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Plant Leaf Disease Classification Based on SVM Based Densenets

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Abstract



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Abstract:

This research proposes a novel approach for the classification of plant leaf diseases by combining Support Vector Machines (SVM) with Dense Convolutional Neural Networks (DenseNets). Plant diseases pose a significant threat to agricultural productivity, making accurate and efficient disease classification crucial for timely intervention. In this study, a DenseNet architecture is employed to automatically extract high-level features from plant leaf images. These features are then fed into SVM classifiers for robust disease classification. The proposed hybrid model harnesses the strengths of both deep learning and traditional machine learning techniques, resulting in improved accuracy and generalization. Experimental results on a benchmark plant leaf disease dataset demonstrate the effectiveness of the approach, showcasing its potential for aiding in precision agriculture and crop management.

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I. Introduction

Plant diseases have a detrimental impact on global agricultural productivity, leading to significant crop yield losses and threatening food security [1]-[3]. In this study, we propose a novel approach that combines the strengths of Support Vector Machines (SVM) and Dense Convolutional Neural Networks (DenseNets) to enhance the accuracy and efficiency of plant leaf disease classification. Convolutional Neural Networks (CNNs) have been successful in various image classification tasks,

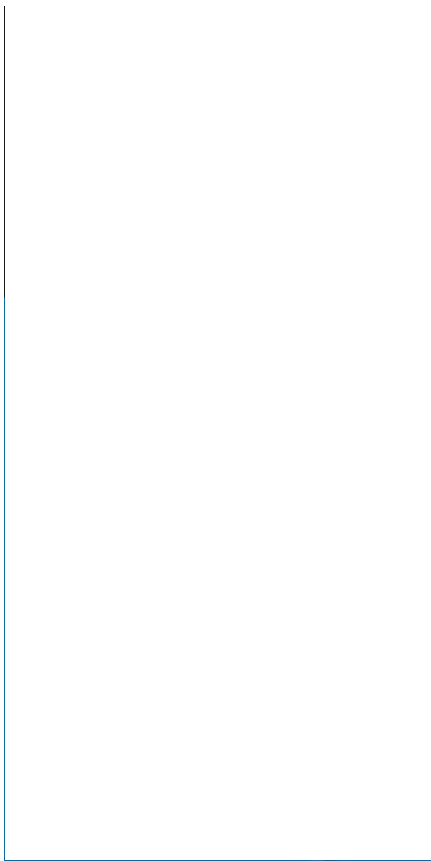
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