

A Novel Method for Detecting Breast Cancer Location Based on Growing GA-FCM Approach

ABSTRACT

The main idea of this article is to provide a numerical diagnostic method for breast cancer diagnosis of the MRI images. To achieve this goal, we used the region's growth method to identify the target area. In the area's growth method, based on the similarity or homogeneity of the adjacent pixels, the image is subdivided into distinct areas according to the criteria used for homogeneity analysis to determine their belonging to the corresponding region. In this paper, we used manual methods and use of FCM as the function of genetic algorithm fitness. The presented algorithm is performed for 212 healthy and 110 patients. Results show that GA-FCM method have better performance than hand method to select initial points. The sensitivity of presented method is 0.67. The results of the comparison of the fuzzy fitness function in the genetic algorithm with other technique show that the proposed model is better suited to the Jaccard index with the highest Jaccard values and the lowest Jaccard distance. Among the techniques, the presented works well because of the similarity of techniques and the lowest Jaccard distance. Values close to 0.9 are close to 0.8.