Tumor Boundary Extraction Using Intensity and Texture-Based on Gradient Vector

Authors : Namita Mittal, Himakshi Shekhawat, Ankit Vidyarthi

Abstract : In medical research study, doctors and radiologists face lot of complexities in analysing the brain tumors in Magnetic Resonance (MR) images. Brain tumor detection is difficult due to amorphous tumor shape and overlapping of similar tissues in nearby region. So, radiologists require one such clinically viable solution which helps in automatic segmentation of tumor inside brain MR image. Initially, segmentation methods were used to detect tumor, by dividing the image into segments but causes loss of information. In this paper, a hybrid method is proposed which detect Region of Interest (ROI) on the basis of difference in intensity values and texture values of tumor region using nearby tissues with Gradient Vector Flow (GVF) technique in the identification of ROI. Proposed approach uses both intensity and texture values for identification of abnormal section of the brain MR images. Experimental results show that proposed method outperforms GVF method without any loss of information.

Keywords : brain tumor, GVF, intensity, MR images, segmentation, texture
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