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Active contours driven by edge entropy fitting energy for image segmentation

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Highlights

- A novel image feature (i.e., local edge entropy) was constructed to reduce the influence of intensity inhomogeneity. This entropy is large for regions containing edge information and vice versa, which can effectively highlight the blurry image edge and assist to differentiate image differences between the foreground and background.
- A novel region based contour model was proposed by developing a hybrid image fitting energy based simultaneously on the local edge entropy and pixel intensities, together with a redefined regularization term of the level set function.
- Segmentation results based on a number of synthetic and real images demonstrated that the developed model was superior to several existing models in terms of accuracy and computational efficiency.

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