An Automated Classification of Microcalcification Clusters in Mammograms using Dual Tree M-Band Wavelet Transform and Support Vector Machine

Abstract

Breast cancer is the second leading cause of cancer deaths after lung cancer. In order to avoid mortality due to breast cancer, an efficient computer aided diagnosis system for early prediction of breast cancer is needed. In this paper, an efficient computerized system is designed for the classification of Microcalcification Clusters (MC) in digitized mammograms. The proposed system uses Dual Tree M-Band Wavelet Transform (DTMBWT) to represent the digital mammogram in a multiresolution manner and Support Vector Machine (SVM) for classification. The extracted sub band energies from DTMBWT decomposed mammograms are used as distinguishable features for the classification of MCs into either malignant or benign by SVM classifier. The results show that the proposed DTMBWT based classification system achieves 91.83% accuracy on Mammographic Image Analysis Society (MIAS) database images.

References

Moments based Classification of Microcalcification in Digital Mammograms. Journal of Computer Science, 7(10), 1541-1544.

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