Abstract

Breast cancer is one of the most important causes of increased women death rate in the world. Mammography is the most efficient approach for the early identification of breast diseases. The major objective of mammography is to identify small, non-palpable cancers during its premature stage. On the other hand, mammograms are extremely complicated to interpret being the fact that the pathological transformations of the breast are slight and their visibility is very poor with low contrast and noise. Mammograms have the valuable information such as microcalcifications and masses, which are extremely complicated to identify because mammograms are of low-contrast. Since the mammogram images are very noisy, low-contrast, blur and fuzzy, it is necessary to enhance the mammogram images for accurate identification and early diagnosis of breast cancer. In this paper, proposed an efficient technique to enhance the mammogram image using various transforms. The various transforms are wavelet transform, Curvelet transform, contourlet transform, Nonsubsampling transform. The drawback of wavelet transform is the method in which problem of filling missing data will occur. In Curvelet method the disadvantage is poor directional specificity of the images. In contourlet transform the image enhancement cannot capture the geometric information of images and tend to amplify noises when they are applied to noisy images since they cannot distinguish noises from weak edges. This entire drawback is overcome by the Nonsubsampling Contourlet.
transform. In order to determine the effectiveness of the proposed technique, experiments were carried using two UCI machine learning dataset and evaluated based on the PSNR value and MSE.

References


An Efficient Way to Enhance Mammogram Image in Transformation Domain


Index Terms

Computer Science
Image Processing

Keywords
Mammogram Images
Wavelet Transform
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Contourlet Transform
Non Subsampled Transform

and Image Enhancement