**Final Proposal**

**Team:**

Hithesh Shanmugam, Goutham Selvakumar

**Type of project**:

Implementation project

**Description:**

The goal is to use the Convolution Neural Network (CNN) and to see what effect that the leaf color has on a CNN. Leaf image are of a unique color range, so it’s difficult in classifying them with their similar color range. Therefore, these range values will be determined using a 3-D grid for representing the highest image quality of the leaf.

**Proposed Methodology and Techniques:**

We will be using the ***‘Binary Segmentation’*** in order to get the binary image for the leaves within the dataset. Also, the ***‘Color Segmentation’*** is done in which the white background is removed to obtain the leaf image. We use the HSV (Hue, Saturation, and Value), manual calc in the Color Segmentation. These are done using the Matplot lib implemented in the python. ***‘Convolution Neural Network’*** is also applied which will act as a classifer for this project.

**Research References:**

1. Kumar Neeraj, Belhumeur N. Peter, Biswas Arijit, Jacobs W. David, Kress W. John, Lopez C. Ida. (2012). *A Computer Vision System for Automatic Plant Species Identification.* COMPUTER VISION.

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1. Lee Huan Sue, Chan Seng Chee, Paul Wilkin, Remagnino Paolo. (2015). *Deep-Plant: Plant Identification with convolution neural networks*. INTERNATIONAL CONFERENCE ON IMAPE PROCESSING (ICIP).

<https://ieeexplore.ieee.org/document/7350839>

1. Hossain Javed, Amin M. Ashraful. (2010). *Leaf Shape identification based plant biometrics.* INTERNATIONAL CONFERENCE ON COMPUTER AND INFORMATION TECHNOLOGY (ICCIT).

[*https://ieeexplore.ieee.org/document/5723901/authors#authors*](https://ieeexplore.ieee.org/document/5723901/authors#authors)

**Tentative Schedule:**

**Week 5**

* Project proposal

**Week 6**

* Paper reviews
* Data collection

**Week 7**

* Python coding
* Data Collection

**Weeks 8-9**

* Python coding
* Paper writing

**Week 10**

* Present