



Technical Board
IIT Guwahati



Coding Club
IIT Guwahati

Machine Learning

GC Points – 250

Final Submission Date & Time – 18 October (Friday), 23:59.

Last Updated – 16:05 | 11/10/2019

Contact Details

12 Hostels, 7 Days, 1 Title!

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Leaf Recognition Challenge

The leaf recognition is one of the most challenging problems in computer vision because of almost similar shape, texture and color of the leaves. There has been a lot of work done using various traditional machine learning algorithm and hand-made leaves features. But in this challenge, you will have to make an end-to-end deep learning model for multi-class leaf recognition.

Datasets

The provided dataset (dataset.tar.gz file) consists of 24694 train images and 3090 test(public) images and both have 185 classes. All images are of the size 224x224 pixels with 3 color channels.

Problem Statement

All participants have to make a deep learning model in python from scratch. You are free to use deep learning frameworks but cannot use pretrained model. Also, you are not allowed to import existing model directly from libraries however you can make the existing model from scratch using library functions (details explained in the rule). You must submit python scripts along with your model in “h5py” (.h5 format) format which will be used to evaluate its top-1 accuracy on both public and private (dataset not provided to you) test dataset.

Your python scripts must contain:

1. Model created from scratch using any of the python deep-learning or machine learning framework.
2. Codes which you wrote to train and evaluate your model, containing all the loss function, accuracy metric and the optimization methods which you have used.

3. A python function which takes path of the test dataset and h5py model as input and evaluate top-1 and top-3 accuracy of your model.

Evaluation

We will calculate the weighted average of your top-1 accuracy on public and private test set. 10% weight will be provided to the public test set and 90% to the private test set. Team with maximum score wins. In case of the same score of the two or more teams, the team with higher weighted top-3 accuracy wins.

Rules

1. Meaning of the word “scratch”: Say you are using Keras framework – you cannot directly import vgg16 model from `keras.applications.vgg16`, with or without ImageNet weights. However, you are free to make vgg16 using various keras layers like Conv2D, MaxPooling and all. Similarly, for any other framework.
2. Any form of copying codes from any sources will disqualify your team.
3. Maximum team size should be 3. The team must have at least one sophomore.

Link for the datasets: [kriti-ml-coding-club](https://kriti-ml-coding-club.github.io/)