Abstract

In the design and development of an automated CAD tool for breast cancer detection and diagnosis, the various steps include enhancement, segmentation, feature extraction, feature selection and classification. The feature selection plays an important role in the design of the said CAD tool as it aims towards the redundant feature elimination and relevant feature selection. The selected feature set also decides the efficacy of the chosen classifier for classification of mammograms. In literature, various filter based feature selection methods exist under unsupervised and supervised categories based on different basis criterion. The filter based feature selection methods ranks the extracted feature sets based on some criteria in descending order of their importance. The various methods produce different feature subsets which are associated with different performance measures. In this paper, an evaluation and comparative study of various unsupervised and supervised feature selection methods are presented for breast cancer classification from digital mammograms though various classifiers. The study aims towards finding out the better feature selection method and associated classifier which gives better performance.
Empirical Analysis of Supervised and Unsupervised Filter based Feature Selection Methods for Breast Cancer Classification from Digital Mammograms

References

Empirical Analysis of Supervised and Unsupervised Filter based Feature Selection Methods for Breast Cancer Classification from Digital Mammograms

1080-1092.

Index Terms

Computer Science       Image Processing

Keywords

Supervised feature selection methods       unsupervised feature selection methods
comparative study

classifier selection

CAD tool

breast cancer detection

MIAS database.