# Retrospective Document

## Sprint-2

## Work & Test Progress

Milestones:

1. *Development of Our Own Neural Network for Classification - %40*
2. *Deploying Full Client-Server Architecture - %100*
3. *Translation of Image Processing Codes and Algorithms to Python Language - &100*
4. *Developing friendly user guide tutorial for Android application and fixing some bugs - %95*

Finalized Tests as Part of the Milestones Planned for this Sprint:

- *Android Device - Caffe Server Communication Test*
- *Caffe Tree Identification Model v4 Accuracy Test*
- *Trained Neural Network Accuracy Test*
- *Trained SVM Accuracy Test*
- *Android Device Gallery Bug Free Test*

## Team Progress

- Ilke Cugu - %100
- Eren Sener - %97
- Çağrı Erciyes - %95
- Emre Akın - %95
- Burak Balcı - %96

## Left-overs (Backlog)

Following milestones could not be 100% completed.

*1. Development of Our Own Neural Network for Classification*

*- This milestone rejected by our team and was not successfully completed since we got insufficient training and testing accuracies from trained classifiers.*

4. Developing friendly user guide tutorial for Android application and fixing some bugs

- User guide tutorial is almost completed, but some design decisions can be changed in the next sprint.

## Next Sprint

*Milestone #1: Training of SVM and Merging Results of Caffe and SVM*

*During the sprint:*

- *> Training of SVM will be completed.*
- *> Classification results of SVM will be merged with Caffe Tree Identification Model's results.*
- *> Accuracy test will be run on the hybrid system.*

*At the end of the sprint:*

*> We will have an ensemble classifier which uses both Caffe and SVM to determine the species of given leaves*

*Milestone #2: Construction of Enhanced Caffe Tree Identification Model*
*During the sprint:*
*> A Python script, which produces 8 leaf images for a particular leaf image by rotating it 45 degrees in order to prevent accuracy loss due to variety of leaf positions in images, will be written*
*> Leaf stem removal will be applied to our dataset.*
*> New leaf images will be gathered in order to reach 50 tree classes.*
*> New leaf images will be gathered in order to raise number of training images of current leaf classes (42 classes).*
*> 'tree_identification_v5.caffemodel' will be released.*
*> Accuracy test will be run on our Caffe Tree Identification Model.*
*At the end of the sprint:*
*> We will have an enhanced Caffe Tree Identification Model powered by our latest improvement ideas on identification process.*

*Milestone #3: Deprecated camera hardware will be converted to camera2 hardware with new features in the Android application.*
*During the sprint:*
*> Camera hardware that we are using for taking images will be converted to camera2 hardware*
*> New features for camera will be added.*
*At the end of the sprint:*
*> Camera2 hardware will be ready to use.*

*Milestone #4: Android design will be improved.*
*During the sprint:*
*> Design of navigation view will be improved.*
*> Design of leaf results coming from server will be improved.*
*> My observation tab in the Android application will be improved with new features.*
*At the end of the sprint:*
*> We will have a better design.*

*Milestone #5: Search for new features could be extracted from the leaf image.*
*During the sprint:*
*> OpenCV shape descriptors will be examined.*
*> Feature extraction algorithms will be searched from articles.*
*> Available found features will be implemented by using OpenCV.*
*At the end of the sprint:*
*> We will have new features to add on our feature vector.*

## Comments

*It was another perfect sprint for our team.*

## Assistant's Evaluation

*Assistant's (Team Leader's) comments regarding to this completed sprint.*

## Supervisors's Evaluation

*Supervisor's (Team Leader's) comments regarding to this completed sprint.*