Photovoltaic panel image detection and recognition

In this study, we address these challenges by first constructing a dataset of PV panels using very-high-resolution (VHR) aerial imagery, specifically focusing on the region of Piedmont in Italy.

Development of monitoring and simulation methods using 3D remote sensing data. This study addresses the growing demand for increased performance and reliability of photovoltaic (PV) installations by ...

The existing approaches that are relevant to our work can be grouped into 3 categories: Existing approaches for solar panel detection in satellite images or similar tasks, Mask- CNN Architectures, and YOLO models.

In this paper we focus on creating a world map of solar panels. We identify locations and total surface area of solar panels within a given geographic area. We use deep learning methods for automated ...

Advancing renewable energy solutions requires efficient and durable solar Photovoltaic (PV) modules. A novel mechanism based on Deep Learning (DL) and Residual Network (ResNet) for accurate...

Recognition of photovoltaic cells in aerial images with Convolutional Neural Networks (CNNs). Object detection with YOLOv5 models and image segmentation with Unet++, FPN, DLV3+ and PSPNet.

Detecting defects on photovoltaic panels using electroluminescence images can significantly enhance the production quality of these panels.

To tackle the challenge of modeling PV panels with diverse structures, we propose a coupled U-Net and Vision Transformer model named TransPV for refining PV semantic segmentation.

In this paper, the main objective is to compare two YOLO models for detecting PV panels in aerial images. Our primary goal is to select the best object detector between the two models studied for real-time ...

In this paper, we propose an approach that identifies PV panels by means of a deterministic algorithm that carefully and extensively analyses the colours of the pixels forming the panels.

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