

# CLASSIFICATION OF MICROCALCIFICATIONS INTO BI-RADS<sup>TM</sup> MORPHOLOGIC CATEGORIES - PRELIMINARY RESULTS

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## **Abstract**

In the paper, preliminary results for the classification of microcalcifications (MCs) into the three BI-RADS<sup>TM</sup> morphologic categories (punctate, pleomorphic and linear) are presented. To classify the microcalcifications into morphologic types the set of 27 shape descriptors was constructed. The morphology of the cluster was determined as the mean values of shape descriptors for single microcalcifications. SVM classifier was used to differentiate MCs clusters into BI-RADS morphologic types. Classification of the clustered MCs into linear or pleomorphic morphologic types obtained accuracy ranging from 84 to 88% depending on the MCs features and the SVM parameters. The most discriminate features for the classification of clustered linear and pleomorphic MCs are: inner compactness, major axis and first invariant shape moment calculated from binary image of segmented MCs.

**Keywords:** clustered microcalcifications, microcalcifications morphology, BI-RADS, classification, SVM (Support Vector Machine)