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# Improved Automatic Detection of Microcalcification Clusters in Digital Mammograms

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**Abstract** In this research, a new detection system is presented for detection of microcalcification clusters in mammograms. Microcalcification clusters appear in heterogeneous background as groups of very fine bright dots and due to noisy nature of mammograms, it's very hard for radiologists to detect them. This study aims at introducing a tool that explains whether an output image has microcalcification clusters or not, after processing it with high accuracy. For this purpose, a pre-processing stage is proposed to reduce the number of false positives and also noise removal mammograms with preserving original details of image, is done by discrete wavelet transform (DWT). For better detection of microcalcification clusters, they are enhanced by histogram equalization along increment level control and then edge detected by sobel operator. In classification module, gray-level co-occurrence matrix (GLCM) is used for extracting 20 texture features and also support vector machine (SVM) is applied as classifier. This method had experiment on MIA's database, microcalcification clusters detected by 75% accuracy in mammogram images.

**Keywords :** Keywords: computer detection systems, microcalcification clusters, sobel operator, histogram equalization, support vector machine.

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