论文

基于时空域的自动视频对象分割算法

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摘要：

提出一种在视频序列中从背景里分离出运动对象的方法。使用全局运动估计和补偿进行预处理后，对视频序列中相邻帧进行连续两次差分，利用自适应滤波滤除噪声，并进行形态学处理，差分交集技术消除覆盖、显露的背景及部分噪声,最后模板匹配和更新,不仅能够得到快速变化的对象,而且能够得到视频对象暂时停止运动的部分。实验结果表明，该方法能够自动从视频序列中较好地提取出运动对象，具有较强的鲁棒性。

关键词： MPEG-4　视频对象分割　自适应滤波　数学形态学

Automatic segmentation algorithm based onspatio-temporal domain for video objects

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Abstract:

A segmentation method to separate the moving objects from their backgrounds in a video sequence is proposed. Firstly, the global motion estimation and compensation is performed. Secondly, the continuous twice difference for the adjacent frames in the video sequence is implemented and the noise is filtered out with the adaptive filtering, and then the morphologic treatment is carried out. Thirdly, the effect of uncovered and covered background is eliminated with the difference intersection technology. At last, the mask matching and updating enables the algorithm to handle both quickly changing objects and temporary stop moving objects. Experimental results indicate that the moving objects can be automaticly extracted from the video sequence by the method and it has the strong robustness.

Keywords: MPEG-4　video object segmentation　adaptive filtering　mathematic morphology

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