

How to reduce redundancy among feature embeddings in photovoltaic panels?

To eliminate redundancy among feature embeddings and acquire effective representations of defects in photovoltaic panels, we propose a YOLO-ACF network model equipped with an Adaptive Complementary Fusion (ACF) module. This aims to enhance detection performance, achieve model lightweighting, and accelerate detection speed.

Is yolov5 a good baseline network for photovoltaic panel defect detection?

The excellent performance of YOLOv5 in the field of visual detection, along with its successful application in industry defect detection, proves that it would be a good choice as the baseline network for photovoltaic panel defect detection.

What is PVL-AD dataset for photovoltaic panel defect detection?

To meet the data requirements, Su et al. [18] proposed PVEL-AD dataset for photovoltaic panel defect detection and conducted several subsequent studies [19, 20, 21] based on this dataset. In recent years, the PVEL-AD dataset has become a benchmark for photovoltaic (PV) cell defect detection research using electroluminescence (EL) images.

Can EL images be used for photovoltaic panel defect detection?

Buerhop et al. [17] constructed a publicly available dataset using EL images for optical inspection of photovoltaic panels. Based on this dataset, researchers have developed numerous algorithms [9, 10, 12] for photovoltaic panel defect detection.

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The Flat or rooftop mountings of PV systems require large area of land for the generation of electricity. As per the present scenario, the availability of suitable land is a major problem in cities ...

Detecting defects on photovoltaic panels using electroluminescence images can significantly enhance the

production quality of these panels. Nonetheless, in the process of defect ...

59 1 Introduction With the increasing number of photovoltaic (PV) plants worldwide, it has become crucial to prevent power losses caused by defects and failures in solar panels. Timely ...

The proposed method is based on the previously proposed region-line primitive association framework, in which complementary information between region (segment) and line (straight line) ...

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