

Review Study of Satellite Image-Based Airbase Surveillance and Monitoring Using YOLOv8

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Abstract: *Airbase surveillance is essential for national defense and strategic monitoring. Traditional surveillance techniques rely on manual interpretation of satellite imagery, which is slow and error-prone. Recent advances in deep learning have enabled automated aircraft detection in remote sensing images. Among modern detectors, YOLOv8 provides a strong balance between speed and accuracy. This paper presents a comprehensive review of satellite image-based airbase surveillance systems with emphasis on YOLOv8. Existing methods, datasets, system architectures, challenges, and future directions are analyzed. The review highlights research trends and opportunities for building scalable and real-time airbase surveillance systems.*

Keywords: Airbase Surveillance, Satellite Imagery, Object Detection, YOLOv8, Deep Learning, Aircraft Detection

