README:

Before running these codes, you need to download the dataset from the link below: <https://www.plant-phenotyping.org/datasets-download>, and put the dataset directory ‘Plant’ and these codes in the same directory.

We claimed the version of packages in our report. Thus, here are the methods of running these codes.

Task1:

python3 task1\_colorthreshold.py

python3 task1\_hog\_svm.py

Task2:

Python task2.py

Task3:

**TRAINING**

Train the model again, using passing the path to the pretrained model and run the command below:

Python3 train.py --inputPath /path/to/your/datasets/train outputPath /path/to/your/training/directory --numEpochs 5

**DVALOPING**

To evaluate a model use 'inference.py'. To see all options run python inference.py --help. This script will evaluate each image and output the following into 'outputPath':

* The prediction for each image using the same filename as the input file and
* A file called 'leafCounts.csv' which contains the predicted number of leaves for each image.

Python3 inference.py --dataPattern 'Dataset/test/\*\_rgb.png' --outputPath result1

--weightsPath mask\_rcnn\_cvppp.h5

**EVALUATE**

To evaluate a model use 'evaluate.py'. To see all options run python evaluate.py --help. This script will evaluate each image in the ‘inputPath’ and output the following into 'outputPath':

* '\*\_rgb.png': For each image a figure which compares predicted and ground truth annotations
* 'overallResults.csv': The following segmentation metrics (mean and standard deviation) for all images:
  + Symmetric best dice (Dice)

Python3 evaluate.py --inputPath /path/to/your/datasets/test --outputPath /path/to/your/test/results/directory --weightsPath /path/to/your/training/weights/ mask\_rcnn\_cvppp.h5