

Plants Diseases Detection using Python

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Abstract: *Plant disease is an ongoing challenge for smallholder farmers, which threatens income and food security. The recent revolution in smartphone penetration and computer vision methods has created an opportunity for image classification in agriculture. Convolutional Neural Networks(CNN) are considered state of the art in image recognition and offer the ability to provide a prompt and definite diagnosis. In this paper, the performance of a pre-trained ResNet34 model in detecting crop disease is investigated. The developed model is deployed as a web application and is capable of recognizing 7 plant diseases out of healthy leaf tissue.*

A dataset containing 8,685 leaf images, captured in a controlled environment, is established for training and validating the model. Validation result show that the proposed method can achieve an accuracy of 97.2% and an F1 score of greater than 96.5%. This demonstrates the technical feasibility of CNNs in classifying plant diseases and presents a path towards AI solutions for small holder farmers.

The project focuses on the approach based on image processing for detection of diseases of plants. In this paper, we propose an Android application that helps farmers for identifying plant disease by uploading a leaf image to the system. The system has a set of algorithms which can identify the type of disease. Input image given by the user undergoes several processing steps to detect the disease and results are returned back to the user via android application

Keywords: farmers

