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Deep Learning Approach for Suspicious Activity Detection from Surveillance Video

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Abstract: *The present generation seeks ways to live their lives free of fear. This often prompts the need for enhanced law enforcement and security systems. Suspicion activity recognition in surveillance footage has become an essential component in modern security systems, focused around the problem of recognizing inappropriate behaviors without too much human time. The advent of deep learning has made an impact in computer vision tasks within such a way the real-time detection by the evaluation of large amounts of video footage becomes realistic. In this context the paper presents a model in which deep learning, particularly Convolutional Neural Networks (CNNs), are utilized for the behavioral pattern recognition from security footage. In addition, it also improves the efficacy of detection and reduces the shortcomings associated with these systems where only the post-event analysis is performed manually or automatically. In this paper, we demonstrate a novel IP model that analyzes live video and performs normal-suspicious–threat triage in real-time. Results indicate the validity of the method in different environmental and illumination conditions. An important objective that this system is designed for is to change the way security is practiced and delivered in today's intelligent systems providing actionable intelligence and the ability to prevent threats rather than just respond to them making this a high growth opportunity for marketing high-risk and sensitive areas.*

Keywords: Convolutional Neural Networks

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