PLANT DISEASE DETECTION USING CONVOLUTIONAL NEURAL NETWORKS

A PROJECT REPORT

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ABSTRACT

In recent years, the agriculture sector has faced significant challenges due to the increasing prevalence of plant diseases, leading to yield loss and economic setbacks. Automated disease detection systems leveraging advancements in computer vision and deep learning techniques offer promising solutions to address these challenges. This proposes a methodology for plant disease detection using Convolutional Neural Networks (CNNs). The proposed system begins with the collection of a comprehensive dataset comprising images of healthy plants and plants affected by various diseases. Preprocessing techniques such as image augmentation and normalization are employed to enhance the dataset quality and mitigate overfitting.

The effectiveness of the proposed approach is evaluated through rigorous experimentation and performance analysis. The trained model demonstrates high accuracy, sensitivity, and specificity in detecting plant diseases across diverse species and conditions.

Overall, the proposed plant disease detection framework utilizing CNNs offers a reliable and scalable solution to mitigate the impact of plant diseases on agricultural productivity. This leads to improved crop yields, reduced pesticide usage, and sustainable agricultural practices.