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Security Camera Intrusion Detection

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Abstract: *Security breaches and intrusions pose significant risks to individuals, organisations, and public safety. Traditional security surveillance systems may lack the ability to detect intrusions accurately or may generate false alarms, leading to delayed responses or unnecessary interventions. There is a critical need for advanced intrusion detection systems capable of accurately identifying and tracking intruders in real-time to enhance security measures and protect assets effectively. The proposed system aims to develop a robust intrusion detection solution using the YOLOv8 computer vision model. The system will be trained on annotated datasets containing images and videos of various intrusion scenarios, including unauthorised access, trespassing, and perimeter breaches. Upon deployment, the system will continuously monitor the surveillance feed, analysing video streams to detect and localise intruders using YOLOv8. When intrusions are detected, the system will generate real-time alerts and notifications, enabling security personnel to respond promptly and prevent security breaches. Additionally, the system will log intrusion events for further analysis and reporting, facilitating proactive security measures and threat assessment. Through this approach, the proposed system aims to enhance security surveillance systems' effectiveness and mitigate security risks in various environments, including residential areas, commercial buildings, and public spaces*

Keywords: Machine learning, Deep learning, Neural Network, Convolutional Neural Network,YOLOv8

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