INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

UNIVERSITY OF WESTMINSTER

Detecting Plant Diseases from Leaves Recommending Homemade Pesticide Recipe

Project Proposal

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Abstract.

This final year project aims to develop a neural network-based system that utilizes image recognition technology to recommend homemade pesticides for four common plant diseases found in residential settings. The project focuses on identifying and providing suitable homemade pesticide formulations for the following plant diseases: Mealybugs, Upward curling disease, insects pests and fungal. By leveraging the capabilities of neural networks, this system aims to offer personalized and eco-friendly solutions for homeowners to effectively manage these plant diseases.

The project begins with the construction of a comprehensive dataset comprising images of diseased plant leaves representative of the four target diseases. This dataset is then utilized to train a convolutional neural network (CNN) model capable of accurately classifying and diagnosing the specific diseases. Transfer learning techniques are employed to leverage pre-trained models, facilitating efficient training and improved accuracy.

Upon achieving satisfactory accuracy in disease identification, the system incorporates a recommendation module. When a user uploads an image of a diseased plant leaf, the system processes the image through the trained CNN model to determine the disease type. Based on the diagnosis, the system retrieves relevant homemade pesticide formulations from a curated database, specifically tailored to address each of the four targeted diseases.

The final system offers an accessible and user-friendly tool for homeowners to manage common plant diseases using homemade pesticide solutions. By promoting the use of eco-friendly alternatives, the system contributes to sustainable and environmentally conscious gardening practices in residential settings.