Abstract

Detection and quantification of breast cancer is a very critical step in mammograms and therefore, needs an accurate and standard technique for breast tumor segmentation. In the last four decades, a number of algorithms have been published in the literature. Each one has their own merits and demerits. The aim of this paper is to make a comparative analysis of the most promising methods, namely fuzzy c-means (FCM), k-means (KM), marker controlled watershed segmentation (MCWS) and region growing (RG), for the detection and segmentation of masses in mammographic images on real data obtained from Metro Hospital. Robustness of the methods is demonstrated by validating their quantitative results with expert manual data. It is observed that the RG gives better results compared to three other methods.

References

Performance Analysis of Image Segmentation Methods for the Detection of Masses in Mammograms

Recog. 39, 646-668.

Index Terms

Computer Science

Image Processing
Keywords

Breast cancer  mathematical morphology  marker controlled watershed segmentation  region growing.