Title: Photovoltaic panel dust layer detection
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The performance of the proposed model was evaluated by testing it on a dataset containing images of 502 clean panels and 340 dusty panels and comprehensively comparing it with ...

In this paper, we propose an image processing-based approach that uses a convolutional neural network (CNN) with the popular AlexNet architecture to detect dust on solar ...

Dust accumulation significantly degrades the energy output of photovoltaic (PV) panels, particularly in arid and semi-arid regions. While existing studies have separately explored image ...

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

As time passes, dust may form on the panels due to various weather conditions and environments where the panels are located. In order to maintain the panels in a timely manner and ...

We have implemented a model on detecting dust and fault on solar panels. These two applications are centralized as a single-platform and can be utilized for routine-maintenance and any other checks.

We integrate deep learning techniques and propose DVNET, an end-to-end PV dust detection model that estimates light transmittance using images of PV panels. This model accurately ...

This paper provides an extensive review of dust detection techniques for photovoltaic panels. The review is conducted from two main perspectives. Firstly, the p

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