



Python and Deep Learning Programming

CSEE 5590 0001

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Lab Plan Report

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Plant Seedlings Classification

(Determine the species of a seedling from an image)

Kaggle Link:

The data from Kaggle is Plant-Seedlings Classification

<https://www.kaggle.com/c/plant-seedlings-classification/overview>

Inspiration:

We have decided to work on this project because of the following reasons.

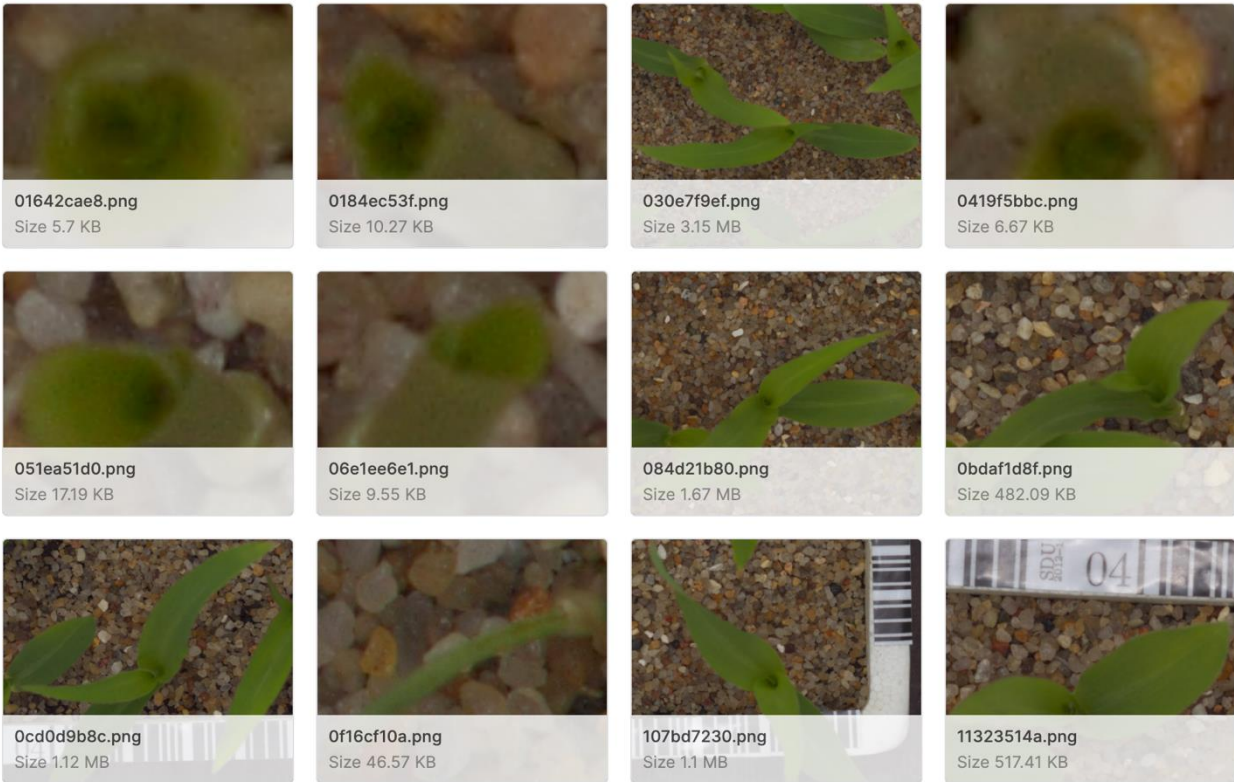
- Can you differentiate a weed from a crop seedling?
- Classifying the data through images by training with images.

Project Overview:

The ability to do so effectively can mean better crop yields and better stewardship of the environment.

The Aarhus University Signal Processing group, in collaboration with University of Southern Denmark, has recently released a dataset containing images of approximately 960 unique plants belonging to 12 species at several growth stages.





We're hosting this dataset as a Kaggle competition in order to give it wider exposure, to give the community an opportunity to experiment with different image recognition techniques, as well to provide a place to cross-pollenate ideas.

Data Description:

Given are 4750 labeled images (1.73GB) showing plants of 12 different types, the goal is to classify correctly the species shown on the 794 images (91MB) of the test set. All images are quadratic but vary in size. We are provided with a training set and a test set of images of plant seedlings at various stages of grown. Each image has a filename that is its unique id. The dataset comprises 12 plant species. The goal of the competition is to create a classifier capable of determining a plant's species from a photo. The list of species is as follows:

- Black-grass
- Charlock
- Cleavers
- Common Chickweed
- Common wheat
- Fat Hen
- Loose Silky-bent

- Maize
- Scentless Mayweed
- Shepherds Purse
- Small-flowered Cranesbill
- Sugar beet

Dataset Description:

- train.csv - the training set, with plant species organized by folder
- test.csv - the test set, you need to predict the species of each image
- sample_submission.csv - a sample submission file in the correct format

Conclusion:

- Using a subset of the samples provided in the data set of each species for training, we can achieve an accuracy.
- Using all labeled data for training and making use of little data augmentation, we can obtain an more accuracy on the test set.