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Clustering Based Level Set Evaluation for Low Contrast Images

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Abstract : The important object of images segmentation is to extract objects with respect to some input features. One of the important methods for image segmentation is Level set method. Generally medical images and synthetic images with low contrast of pixel profile, for such images difficult to locate interested features in images. In conventional level set function, develops irregularity during its process of evaluation of contour of objects, this destroy the stability of evolution process. For this problem a remedy is proposed, a new hybrid algorithm is Clustering Level Set Evolution. Kernel fuzzy particles swarm optimization clustering with the Distance Regularized Level Set (DRLS) and Selective Binary, and Gaussian Filtering Regularized Level Set (SBGFRLS) methods are used. The ability of identifying different regions becomes easy with improved speed. Efficiency of the modified method can be evaluated by comparing with the previous method for similar specifications. Comparison can be carried out by considering medical and synthetic images.

Keywords : segmentation, clustering, level set function, re-initialization, Kernel fuzzy, swarm optimization
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