GO PLANT : PLANT IMAGE CLASSIFIER

BTECH 2022-26 5th SEM MINOR PROJECT-I

SUBMITTED BY

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PLANT IMAGE CLASSIFIER

INTRODUCTION

PROBLEM STATEMENT

Developing an automated plant image classification system

OBJECTIVES

- **1. To classify images of 30 different plant classes using deep learning.**
- **2.Real-world applications in agriculture, botany, and plant-based industries.**
- **3.Helps identify plant species for farming, gardening, and environmental research.**

Tools and Technologies Used

- Programming Language: Python.
- Libraries: TensorFlow, Keras, NumPy, Tkinter for GUI, PIL for image handling.
- Frameworks: Deep Learning with TensorFlow and Keras.
- Image Preprocessing: Image resizing, normalization, data augmentation.

Dataset Overview

- Description of the dataset: 30,000 plant images, 1,000 images per class.

- 30 plant classes: List a few examples (aloevera, banana, cassava, etc.)

- Source of the dataset: Kaggle.

FLOWCHART

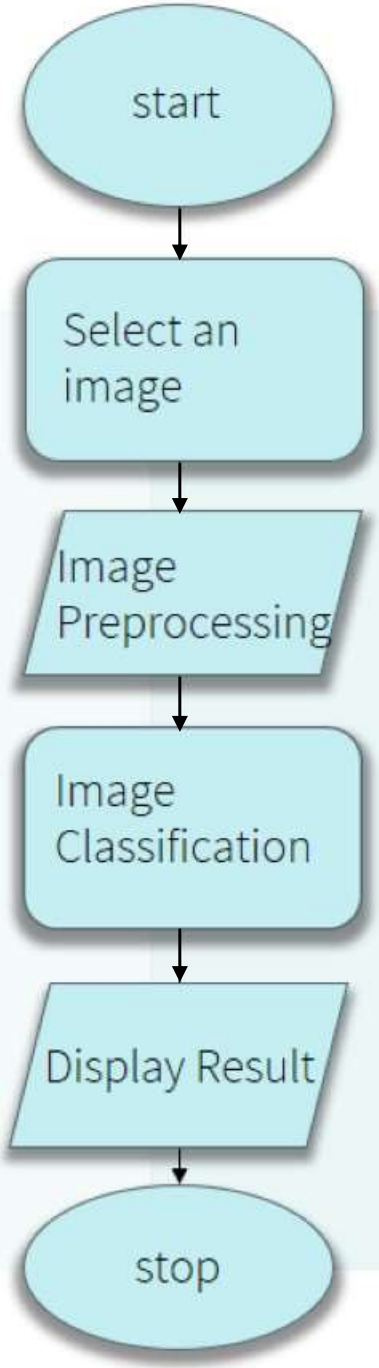

Figure-1 : Flow Chart

HOW DOES IT WORKS

IMPLIMENTATION

- The python code preprocesses an image to the required format, and then **extracts a feature vector** that represents the image. This feature vector can be used for tasks like **finding similar images.**

Data Preprocessing Techniques

- •Image resizing to 150x150 pixels.
- •Image normalization (scaling pixel values).
- •Data augmentation techniques applied (rotation, flipping, etc.)..

