Abstract

In MRI images Intensity inhomogeneity (IIH) occurs due to various factors which cause many difficulties in image segmentation. This paper proposes a region based active contour model which deal with Intensity inhomogeneity (IIH) and known as level set formulation (LSF) for image segmentation. The data fitting energy is defined with a contour and two fitting functions that approximate the image intensities locally on two sides of the contour. The level set formulation applies this energy to a level set regularization term, which derives a curve evolution equation for energy minimization. The information of intensity in local regions of image is extracted using a kernel function in the data fitting term, which guide the motion of the contour and enables the proposed method to cope with intensity inhomogeneity. This method not only
segments the image but simultaneously estimates intensity inhomogeneity / bias field and results the bias corrected image.

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Index Terms

Computer Science
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Keywords
Image Segmentation  Intensity Inhomogeneity  Bias Estimation  Bias Correction  Level Set Method.