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Patent Search

Invention Title	EMERGING TRENDS IN DETECTION OF PLANT DISEASES USING IMAGE PROCESSING WITH MACHINE LEARNING
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Abstract:

7. ABSTRACT The automated plant disease detection system presented in this invention plays a crucial role. By combining digital image processing and machine learning system captures images of plant leaves, enhances them, and identifies disease-affected areas with remarkable accuracy. Utilizing classifiers such as Support Vector Machine, Artificial Neural Network, and K-Nearest Neighbors, it distinguishes between healthy and diseased plants, often detecting diseases before they become visible to the human eye. This early detection empowers farmers to take prompt corrective measures, ultimately leading to increased crop yield, improved quality of agricultural produce, and sustainable farming practices. The system's user-friendly interface ensures ease of use for farmers, making it a valuable tool in the quest for enhanced food security and agricultural prosperity.

Complete Specification

Description:4. DESCRIPTION

Technical Field of the Invention

The invention pertains to the application of advanced digital image analysis and classification techniques to address challenges in plant disease identification and management in the agriculture sector.

Background of the Invention

Agriculture plays a pivotal role in sustaining economies and nourishing populations worldwide. In India, where approximately 70% of the population is engaged in agriculture and farming, the health and productivity of crops hold paramount importance. However, a persistent threat to agricultural sustainability is the prevalence of plant diseases, predominantly caused by bacteria, fungi, and viruses. These diseases can severely impede crop growth, reduce agricultural yields, and compromise the quality of produce, posing significant challenges to food security and economic well-being.

Traditional methods for the detection and identification of plant diseases have predominantly relied on manual labor and visual inspection by experienced agriculturists.

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