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Title: Photovoltaic panel infrared image recognition

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In this work, we propose Deep Res-UNet for segmentation of UAV-based infrared images for photovoltaic panels. Infrared images are collected by the UAV equipped with infrared thermal ...

Among these, infrared thermography cameras are a powerful tool for improving solar panel inspection in the field. These can be combined with other technologies, including image processing and machine ...

One of the most effective ways to monitor solar panels for early signs of problems is by using thermal imaging. Infrared (IR) anomaly detection has become a powerful tool for spotting ...

To address this issue, a new PV panel condition monitoring and fault diagnosis technique is developed in this paper. The new technique uses a U-Net neural network and a classifier in ...

This study explores the potential of using infrared solar module images for the detection of photovoltaic panel defects through deep learning, which represents a crucial step toward ...

Based on the results of the solar panel recognition model, a hot spot segmentation model was designed and trained using the constructed infrared image dataset. Multiple semantic segmentation models, ...

By capturing the temperature distribution and thermal anomalies on the surface of solar panels, infrared imaging technology can detect defects more accurately, providing a more sensitive ...

This paper based on U-Net network and HSV space, proposes a method of PV infrared image segmentation and location detection of hot spots, which is used to detect and analyze the ...

To address these limitations (Hussain & Khanam, 2024), this study proposes a PV panel defect detection method based on YOLOv8 and computer-based infrared vision. We modify the ...



Photovoltaic panel infrared image recognition

In an era of rapid advancements in artificial intelligence and the booming growth of the renewable energy industry, detecting defects in PV panels accurately and effectively using infrared imaging ...

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