Thursday April 12th, 2018 Scrum Meeting Log

Cesar Neri

- **What have you been working on since the last meeting?**
  Created script to preprocess an image for further use (Represent image as matrix of pixels of RGB values)
- **What will you be working on now?**
  Optimize image preprocessing script by attempting to isolate only an area of interest in an image of interest
- **Issues/Problems encountered**
  It is not known which techniques will be optimal in the end. Work done is only tentative

Arindam Sarma

- **What have you been working on since the last meeting?**
  Research on edge detection.
- **What will you be working on now?**
  Generation of test images / edge detection framework.
- **Issues/Problems encountered**
  Lack of template for images.

Kevin Ajili

- **What have you been working on since the last meeting?**
  Managed project meeting times, created initial release plan and sprint plan to have the team review and edit them, and did initial research on comparing images using Python.
- **What will you be working on now?**
  Implementing the image comparison code and testing it to see the effectiveness.
- **Issues/Problems encountered**
  There are many ways to compare images using code, so choosing the right methods for our needs was a challenge.

Eric Su

- **What have you been working on since the last meeting?**
  Wrote a short script that converts every frame in a video file to a .png file
- **What will you be working on now?**
  Researching green detection in RGB, doing Tensorflow tutorials
- **Issues/Problems encountered**
  Script only saves images to current folder. This could be an issue in the future which can easily be adjusted as needed.

An Tran

- **What have you been working on since the last meeting?**
  I been searching up information about comparing images and subtracting background from images, so that only needed part of images can be seen.
- **What will you be working on now?**
  Running softwares to test the effectiveness of the software.
- **Issues/Problems encountered**
  None so far.

David Munoz

- **What have you been working on since the last meeting?**
  Research into edge detection and the documentation/API for tensorflow and openCV.
- **What will you be working on now?**
  Work with arindam in order to get a simple program that can be trained with fabricated data.
- **Issues/Problems encountered**
  Unsure if edge detection will be the answer and fabricating/labeling data

Saturday April 14th, 2018 Scrum Meeting Log

Cesar Neri

- **What have you been working on since the last meeting?**
  Refactored script to process an image as matrix of pixels to use updated library (From PIL to Pillow)
- **What will you be working on now?**
  Explore the idea of creating a mask to remove unnecessary pixels
- **Issues/Problems encountered**
  None at this point

Arindam Sarma

- **What have you been working on since the last meeting?**
  Research on edge detection.
- **What will you be working on now?**
  Generation of test images.
- **Issues/Problems encountered**
  Sparse data in image bank of contaminants.

Kevin Ajili

- **What have you been working on since the last meeting?**
  Research done on comparing images to find a percent similarity, and also on an image recognition method called template matching. Began initial work on testing these methods.
- **What will you be working on now?**
  Continuing working on the code for image comparisons to find a percent similarity and also initial work on template matching.
- **Issues/Problems encountered**
  Unclear what the best usage of these methods are, though they will clearly be useful.

Eric Su

- **What have you been working on since the last meeting?**
  Researching color detection methods
- **What will you be working on now?**
  Researching color detection methods
- **Issues/Problems encountered**
  None yet

An Tran

- **What have you been working on since the last meeting?**
  Working to collect the S3 bucket images by use of browser.
  Figure out the coding to determine the similarity by pixel.
  Looking for information to decrease the amount of information.
- **What will you be working on now?**
  Comprehend the codes that were found online and messing with the codes to even gain more understanding of what will happen when certain lines within the codes change.
- **Issues/Problems encountered**
  None

David Munoz

- **What have you been working on since the last meeting?**
  Testing Matlab Edge function with a simple program.
- **What will you be working on now?**
  Moving on to using different Matlab API for 'Fuzzy Logic' and 'Sobel' Method.
- **Issues/Problems encountered**
  The image quality of our current data is poor, and lines are not clean/clear.

Tuesday April 17th, 2018 Scrum Meeting Log

Cesar Neri

- **What have you been working on since the last meeting?**
  Created a script that displays an image and detects mouse interaction on it. This can be used to create a personalized mask for a specific image
- **What will you be working on now?**
  Successfully create a mask that will block out unnecessary pixels, and add the ability to save an export mask
- **Issues/Problems encountered**
  None at the moment

Arindam Sarma

- **What have you been working on since the last meeting?**
  Research on edge detection.
- **What will you be working on now?**
  Testing edge detection.
- **Issues/Problems encountered**
  Poor image quality.

Kevin Ajili

- **What have you been working on since the last meeting?**
  Worked on the code for image comparisons to find a percent similarity and also began initial work on template matching. Can now find a percent similarity from a source image compared to multiple other images.
- **What will you be working on now?**
  Finish up testing the percent similarity code and then do further research and testing on template matching. Template matching seems like it could be useful to block out certain areas of images because it can be used to find areas that are the same between images. Further research and decision making must be done.
- **Issues/Problems encountered**
  The main problem at this point is that I'm not sure what the best applications of these scripts will be for our project specifically, and so I'm figuring it out through testing.

Eric Su

- **What have you been working on since the last meeting?**
  Wrote a script that allows the user to select a range of RGB colors from an image
- **What will you be working on now?**
  Implementing more user-versatile features, such as putting RGB values in command line args
- **Issues/Problems encountered**
  none

An Tran

- **What have you been working on since the last meeting?**
  Understanding and messing with the online codes.
- **What will you be working on now?**
  Completely understand and finish modifying the codes.
- **Issues/Problems encountered**
  None

David Munoz

- **What have you been working on since the last meeting?**
  Have only read up on the methods from matlab documentation.
- **What will you be working on now?**
  Still trying to work with the sobel and fuzzy logic methods with matlab.
- **Issues/Problems encountered**
  None during this period.

