

第 1 条，共 1 条

标题: Fuzzy Region-Based Active Contours Driven by Weighting Global and Local Fitting Energy
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摘要: Active contour model (ACM) has been a successful method for image segmentation. The existing ACMs poorly segment the images with intensity inhomogeneity or non-homogeneity, and the results highly depend on the initial position of the contour. To overcome these disadvantages, we proposed a fuzzy region-based active contour driven by weighting global and local fitting energy, wherein we propose a fuzzy region energy with local spatial image information, which has been proved convex and ensures the segmentation results independent of initialization, to motivate an initial evolving curve of pseudo level set function (LSF), followed by the pseudo LSF and further smoothed by an edge energy to accurately extract the object boundaries and maintain its distance feature. In addition, in the fuzzy region energy, instead of using the Euler-Lagrange equation to minimize the energy functional, we develop a more direct method to calculate the change of the fuzzy region energy. The experimental results on synthetic and real images with high noise and intensity inhomogeneity show that the proposed model can obtain better performance than the state-of-the-art active contour models, and takes less running time. The code is available at: <https://github.com/fangchj2002/FRAGL>.

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