# Photovoltaic panel pollution detection



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The study investigates the effects of dust on PV panel output and visible sunlight (VSL) block amounts to utilize the necessity of cleaning and detection. The amount of blocked visible sunlight while ...

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 study aims to develop a novel spectral index specifically designed for PV dust characteristics, enabling accurate detection of dust accumulation on photovoltaic systems.

Recent advancements in machine vision, computer vision, and image processing have driven significant research into automated detection of surface defects in in PV panels.

Environment induced dust on solar panel hampers power generation at large. This paper focuses on CNN based approach to detect dust on solar panel and predicted the power loss due to dust...

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 ...

At present, the main methods for detecting surface dust on solar photovoltaic panels include object detection, image segmentation and instance segmentation, super-resolution image generation, ...

This article proposes an intelligent detection system for photovoltaic panel contamination based on YOLOv8n, named, which establishes a six-level classification

In this paper, we propose a novel convolutional neural network architecture based on the EfficientNet framework, customized for photovoltaic dust detection.

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