

第 1 条，共 1 条

**标题:** Fuzzy region-based active contour driven by global and local fitting energy for image segmentation

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**摘要:** This paper presents a novel global and local fuzzy image fitting (GLFIF) based active contour model for image segmentation. First, we design two fitted images: global fuzzy fitted image (GFFI) and local fuzzy fitted image (LFFI). Next, the energy function including a global term and a fitting term is constructed. The global term comes from the fuzzy energy-based active contour (FEAC) model to balance the importance of the object and background while the fitting term is based on GFFI and LFFI to handle the intensity inhomogeneity in given images. Then, we prove the energy function to be convex, which can ensure the segmentation results independent of initialization. Finally, unlike the FEAC model by computing the change of pixel-by-pixel energy function, a direct method is utilized to calculate the difference between the old and new energy functions in the whole image for each iteration to update the pseudo level set function. Experiments on synthetic and real images show that the proposed model is more robust than the popular active contour models for segmenting the images with noise, blurred boundaries, and intensity inhomogeneity. The code is available at: <https://github.com/fangchj2002/GLFIF>.  
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