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(57) Abstract :

The proposed invention presents a system for automated plant leaf disease detection using computer vision and machine learning algorithms. This system utilizes cutting-edge technology to address the critical challenge of timely and accurate disease identification in crops. It includes a computer vision module that analyzes digital images of plant leaves, identifying disease symptoms through advanced image processing techniques. Additionally, a machine learning module, trained on a vast dataset of labeled plant leaf images, enhances the accuracy of disease detection. The method involves capturing and preprocessing plant leaf images, enabling a machine learning model, often based on convolutional neural networks, to classify and identify diseases with precision. The system offers a user-friendly interface for agricultural professionals and farmers, providing real-time disease diagnosis and management recommendations. Moreover, its scalability and adaptability make it suitable for diverse crops and geographical regions, contributing to sustainable agriculture, reduced environmental impact, and improved food security worldwide. Accompanied Drawing [FIGS. 1-2]

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