

Violence Detection and Tracking on Moving Surveillance Video Using Machine Learning Approach

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Abstract : When creating automated video surveillance systems, violent action recognition is crucial. In recent years, hand-crafted feature detectors have been the primary method for achieving violence detection, such as the recognition of fighting activity. Researchers have also looked into learning-based representational models. On benchmark datasets created especially for the detection of violent sequences in sports and movies, these methods produced good accuracy results. The Hockey dataset's videos with surveillance camera motion present challenges for these algorithms for learning discriminating features. Image recognition and human activity detection challenges have shown success with deep representation-based methods. For the purpose of detecting violent images and identifying aggressive human behaviours, this research suggested a deep representation-based model using the transfer learning idea. The results show that the suggested approach outperforms state-of-the-art accuracy levels by learning the most discriminating features, attaining 99.34% and 99.98% accuracy levels on the Hockey and Movies datasets, respectively.

Keywords : violence detection, faster RCNN, transfer learning and, surveillance video

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