论文　　　　　　　　　最新目录 | 下期目录 | 过刊浏览 | 高级检索　　　　　<< Previous Articles | Next Articles >>

一种自适应分裂与合并的运动目标聚类分割算法

张琨[*①②]　王翠荣[②]*

①(东北大学信息科学与工程学院 沈阳 110819)
②(国家985工程下一代网络技术实验室 秦皇岛 066004)

An Adaptive Splitting and Merging Clustering Algorithm of the Moving Target Segmentation

Zhang Kun[①②]　Wang Cui-rong[②]*

①(College of Information Science and Engineering, Northeastern University, Shenyang 110819, China)
②(Nation 985 Program Next Generation Network Technology Laboratory, Qinhuangdao 066004, China)

摘要	参考文献	相关文章

Download: [PDF 538KB]   HTML 1KB   Export: BibTeX or EndNote (RIS)   Supporting Info

摘要 针对智能监控系统中多个运动目标进行图像分割这一问题，该文提出一种自适应分裂与合并的多运动目标聚类分割法。该算法首先利用视频图像的时域信息，通过样本方差进行背景建模，分割出包含多个运动目标的前景图像。然后定义了像素点的空间连通率，并设计一种利用中垂线分割法，对初始聚类进行自适应分裂与合并。在无需事先设定聚类分割数目的条件下，自组织迭代聚类算法能完成多运动目标的分割。实验结果证明该算法对多运动目标分割效果好，分割结果与人眼视觉的判断一致。利用空间连通信息使得算法迭代收敛速度快，具有良好的实时性。

关键词： 图像处理　聚类分割算法　背景建模　空间连通率　中垂线分割

Abstract： For the issue of multiple moving targets' segmentation in intelligent monitoring system, an adaptive splitting and merging clustering algorithm of the moving target segmentation is proposed. First, it uses the time-domain information for foreground image segmentation through the sample variance background modeling algorithm, thus obtains the foreground image containing multiple moving targets. It defines pixel space connectivity rate and designs a perpendicular split method for the initial cluster adaptive splitting and merging. Without pre-set number of initial cluster, the self-organized iterative clustering segmentation algorithm can complete multiple moving targets segmentation. Experimental results show that the proposed algorithm is suitable for multiple moving targets' segmentation, and the segmentation results are consistent with the human visual judgment. The use of space connectivity information improves the iterative algorithm convergence speed, thus it has good real-time.

Keywords： Image processing　Cluster segmentation algorithm　Background modeling　Spatial-connectivity rate　Perpendicular segmentation

引用本文：

张琨, 王翠荣.一种自适应分裂与合并的运动目标聚类分割算法[J] 电子与信息学报, 2014,V36(3): 601-609

Zhang Kun, Wang Cui-Rong.An Adaptive Splitting and Merging Clustering Algorithm of the Moving Target Segmentation[J] , 2014,V36(3): 601-609

链接本文：

http://jeit.ie.ac.cn/CN/10.3724/SP.J.1146.2013.00652 　 或 　 http://jeit.ie.ac.cn/CN/Y2014/V36/I3/601

Service

▸ 把本文推荐给朋友
▸ 加入我的书架
▸ 加入引用管理器
▸ Email Alert
▸ RSS

作者相关文章

▸ 张琨
▸ 王翠荣