Thursday April 19th, 2018 Scrum Meeting Log

Cesar Neri

- **What have you been working on since the last meeting?**
  Messed around with a basic MS paint-like tool to highlight a specific area to be used as a mask
- **What will you be working on now?**
  Continue working on the masking process
- **Issues/Problems encountered**
  None at this point. Just need more time

Arindam Sarma

- **What have you been working on since the last meeting?**
  Testing edge detection.
- **What will you be working on now?**
  Reworking image processing for tests.
- **Issues/Problems encountered**
  Mistakes made when handling images.

Kevin Ajili

- **What have you been working on since the last meeting?**
  Visited the True Leaf Farms produce factory with Atollogy in order to learn more about the project being done and better assess the research and experimentation that must be done by our group. Continued work on template matching and it seems the code will be useful as it does what it should.
- **What will you be working on now?**
  Further testing is required on template matching, specifically trying to manipulate the template image in order to see if it's still detected in the source image. This is to find the limitations of this method in terms of solving the contaminant problem.
- **Issues/Problems encountered**
  It seems like rotating the template image causes issues with matching the template in the source image. Further testing is needed to find out what the limitations and strengths of this method are.

Eric Su

- **What have you been working on since the last meeting?**
  Testing my color detection script on images of spinach to get a variety of green
- **What will you be working on now?**
  Still testing, researching ways to isolate certain pixels of an image so they won't get analyzed
- **Issues/Problems encountered**
  Cannot seem to find a way (yet) of drawing on an image

An Tran

- **What have you been working on since the last meeting?**
  Looking up ways to find images within an image.
- **What will you be working on now?**
  Combining the what I found with the other codes I found online.
- **Issues/Problems encountered**
  Encounter problem with handling files by folder.

David Munoz

- **What have you been working on since the last meeting?**
  Used Matlab edge function
- **What will you be working on now?**
  Continuing to use Matlab and find a way to integrate it into a python system
- **Issues/Problems encountered**
  None

Saturday April 21ˢᵗ, 2018 Scrum Meeting Log

Cesar Neri

- **What have you been working on since the last meeting?**
  Explored the idea of representing matrix of pixels as a linked list once that they have been masked
- **What will you be working on now?**
  Same as above, and figure out whether it is effective to continue pursuing masking
- **Issues/Problems encountered**
  None at this point

Arindam Sarma

- **What have you been working on since the last meeting?**
  Reworking image processing for tests.
- **What will you be working on now?**
  Verifying test results.
- **Issues/Problems encountered**
  Nothing major.

Kevin Ajili

- **What have you been working on since the last meeting?**
  Worked on researching and testing method of comparing images called template matching using OpenCV. Tested being able to detect a template in an image one time.
- **What will you be working on now?**
  Continuing to test template matching, especially to find a template in an image multiple times. Also looking into how we can apply template matching and image comparisons into finding contaminants.
- **Issues/Problems encountered**
  Not every method of template matching works for each set of images, some are better than others in certain situations. So it's best to use multiple.

Eric Su

- **What have you been working on since the last meeting?**
  Getting an average of colors in a certain area to reduce computations required
- **What will you be working on now?**
  (same as above)
- **Issues/Problems encountered**
  Not entirely sure how to distribute an "average" of color across RGB, researching this

An Tran

- **What have you been working on since the last meeting?**
  At most, I been reviewing the codes I found online.
- **What will you be working on now?**
  I be working on more of the code that will delete the background.
- **Issues/Problems encountered**
  None

David Munoz

- **What have you been working on since the last meeting?**
  Since last Thursday I have not worked on the since last meeting.
- **What will you be working on now?**
  I'm going to research how to integrate Matlab into a python system.
- **Issues/Problems encountered**
  None

Thursday April 26th, 2018 Scrum Meeting Log

Cesar Neri

- **What have you been working on since the last meeting?**
  No tasks completed at the moment
- **What will you be working on now?**
  Update script to specify number of pixels desired in an area to be averaged. Work on creating our own data images. Work with the entire team on combining our code.
- **Issues/Problems encountered**
  Programming assignment from a different class

Arindam Sarma

- **What have you been working on since the last meeting?**
  Working with line recognition in images.
- **What will you be working on now?**
  Reviewing other edge and line detection algorithms.
- **Issues/Problems encountered**
  A lot of unfamiliar math.

Kevin Ajili

- **What have you been working on since the last meeting?**
  Tested the template matching code for multiple cases, such as using one template image on multiple different source images, and also trying to rotate and scale template images to see how it affects the results. Also worked to think of possible camera placements for Atollogy.
- **What will you be working on now?**
  Preparing to and then actually working to combine the template matching and/or percent similarity comparison codes with the rest of the teams code.
- **Issues/Problems encountered**
  Rotating and scaling, and other forms of editing a template image, affect the results of template matching quite negatively. The uses of this code are definitely limited but I still believe there are applications of it.

Eric Su

- **What have you been working on since the last meeting?**
  Wrote
- **What will you be working on now?**
  Researching
- **Issues/Problems encountered**
  Script

An Tran

- **What have you been working on since the last meeting?**
  Testing the code that Kevin been working on. Trying to figure out what we, as a team, need to make our codes effective as it can for detecting contaminant.
- **What will you be working on now?**
  Try to combine the codes together.
- **Issues/Problems encountered**
  None

David Munoz

- **What have you been working on since the last meeting?**
  I have been trying to work with different thresholds/parameters to see if it possible to grab individual leaves from a pile.
- **What will you be working on now?**
  I am will continue to tweak and add to the script until saturday when we attempt to create a system together
- **Issues/Problems encountered**
  Having issues trying to call my script through python.