Sprint Evaluation

What is the progress of your project in this sprint? What goals are achieved? What problems are overcome? If you are updating your plans what are your justifications?

- We have more than 15 tree species in our database and we are still gathering more images.
- Design of the android application nearly finished with all of its features. Web view, custom widget buttons, action tab bars and search button has been added to the application. Moreover, some camera and gallery properties have been fixed.
- We are learning Neural Networks and SVM for leaf-based tree identification. In addition, we are using Caffe Deep Learning Framework in order to improve our understanding.
- We have encountered installation problems on Caffe and CUDA. However, at the end, we successfully installed the framework and tested its pre-trained module for 4 different tree species. Since, machine learning is a tough area, we will continue to learn throughout 3. sprint.
- Parallelization experiments on image classification codes will be run. However, image processing codes are being written in MATLAB for now and there will be a possible move from MATLAB to C++ or Java codes. Therefore, experimenting process is on hold for now.
- We generated different algorithms for image segmentation before the feature extraction part and we will compare these results with our Supervisor and then select the most effective one.
- We faced a problem with noisy images because our background subtraction was not global enough, but we found a good method to achieve that, so our enhancement functions will work on noisy images too.
- We are learning which features can be extracted from the image and which methods can be used. We started to implement basic functions too such as usage of gradient and color distribution of leaf.

Team evaluation

How well is your team working together? How many meetings did you hold? Are you planning any changes in your cooperation strategy? Which work is completed by which member (in a Gannt chart)?

- So far so good.
- We have arranged 3 meetings with our Team Leader, 2 meetings with our Supervisor and 4 meetings without Team Leader or Supervisor until now.
- We don’t have any plans to change our cooperation strategy.

Task	Assigned Member	1st week	2nd week	3rd week
Learning MATLAB usage for Image Processing	Burak Balcı	X	X	X
Extraction of Leaf Contour	Burak Balcı		X	
Center Contour Distance Feature Descriptor	Burak Balcı			X
Lab Color Space and Background Elimination	Burak Balcı			X
Making the Android app design better	Emre Akın	X	X	X
Android – Fixing little flaws	Emre Akın	X	X	X
Android - Search Button	Emre Akın		X	X
Android - Creating custom view to the widgets	Emre Akın			X
Android - WebView	Emre Akın			X
Gathering Leaf Images From Online Sources	Eren Şener	X	X	X
Caffe Framework Testing	Eren Şener		X	X
Deep Learning - Setting Up Caffe Framework	Eren Şener		X	
Examining the Implementations of Caffe	Eren Şener			X

Framework				
Caffe Framework Testing	İlke Çuğu	X	X	X
Complete Lecture 1,2 and 3 of Neural Networks Class at Coursera	İlke Çuğu			X
Caffe Framework Testing for Different Tree Speecies and Comparison of Results	İlke Çuğu			X
Complete Lecture 4 of Neural Networks Class at Coursera	İlke Çuğu			X
Collecting Leaf Samples from Campus	Çağrı Erciyes	X	X	
Improvement on Segmentaton of Image	Çağrı Erciyes			X
Develop Database	Çağrı Erciyes			X
Working on Spatial Domain Filters	Çağrı Erciyes	X	X	X

Backlog Updates

What are your backlog updates?

- Parallelization experiments are on hold, because current progress on image processing part is achieved with MATLAB. However, C++ or Java versions of image processing codes may be written in near future. There will be a design choice about that soon.
- We will continue with Caffe and we will train the framework with our own dataset.
- Normally in sprint two, design of the android application should have been finished. However, since adding some important and necessary feature's search and implementation took much time, design will also continue in sprint three's first week.
- Normally, in image processing part, we planned to begin with "Image Classification" task , but we required large data set for training, so we passed immediately to "Image Segmentation" part and also, started to implement basic feature extraction operations beside segmentation.