מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Vision and Robotics Seminar

Room 1 ,Ziskind Building
on Thursday, Dec 15, 2016
at 12:15

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Calibration of Multi-Camera Systems by Global Constraints on the Motion of Silhouettes

Abstract:

Computing the epipolar geometry between cameras with very different viewpoints is often problematic as matching points are hard to find. In these cases, it has been proposed to use information from dynamic objects in the scene for suggesting point and line correspondences. We introduce an approach that improves by two orders of magnitude the performance over state-of-the-art methods, by significantly reducing the number of outliers in the putative matches. Our approach is based on (a) a new temporal signature: motion barcode, which is used to recover corresponding epipolar lines across views, and (b) formulation of the correspondences problem as constrained flow optimization, requiring small differences between the coordinates of corresponding points over consecutive frames. Our method was validated on four standard datasets providing accurate calibrations across very different viewpoints.