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# Dynamic Background Updating for Lightweight Moving Object Detection

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**Abstract :** Background subtraction and temporal difference are often used for moving object detection in video. Both approaches are computationally simple and easy to be deployed in real-time image processing. However, while the background subtraction is highly sensitive to dynamic background and illumination changes, the temporal difference approach is poor at extracting relevant pixels of the moving object and at detecting the stopped or slowly moving objects in the scene. In this paper, we propose a moving object detection scheme based on adaptive background subtraction and temporal difference exploiting dynamic background updates. The proposed technique consists of a histogram equalization, a linear combination of background and temporal difference, followed by the novel frame-based and pixel-based background updating techniques. Finally, morphological operations are applied to the output images. Experimental results show that the proposed algorithm can solve the drawbacks of both background subtraction and temporal difference methods and can provide better performance than that of each method.

**Keywords :** background subtraction, background updating, real time, light weight algorithm, temporal difference
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