task will implement Backpropagation Neural Network method to perform training and classification of satellite imagery of the objects. The final task is to analyze the combination of Backpropagation learning parameters and to analyze the influence of the wavelet energy calculation on the results of object recognition. From these project results, built system could recognize object on the Earth's surface to the level of recognition accuracy by 82,67%. Differences wavelet used also affects the system's ability to recognize objects accurately

Keywords*: Object Recognition, Satellite Imagery, Backpropagation, Wavelet, Texture Analysis*