Abstract

Segmentation of human brain from MRI without human interference is a major challenge in the field of medical image processing. Brain segmentation is used to extract different features of the image for analyzing, interpretation and understanding of images. The objective of brain MRI segmentation is to precisely identify the major tissue structures in these image volumes. There are a number of methods exist to segment the brain. In this paper, we have implemented a new approach based on adaptive thresholding and K-means clustering algorithm, which is used to get cerebrospinal fluid (CSF), Gray Matter (GM), White Matter (WM) and others. In order to segment an image thresholding method is adopted but a fixed threshold is not appropriate for segmentation, if the background is rough, hence adaptive thresholding method is more suitable for segmentation and K-means clustering algorithm is also used for segmenting MR brain image into K different tissue types, which include gray matter, white matter, and CSF. The efficiency and accuracy of the algorithm are proven by the experiments on the MR brain images.

Index Terms

Computer Science

Image Processing

Keywords