SOP NILADRI 12310870

Niladri Biswas

September 2024

Statement of Purpose

Project Title: Multi-modal Crop Disease Detection

Submitted by: *[NILADRI BISWAS]*

Introduction

In today's rapidly advancing world, it is imperative to protect our green vegetation to address the challenges of global warming. By utilizing machine learning techniques in the farming sector, we can enhance the health of plants and trees, thereby improving agricultural practices and contributing to environmental sustainability.

Project Objective

- To develop an interpretable deep learning modelthat can classify plant diseases accurately in real-world agricultural environments.
- To utilize multi-level feature fusion and attention mechanisms for enhancing the precision of disease identification in crops.
- To reduce the dependency on pesticides and improve agricultural efficiency through early and precise plant disease detection.
- To promote sustainable farming practices by optimizing plant health monitoring, ultimately contributing to global efforts in combating climate change.

Methodology

- Collection of dataset and refining the data by preprocessing

- Designing of Model (ResNet with CBAM, Inception-ResNet with SE, Swin Transformer, DenseNet with Attention)
- Deciding of Training Setup
- Tuning of Hyperparameter
- Training of Model
- Evaluation of Model (F1-Score, Accuracy,etc.)
- Interpretation Analysis
- Final Testing of Model before deploying.

GitHub repository link for project work

https://github.com/Niladri-501/_Plant_Disease_Detection-https://github.com/Niladri-501/_Plant_Disease_Detection-

[Niladri Biswas]
[12310870]