Synergizing General and Remote Sensing Video Tracking: A Gap Analysis and Proposed Solutions

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The issue of remote sensing object tracking holds significant importance in enabling dynamic observation of vast terrestrial regions. Its ability to promptly respond to ground-based emergencies has garnered widespread attention in recent years. However, satellite videos pose unique data discrepancies compared to the extensively studied natural videos, posing significant challenges in achieving robust and accurate object tracking in satellite video. This report delves into the intricacies of the differences between generic object tracking and remote sensing object tracking, offering a detailed analysis. Furthermore, it discusses potential solutions to address these challenges.

The analysis highlights the need for tailored approaches that can account for the specific characteristics of satellite videos, such as lower resolution, varying illumination conditions, and complex background. Additionally, the report explores innovative techniques that can enhance the robustness and accuracy of object tracking in satellite video, including advanced feature extraction methods, robust motion models, and effective data fusion strategies.

By addressing these challenges and developing tailored solutions, we can move closer to realizing the full potential of satellite videos in various applications. The report concludes by emphasizing the need for continued research and development in this area to ensure the effective utilization of satellite videos for object tracking and other related tasks.

Short Bio:

Qiaoyuan Liu Associate Researcher from CAS-CIOMP, China. Focusing on the interdisciplinary research between Computer Vision and Remote Sensing Optics, especially interests in remote sensing object tracking and super-resolution reconstruction of remote sensing images. Published 17 SCI

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