Energy based Methods for Medical Image Segmentation

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Abstract

Health care applications have become boon for the healthcare industry. It needs correct segmentation connected with medical images regarding correct diagnosis. An efficient method assures good quality segmentation of medical images. Segmentation methods are classified as edge based, region based, clustering based, Level set methods (LSM) and Energy based methods. In this paper, a survey on all the effective methods those are capable for accurate segmentation is given, however quick process employing correct segments is still difficult. Some existing methods do correction and some badly pertain to deep irregularity in images. The wide range of the problems of computer vision may make good use of image segmentation. This paper studies and evaluate the different methods for segmentation techniques. This study is useful for determining the appropriate use of the image segmentation methods and for improving their accuracy and performance and also works on the main objective, which is designing new algorithms. The main goal is to make the image more simple and meaningful. After a brief description of each method an experimental comparison of some empirical (goodness and discrepancy) methods commonly used is then given to provide a rank of their
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evaluation abilities. This study is helpful for an appropriate use of existing segmentation methods and for improving their performance as well as for systematically designing new segmentation methods.

References


Index Terms

Computer Science       Image Processing

Keywords

Active contour models, Clustering based segmentation, Energy based method, Hybrid method, Intensity irregularity, Level set method, Local image fitting, Local binary fitting, Medical image segmentation, Region Based Segmentation.