Detection and Segmentation of Brain Tumor by Thresholding and Bounding-Box using K-Means as a Seed

Abstract

Brain tumor is a mass of abnormal cells replicating in an uncontrolled manner. It affects the growth and function of normal cells in brain and occupies the space in brain. It causes interruption of brain cell function and cause damage to life. Accurate detection and segmentation of brain tumor is challenging task due to several reasons like complex brain structure, increasing data flow, inhomogeneity etc. This paper presents a novel method to segment brain tumor in T1-weighted MRI images by employing K-means followed by a thresholding technique and bounding box method by combing these different techniques accuracy of detecting the tumor portion can be increased and finally all the features of the detected tumor such as centroid, solidity, perimeter, area and segmented area and extent are extracted.

References

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Index Terms

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Image Processing
Keywords

K-means technique, Bounding-box, Thresholding, MRI brain images, Fuzzy c-means method.