REGION−LEVEL MOVING OBJECT SEGMENTATION BY GRAPH LABELING (MonPmPO3)

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Abstract :

In this paper we propose a method for the detection and localization of moving objects. The change detection problem in the pixel domain is formulated by two zero mean Laplacian distributions. Furthermore, the image is split in homogenous colour regions and their inter−frame mean absolute difference is used to describe the change detection problem in the region level by two Gamma distributions. The pixel and region based change detection statistics are used to classify the colour regions as ``changed'' or ``unchanged'' with high confidence. These initially labeled regions constitute the ``seeds'' of the ``changed''/``unchanged'' classes. The remaining unlabeled regions are classified as belonging to one of them using a growing algorithm, which has been modified to refer to the labeling of regions (instead of pixels). Class growing is accomplished using the change detection and boundary information of unlabeled regions. The interconnection between region−nodes is represented by a region adjacency graph.

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