

An Efficient Fundamental Matrix Estimation for Moving Object Detection

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Abstract : In this paper, an improved method for estimating fundamental matrix is proposed. The method is applied effectively to monocular camera based moving object detection. The method consists of corner points detection, moving object's motion estimation and fundamental matrix calculation. The corner points are obtained by using Harris corner detector, motions of moving objects is calculated from pyramidal Lucas-Kanade optical flow algorithm. Through epipolar geometry analysis using RANSAC, the fundamental matrix is calculated. In this method, we have improved the performances of moving object detection by using two threshold values that determine inlier or outlier. Through the simulations, we compare the performances with varying the two threshold values.

Keywords : corner detection, optical flow, epipolar geometry, RANSAC

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