

博士论坛

基于多信息综合的运动车辆跟踪算法

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摘要 综合车辆本身的区域和特征信息, 提出了一种在交通场景中跟踪运动车辆的新方法。该方法主要解决运动目标在遮挡、粘连以及分裂情况下的跟踪问题。首先通过引入的预测机制建立序列图像间运动区域的关联, 并根据区域关联的结果判断是否出现以上情况。针对车辆遮挡和粘连的问题, 采用基于特征点跟踪的方法解决, 先根据车辆区域信息对特征点进行初始化, 然后在图像中预测位置的邻域内搜索匹配点从而实现特征点的跟踪和聚类。对于车辆分裂的情况, 根据提出的规则对判定的区域进行融合后进行模板匹配从而解决分裂的问题。实验结果表明该方法具有较强的鲁棒性和较好的实时性。

关键词 [车辆跟踪](#) [多信息综合](#) [图像匹配](#) [特征点聚类](#)

分类号

Vehicle tracking algorithm based on multiple information synthesis

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Abstract

Incorporating region and feature information, this paper proposes a new algorithm for tracking vehicles under conditions of occlusion and splitting. Firstly the associations between motion regions are established by using the prediction information. Then making use of the result of region association, the method estimate whether the occlusion and splitting occur or not. The problem of occlusion is solved by tracking based on feature points, which are initialized according to region information and clustered by searching the matched points within a neighborhood of predicted position. The problem of blob splitting is handled by region matching after regional fusion in terms of some proposed rules. Experimental results show that the proposed method is characterized by good robustness and real-timeness.

Key words [vehicle tracking](#) [multiple information synthesis](#) [image matching](#) [feature points clustering](#)

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