

Title: Photovoltaic panel composition detection

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This identification algorithm provides automated inspection and monitoring capabilities for photovoltaic panels under visible light conditions.

This paper proposes a photovoltaic panel defect detection method based on an improved YOLOv11 architecture. By introducing the CFA and C2CGA modules, the YOLOv11 model is optimized to ...

In this paper, the main objective is to compare two YOLO models for detecting PV panels in aerial images.

Lightweight CNN models that can operate with a lower hardware capacity and provide instantaneous decisions in real-time applications are needed in literature. This study aims to develop a deep ...

This module is seamlessly integrated into YOLOv5 for detecting defects on photovoltaic panels, aiming primarily to enhance model detection performance, achieve model lightweighting, and...

Timely automated detection is crucial for maintaining power generation efficiency and ensuring equipment safety. This paper presents a lightweight enhanced YOLOv11n model for detecting photovoltaic ...

This study introduces an automated defect detection pipeline that leverages deep learning and computer vision to identify five standard anomaly classes: Non-Defective, Dust, Defective, Physical Damage, and Snow on ...

Advancing renewable energy solutions requires efficient and durable solar Photovoltaic (PV) modules. A novel mechanism based on Deep Learning (DL) and Residual Network (ResNet) for accurate...

To address this challenge, we developed an advanced defect detection model specifically designed for photovoltaic cells, which integrates topological knowledge extraction.

Within this research, we introduce a streamlined yet effective model founded on the "You Only Look Once" algorithm to detect photovoltaic panel defects in intricate settings.

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