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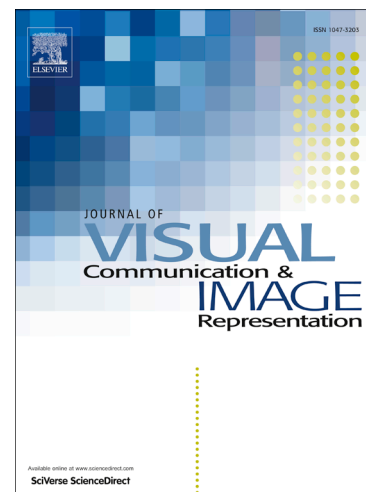
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# Motion detection using block based bi-directional optical flow method

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## Abstract

Detecting moving objects from video frame sequences has a lot of useful applications in computer vision. This proposed method of moving object detection first estimates the bi-directional optical flow fields between (i) the current frame and the previous frame and between (ii) the current frame and the next frame. The bi-directional optical flow field is then subjected to normalization and enhancement. Each normalized and enhanced optical flow field is then divided into non-overlapping blocks. The moving objects are finally detected in the form of binary blobs by examining the histogram based thresholded values of such optical flow field of each block as well as the optical flow field of the candidate flow value. Our technique has been conceptualized, implemented and tested on real video data sets with complex background environment. The experimental results and quantitative evaluation establish that our technique achieves effective and efficient results than other existing methods.

*Keywords:* Optical flow, motion detection, normalization, block, morphology

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## 1. Introduction

Motion detection is extensively used in computer vision to facilitate the analysis of real-world video scenes. Particularly, some typical computer vision

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