A PROJECT SYNOPSIS

ON

PLANT DISEASE PREDICTOR

A report submitted in partial fulfillment of the requirement for the award

of The degree of

BACHELOR OF TECHNOLOGY

In

COMPUTER SCIENCE AND ENGINEERING

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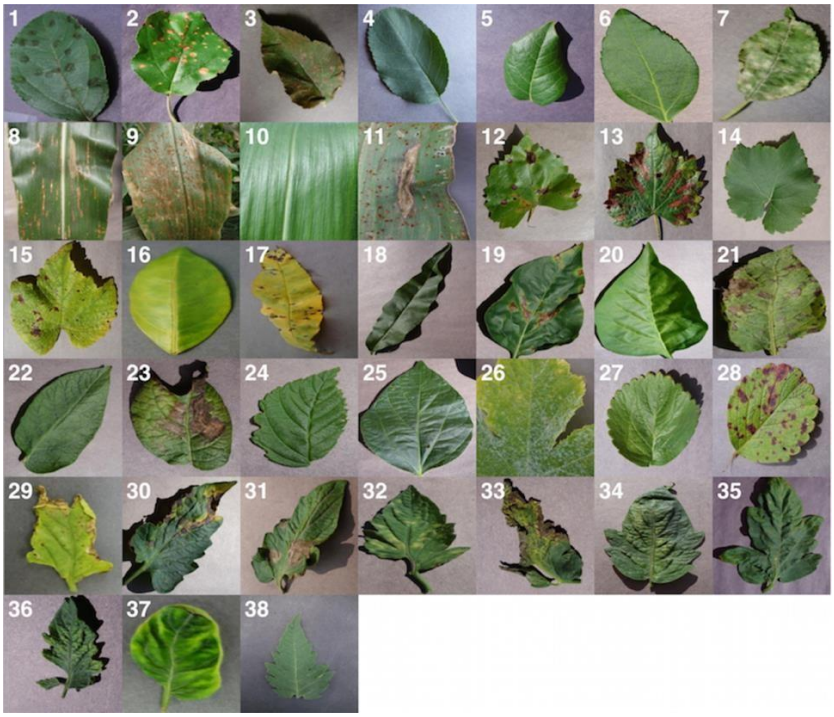
ABSTRACT

Machine learning is one of the branches of Artificial Intelligence which gives instructions to a particular system to perform some action. The main goal is to understand the data and fit that data into models that can be understood by the people and utilized for the growth of technology. The proposed project is for analysis of the dataset and various algorithms applying to predict disease suffered by a plant. A plant shows some visible effects of a disease, as a response to the pathogen. The visible features such as shape, dryness and wilting, are very helpful to recognize the condition of a plant, that is, if it is healthy or not. This project deals with all such features and with the help of machine learning algorithms, we will be able to find out the output(predicting diseased plant) which will be seen shortly.

INTRODUCTION

Machine Learning behaves like a self-learning concept that will work without any interruption of a human. Now a day's self-driving cars, hand-writing recognition, Stock market are some of the examples of utilizing Machine Learning Algorithms. It is believed that one day machine learning would be able to predict the future based on a dataset containing past information.

This project will not only predict plant disease but will also act as an interactive web application that will help users to seek information about various plants, their diseases and their cure. An example of a plant disease dataset is shown below:



SPECIAL FEATURES

Features associated with the project in the very first phase are:

1. Information about plants and their disease
2. Plant name identification using ML
3. Information about cure
4. Image carousel
5. Domain name

SYSTEM REQUIREMENTS

In the very first phase of this project, we'll be focusing on the UX design of our web application and cleaning and analyzing the dataset. The various software/libraries/languages that we will use are mentioned below:

- HTML
- CSS
- Javascript
- Python
- Flask
- Bootstrap
- NumPy
- Pandas

In the future, we will be using TensorFlow and Machine learning algorithms for transforming this into a complete product.

METHODOLOGY

Machine learning deals with the research work which is used to classify healthy and unhealthy plants. Our work is based on morphological features of the plant leaf.

Dataset Description

We analyze 54,306 images of plant leaves, which have a spread of 38 class labels assigned to them. Each class label is a crop-disease pair, and we make an attempt to predict the crop-disease pair given just the image of the plant leaf.

Measurement of Performance

To get a sense of how our approaches will perform on new unseen data, and also to keep a track of if any of our approaches are overfitting, we run all our experiments across a whole range of

train-test set splits, namely 80–20 (80% of the whole dataset used for training, and 20% for testing), 60–40 (60% of the whole dataset used for training, and 40% for testing), 50–50 (50% of the whole dataset used for training, and 50% for testing), 40–60 (40% of the whole dataset used for training, and 60% for testing) and finally 20–80 (20% of the whole dataset used for training, and 80% for testing).

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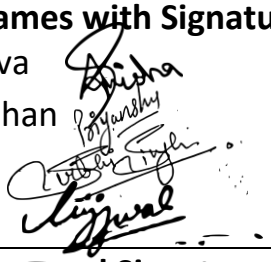
Team Member Names with Signature (Maximum 4)– 1. Anisha Srivastava 2. Priyanshu Chauhan 3. Surbhi Singh 4. Ujjwal Tayal	
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