REFINING IMAGES USING MERGING PIXEL VALUES AND PIXELS INSERTION TECHNIQUES

A THESIS

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ABSTRACT

Ruland K. N. Rantung. (2004). *Refining Images Using Merging Pixel Values and Pixels Insertion Techniques*.

The purpose of this research is to refine remote sensing image, in this case we use panchromatic image, to support further process that is classifying objects. This research explored the structure of panchromatic image and the possible operation or techniques to make this image shapes contained clearer. Image illustration is used to explain the structure of panchromatic image.

There are three main steps in image analysis to refine panchromatic image. First, increase the image resolution or image magnification. Second, the process of merging pixel values and the last is pixels insertion. The first step is required to support the third step in order to enable increasing the numbers of control points. The last step becomes the most important operation for classifying objects.

By applying the steps of techniques in image analysis, the process of classification will be easier, and it can make a possibility of decreasing the deviation of identifying objects. Full general algorithm in this research represents the whole process and steps in classifying objects and this research place on that steps.

Keywords: Digital Image, Panchromatic Image, Image Resolution, Pixel Neighborhood.

ABSTRAK

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Maksud dari penelitian ini, yaitu untuk memperbaiki citra yang dihasilkan oleh remote sensing, dalam hal ini citra panchromatic, untuk mendukung proses selanjutnya, yaitu pengklasifikasian objek. Penelitian ini mengeksplore struktur dari citra panchromatic dan operasi–operasi atau cara-cara yang dimungkinkan untuk membuat garis–garis pembentuk objek didalam citra menjadi lebih jelas. Illustrasi citra digunakan untuk menjelaskan struktur dari citra panchromatic.

Ada tiga tahap besar dalam analisa citra untuk memperbaiki citra panchromatic. Pertama, penambahan resolusi citra atau perbesaran citra. Kedua, penggabungkan nilai pixel, dan terakhir, penyisipan pixel. Tahap pertama diperlukan untuk mendukung tahap ketiga, dalam hal ini untuk memungkinkan penambahan jumlah *control points*. Tahap terakhir merupakan operasi yang paling penting untuk pengklasifikasian objek.

Dengan menerapkan teknik atau cara–cara yang dibahas dalam analisa citra, proses pengklasifikasian object pada citra akan menjadi lebih mudah, dan membantu mengurangi deviasi atau penyimpangan dalam proses pengidentifikasian objek-objek dalam citra. Algoritma lengkap pada penelitian ini menunjukan semua proses secara keseluruhan dan langkah–langkah didalamnya untuk mengklasifikasi objek dan menunjukan posisi dari penelitian ini pada algoritma tersebut.

Kata kunci: *Digital Image, Panchromatic Image, Image Resolution, Pixel Neighborhood*.

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"*Life starts from the death*"

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