

ABSTRACT

The development of information technology has motivated people to create a system which is able to identify several types of area using remote sensing image as the initial state of the digital image processing. This study makes use of Google earth remote sensing images. The Google earth sensing is satellite based, where they are used as the analysis materials.

The initial image is processed using wavelet transform which is suitable for feature extraction. The wavelet transform provides the multi resolution representation from the original image. For the Google earth image identification, the process should be done in several steps, i.e., image acquisition, pre-processing, feature extraction using 2D Gabor Wavelet, and the identification using K-Nearest Neighbors (KNN).

In this final project, the result of the remote sensing image will be categorized into the urban, suburban and rural area. The evaluation is done using simulation on Matlab 7.4. The K-Nearest Neighbors (KNN) can identify the type of the area using three distance methods, namely Euclidean, Cityblock, and Mahalanobis. Those methods provide the success rate about 86.67%, 83.33%, and 81.11% respectively.

Keywords: Google Earth, Remote Sensing, 2D Gabor Wavelet, K-Nearest Neighbors.