Abstract

Automated Breast Ultrasound (ABUS) is an image interpretation to detect the breast tumors. Tumor detection has become a challenging task, due to the presence of poor image contrast, speckle noise and irregular tumor shape. The scope of the work is to remove the speckle noise efficiently while preserving important information from the tumor boundaries. Bilateral filter and the Bivariate Shrinkage Function is applied to the automated whole breast ultrasonic image for the removal of speckle noise. A topographic watershed transform is implemented for ABUS image segmentation process where the précised contour of breast tumors is extracted automatically. This segmented lesion extracts various features like GLCM features, Tamura features, MCHOG features and shape features. Binary logistic regression classifier is applied to the selected feature vectors to analyze the tumor and non-tumor images.

References

Index Terms

Computer Science

Image Processing
Keywords
Bilateral filter  bivariate shrinkage  Topographic watershed transform  feature extraction
Binary logistic regression.