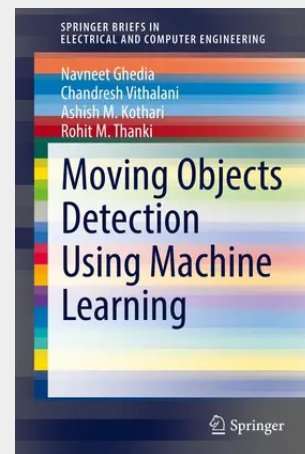


Moving Objects Detection Using Machine Learning

This book shows how machine learning can detect moving objects in a digital video stream. The authors present different background subtraction approaches, foreground segmentation, and object tracking approaches to accomplish this. They also propose an algorithm that considers a multimodal background subtraction approach that can handle a dynamic background and different constraints. The authors show how the proposed algorithm is able to detect and track 2D & 3D objects in monocular sequences for both indoor and outdoor surveillance environments and at the same time, also able to work satisfactorily in a dynamic background and with challenging constraints. In addition, the shows how the proposed algorithm makes use of parameter optimization and adaptive threshold techniques as intrinsic improvements of the Gaussian Mixture Model. The presented system in the book is also able to handle partial occlusion during object detection and tracking. All the presented work and evaluations were carried out in offline processing with the computation done by a single laptop computer with MATLAB serving as software environment.

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