Çağrı Erciyes:

I fixed removing stem algorithm and it works well. I examined the reasons of fail segmentation and noticed that besides the clustering, there is a problem at thresholding method. Also, clustering suffers from shades and darkness on the surface of leaf. For removing shades from the image, I searched many papers and then implement the GrabCut algorithm for foreground extraction; but it didn't work well. Then, I tried to fill the empty areas in clustered image to rescue image from the destruction by changing our "imfill" function. It works for one-piece leaves, but not for multiple-piece leaves, so that is not a solution. Hence, we must correct cluster and thresholding methods to provide the most suitable background elimination.

İlke Çuğu:

Caffe is fine-tuned again with 4 * rotation (90 degrees). This time iteration count was 30000, so the accuracy became 91%. Dataset is modified in order to have all leaf images pointing upwards. Our server is deployed successfully at Google Compute Engine. . Therefore, we are not limited by local area network anymore.

Eren Şener:

I trained several SVM Classifiers with different set of feature vectors.

1) Two SVM classifiers are trained with new set of features. Feature vector size is 56. (Old one was 47.)

(ccd = center contour distance feature, there were 3 versions of ccd. ccd_v1 could not be trained because of NaN values.)

*Classifier 1 - ccd_v2: Accuracy found as 69.16% ***
Classifier 2 - ccd_v3: Accuracy found as 68.20%

Note: Accuracy - Classifier 1's results for test images were obtained.

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Caffe Accuracy: 90.97%
SVM Accuracy : 64.64%

Caffe failed 129 times in 1428 instances. And SVM successfully guessed **37** of these fails.

As a result, with the new set of features SVM classified more images correctly when it is compared with old results.

Old classifier was successfully classifying 12 of these fails.

2) Another SVM Classifier trained with merged feature vector, which contains Caffe's (4096) and our features (56). In total, classifier trained with 1x4152 scaled feature vector.

Classifier 3 - Accuracy found as 87%.

Classifier 3's results for test images were obtained.

Caffe Accuracy: 90.96%
SVM Accuracy : 88.02%

Caffe failed 129 times in 1427 instances. SVM successfully guessed **68** of these fails.

As a result, with merged set of features SVM classified more images correctly when it is compared with other results.

3) After training these classifiers, I trained other classifiers which use features obtained from Caffe. Following accuracies were calculated.

Kernel	*Layer*	*Accuracy*
linear	NoFineTune & fc7	92.46
rbf	NoFineTune & fc7	90.83
rbf	NoFineTune & fc7	85.46
rbf	NoFineTune & fc7	88.46
linear	**NoFineTune & fc6**	**93.03**
linear	NoFineTune & pool5	92.52
linear	**FineTune & fc6**	**93.59**
linear	FineTune & fc7	92.51

Burak Balcı:

Some bugs were resolved. 292 photographs belonging to 16 species have taken. Neural network with various topologies was trained but no any successful model was able to be created. In two classes classification, while training accuracy was 84 percent at its highest, testing accuracy was always 50 percent. In multiclass classification, even training accuracy was 35 percent at its highest.

Emre Akın:

- I redesigned the application tutorial with new scenes and with better performance.
- Lots of bug fixing have handled.
- Tree and Latin names that are shown to the user changed from like 'adi_gurgen' to Adi Gürgen in both search activity and my observation tab.