Abstract

Aim of this paper is to develop an efficient fuzzy c-mean based segmentation algorithm to extract tumor region from MR brain images. First, cluster centroids are initialized through data analysis of tumor region, which optimizes the standard fuzzy c-mean algorithm. Next, reconstruction based morphological operations are applied to enhance its performance for brain tumor extraction. The results show that simple fuzzy c-mean could not segment the region of interest properly, whereas enhanced algorithm effectively extracts the tumor region. From comparison with existing segmentation methods, enhanced fuzzy c-mean algorithm emerges as the most effective algorithm for extracting region of interest.
Performance Improvement of Fuzzy C-mean Algorithm for Tumor Extraction in MR Brain Images

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- MATLAB statistics toolbox.

**Index Terms**

Computer Science Pattern Recognition
Keywords

segmentation  brain tumor extraction  thresholding  fuzzy c-mean  k-mean  morphology  markers