

Peer Review

Review of: "Exploring the Magnitude-Shape Plot Framework for Anomaly Detection in Crowded Video Scenes"

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This paper proposes a novel method for crowd scene video anomaly detection by integrating statistical approaches with deep learning techniques. The proposed methodology is evaluated using the UCSD Ped2 and CHUK datasets, and its performance is compared against state-of-the-art (SOTA) approaches.

The study presents an interesting hybrid approach that leverages statistical modeling alongside deep learning, which has the potential to enhance anomaly detection in crowded scenes. The experimental results demonstrate promising performance, indicating that the method may be effective in real-world applications. Additionally, the comparison with existing methods provides useful insights into the advantages of the proposed approach.

However, several aspects of the paper could be improved:

The generalizability of the proposed approach should be further validated on additional datasets. Specifically, the inclusion of the UCSD Ped1 dataset would provide a more comprehensive evaluation and strengthen the reliability of the findings.

The explanation of how statistical methods are combined with deep learning is not sufficiently detailed. Additionally, the limitations of this hybrid methodology are not properly discussed. A major concern is that deep learning approaches already provide end-to-end solutions with millions of variables available for training. The improvement on certain datasets with a combined approach might lead to performance gains that are constrained to a local maximum rather than demonstrating true generalization.

While the paper compares results with SOTA methods, a more detailed analysis of why the proposed method outperforms or underperforms in specific scenarios would be beneficial. Providing insights into the strengths and weaknesses of the approach compared to existing techniques would enhance the contribution of the study.

Overall, the paper presents an interesting approach to crowd scene anomaly detection. With additional validation on more datasets, a deeper comparative analysis, and further discussions on computational efficiency and methodological limitations, the study could make a stronger contribution to the field.

Declarations

Potential competing interests: No potential competing interests to declare.