

Diagnosing breast masses using ICA and non-image features

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One of the most challenging task for Computer Aided Diagnosis (CADx) systems designed to diagnose breast cancer is to be able to differentiate between benign and malignant masses. In this work we present a study made as part of an ongoing project whose aim is to develop an image-based CADx system for diagnosing mass lesions. Our system is based on image-based and non-image features. Image-based features are obtained using Independent Component Analysis (ICA), and both age and mammogram density are tested as non-image features. Performance results are provided for all the valid masses in a public database, obtaining a statistically significant improvement by adding age to image-based features. However, the addition of the density of the mammogram does not improve the system performance. Key words: breast cancer diagnosis, Independent Component Analysis, malignant breast masses, DDSM, feature extraction