Sistem pengklasifikasian kanker payudara berbasis ciri gray level co occurrence matrix glcm dan discrete wavelet transform dwt menggunakan support vector machine svm = Breast cancer classification system based on gray level co occurrence matrix glcm and discrete wavelet transform dwt features using support vector machine svm

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Abstrak

[ABSTRAK
Kanker payudara adalah tumor ganas yang tumbuh akibat pertumbuhan sel-sel jaringan yang tidak normal pada jaringan payudara. Kanker payudara pada wanita merupakan penyakit yang kini paling banyak diderita dibandingkan jenis kanker lainnya. Cara yang dilakukan agar penyakit ini tidak memiliki kesempatan untuk menyebar adalah dengan mendeteksinya sedini mungkin dengan menggunakan mammografi.

Pada penelitian ini penulis telah merancang suatu sistem yang menggunakan komputer untuk mendeteksi dan mengklasifikasi kanker payudara pada citra mammogram. Citra mammogram yang digunakan adalah citra mammogram dari Mommographic Image Analysis Society (MIAS) yang terdiri dari 322 citra. Pengolahan awal citra pada sistem ini menggunakan metode Otsu Thresholding, pendeteksian tepi dengan menggunakan metode Canny, dan metode dilasi. Ciri yang digunakan pada sistem ini adalah Gray Level Co-occurrence Matrix (GLCM) dan Discrete Wavelet Transform (DWT). Metode pengklasifikasian yang digunakan pada penelitian ini adalah Support Vector Machine (SVM).
Sistem memiliki ketahanan yang baik terhadap noise salt and pepper pada nilai noise tertentu pada tiap jenis citra mammogram yang digunakan. Tingkat keakuratan berkisar 80% pada saat diberi noise sebesar -16dB pada citra mammogram jinak dan ganas. Keakuratan sistem juga teruji cukup baik untuk jumlah data latih yang hanya sebesar 70% dimana tingkat keakuratan pendeteksian dan pengklasifikasian adalah sebesar 80,6%.
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ABSTRACT
Breast cancer is a malignant tumor that grows as a result of the growth of tissue cells that are not normal in the breast tissue. Breast cancer in women is a disease that is now the most common cancer than other types. How that is done so that the disease does not have a chance to spread is to detect it as early as possible by using mammography.

In this study, the authors have designed a system that uses a computer to detect and classify breast cancer on a mammogram image. Mammogram image has been taken from Mommographic Image Analysis Society (MIAS) which consists of 322 images. Initial processing images on this system using Otsu Thresholding, edge detection using Canny method, and the method of dilation. Features used in this system is the Gray Level Co-occurrence Matrix (GLCM) and Discrete Wavelet Transform (DWT). Claassification method was used in this study is Support Vector Machine (SVM).

The system has good resistance to salt and pepper noise on certain noise value for each type of mammogram image are used. The accuracy range was 80% when given the noise of -16dB on mammogram images of benign and malignant. The accuracy of the system was also tested well enough for the amount of training data that only 70% where the level of detection and classification accuracy is 80,6 %.;Breast cancer is a malignant tumor that grows as a result of the growth of tissue
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