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Real-time moving objects tracking for distributed smart video surveillances (Article)

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Abstract

Tracking the object of interest within a camera's view is essential for crime prevention. This study focuses on analyzing video surveillance in public places. It presents a novel approach to track moving objects across non-overlapping cameras' views that is able to give a consistent label to the objects throughout the whole multi-camera system in real-time. The proposed algorithm is also expected to be able to handle common problems in multiple-camera object tracking including variation of poses, object appearances and occlusion problems. The proposed algorithm was formulated based on visual and temporal cues for multiple cameras using entering/exiting and merging/splitting cases to deal with appearance changes and occlusion problems. Spatial cues are adopted in single-camera object tracking for real-time performance. A novel object segmentation technique based on the observed mask binary value is presented to deal with pose variation across different cameras. In the result section, the comparison between past works and the proposed tracking algorithm are presented. The experimental results show that the algorithm is able to give an optimal trade-off between accuracy and speed. © 2016 Praise Worthy Prize S.r.l. - All rights reserved.

Author keywords

Non-overlapping; Spatial; Temporal; Tracking; Visual cues

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