Photovoltaic panel defect detection method

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 ...

To address the current limitations of low precision and high image data requirements in defect detection algorithms based on visible light imaging, this paper proposes a novel visible light ...

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.

To address the challenges of high missed detection rates, complex backgrounds, unclear defect features, and uneven difficulty levels in target detection during the industrial process of ...

To address these challenges, this paper proposes the LEM-Detector, an efficient end-to-end photovoltaic panel defect detector based on the transformer architecture.

For defect detection in crystalline silicon photovoltaics, the industry currently widely uses technologies such as manual visual inspection, current-voltage (I-V) curve analysis, infrared thermal imaging, ...

In order to tackle this issue, this study presents a PV panel defect detection approach based on the advanced YOLOv11 object detection algorithm. The mosaic augmentation approach is first employed ...

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

Ensuring the reliability of photovoltaic (PV) systems requires efficient defect detection to maintain optimal energy production. Deep learning-based object detection models have...

Several electroluminescent photovoltaic defect datasets are used to verify the effectiveness of the proposed model. The experimental results show that the map@50 and ...

Photovoltaic panel defect detection method

Web: https://www.capturedmoments.co.za