SCREENSHOTS OF WORK

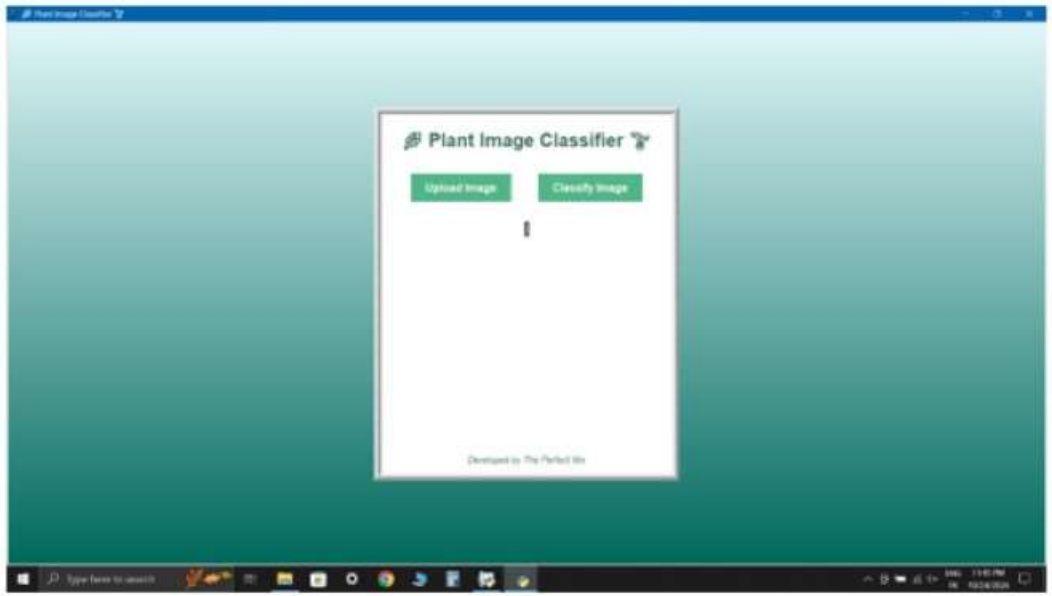

Figure-3 : GUI

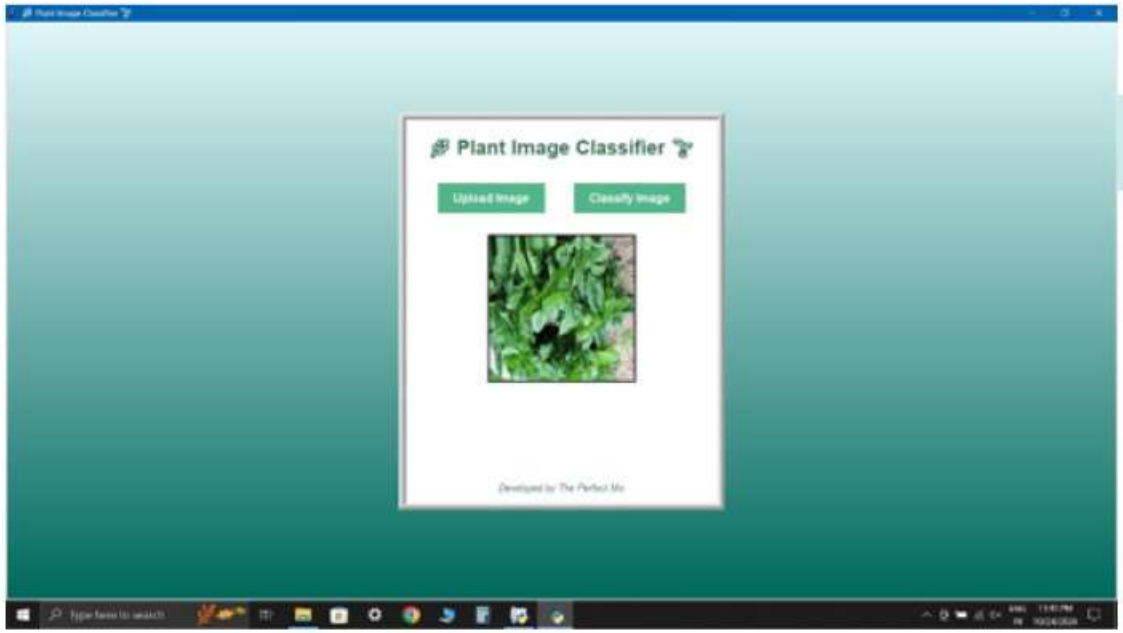

Figure-4 : Image Uploading

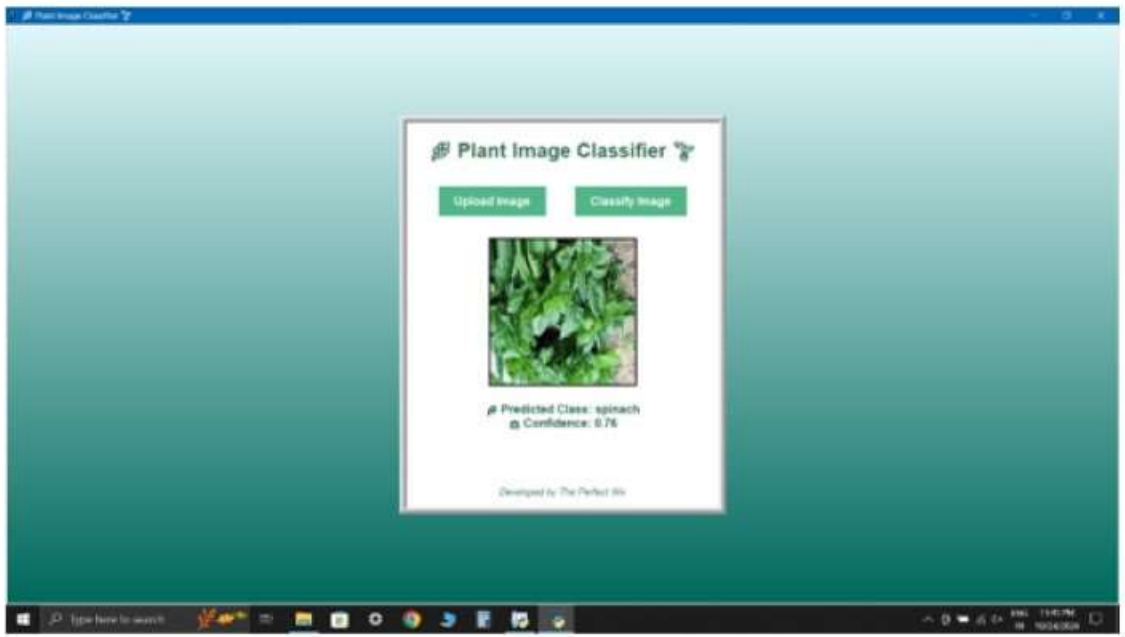

Figure-5 : Prediction Result

Future Improvements•

- Potential improvements in model accuracy.
- Expanding the classifier to include more plant classes.
- Integration with mobile applications for on-the-go plant classification.
- Adding functionalities like plant disease detection.

CONCLUSION

- Summary of the project's achievements.
- Key learnings and insights gained.
- Potential impact of the plant image classifier in real-world applications.

Thank You