MULTIMODAL SEGMENTATION COMBINING ACTIVE CONTOURS AND WATERSHEDS (TueAmOR6)

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Abstract :

This paper presents a segmentation method combining an active contour approach with a watershed pre−segmentation. Segmentation is performed on two modalities: one being the color of the regions, the other one being the change due to motion. On the one hand, watershed methods are very efficient to provide an oversegmentation of homogeneous color regions. On the other hand, active contours methods are efficient to obtain a smooth segmentation. We apply in this paper an active contour method for segmenting the change detection mask. The incertitude in the motion estimation induces artifacts on the resulting contours. Our original contribution consists in using the intra−image watershed segmentation to correct the contours. To reach such a goal, we construct a distance map from the oversegmentation of the homogeneous color region. The active contour is then corrected to better fit to the real object by introducing a specific term based on this distance map in the evolving equation of the active contour.

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