

Applying the YOLO11 model combined with DINOv3 and Lightly to the problem of disease detection on tea leaves.

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Abstract: In agricultural practice, early detection of diseases on tea plants plays a crucial role in ensuring yield and product quality. This project aims to build an effective automation system for this process by applying the YOLO11 model combined with DINOv3 and Lightly. Through theoretical and experimental research, the project will provide a new machine learning-based solution capable of accurately detecting tea leaf diseases in real-world environments. This is an important step forward, not only contributing to improving agricultural production but also opening up the broad application potential of AI technology in the agricultural sector.

Keywords: YOLO11, DINOv3, Lightly, Tea disease detection, Machine learning