Abstract

Medical image segmentation is a very important part of computer assisted diagnostic tools. The brain MR images segmentation is a complex and challenging task. However, precise segmentation of these MR images is very significant for detecting lesions. Segmentation of MR images may assist in tumor diagnosis and treatment by tracking the progress of tumor growth. The Magnetic Resonance Imaging has been proved to provide high resolution medical images and is widely used especially for brain. In this paper, a novel clustering using the swarm intelligence algorithm is presented for the segmentation of brain MR images, intensity – based segmentation using artificial bee colony clustering has been implemented. Statistical tests performed on both real and simulated brain MR images shows good results, which ensures the application of this segmentation algorithm to different medical images and further investigation.

References


**Index Terms**

Computer Science  
Algorithms

**Keywords**

Artificial swarm intelligence, Brain MR images, Lesion segmentation, Edge enhancement.