Abstract

The paper presents a method for automatic segmentation and calculation of tissue volume in brain MRI images. This is essential for radiologists since different diseases alter the tissue volume. Since the boundaries are complex, Modified Fuzzy C means (MFCM) is used to segment brain MRI image into three tissues namely white matter (WM), grey matter (GM) and cerebrospinal fluid (CSF). The MFCM segmentation results obtained are input to the level set methodology for refinement of results. We have used the methodology on 100 different brain MRI images of both male and female. The percentage of WM, GM and CSF calculation is done using pixel counting method. The results indicate that there is no much difference in the tissue volume.
A Fuzzy-C-Means Approach for Tissue Volume Estimation in Brain MRI Images

Volumes of male and female. This method can be used to estimate the tissue volume in different diseases and in different age groups.

References

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Index Terms

Computer Science
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Keywords

Brain MRI  Fuzzy Logic  Level Set  Tissue  Segmentation  Volume