Title: Photovoltaic panel segmentation
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Recognition of photovoltaic cells in aerial images with Convolutional Neural Networks (CNNs). Object detection with YOLOv5 models and image segmentation with Unet++, FPN, DLV3+ and PSPNet.

We established a PV dataset using satellite and aerial images with spatial resolutions of 0.8, 0.3, and 0.1 m, which focus on concentrated PVs, distributed ground PVs, and fine-grained ...

This paper addresses the significant challenges in panel segmentation, particularly the scarcity of annotated data and the labour-intensive nature of manual annotation for supervised learning.

Our proposed framework for the segmentation of photovoltaic panels. The input (images and corresponding annotations) is passed to the preprocessing stage, followed by training on the ...

In this study, a semantic segmentation network called HCT-Net, combined with the hybrid neural networks and the swarm intelligence optimization algorithms, is designed to segment ...

This study proposes a high-precision PV panel segmentation method that combines largescale model prior knowledge and multimodal information, achieving accurate identification and segmentation of ...

He and L. Zhang, "Automatic detection and mapping of solar photovoltaic arrays with deep convolutional neural networks in high resolution satellite images," 2020 IEEE EI2.

These improvements aim to enhance segmentation accuracy, reduce computational costs, and accelerate convergence. In this article, I will detail the methodology, experimental setup, and ...

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