Summary of Methods: Outline

RGB:

* Dissected images into 3 component red green and blue images
  + MATLAB was used to import image data
  + Used Teams Midterm code to preprocess images
  + Particular methods for image processing in MATLAB may take longer to research and implement than using other programs (like RGB filtering)
* Channeled RGB components through original images by filtering
  + Read the image in using imread and im2double.
  + Scaled photo with imresize for memory efficiency.
  + Indexed Color layer to extract RGB components
* Particular methods for image processing in MATLAB may take longer to research and implement than using other programs (like RGB filtering)
  + A RGB component- whether Red, Blue or Green- did not change color; the only coloring of the image was its “channel”
  + Dr. Pineda a more finer method such as RGB filtering would be better used if we had n>100 images to process, and the tam agreed
  + Tabled until further notice

Scalar Volume

* Constructed data structure which housed 3d scalar image data
  + Used MATLAB’s structure properties
  + Structures hold data( in string, arrays, numerical matrices) in cells
  + One can run a function over cells to manipulate indexed data
* Used for editing many images at once which saves memory
  + Images were able to be read in and have preprocessing functions( Katherine’s code came in clutch)
  + Ran a for loop to read in images
  + Resized images added to structure by for loop
* Attempted to plot data but unsuccessful
  + Created 3d volume structure and hypothesized plotting the data
  + Used a structured example but could not get it to work
  + Tabled until further notice

Masking

* Worked with mike to compose new images from their mask
  + Used Team MATLAB code to preprocess images
  + Multiplied image array of mike’s mask with an original image
  + Generated 3D figure ( perfected by Mike and easy to upload images because of his importation method)
* Mike photo shopped images and I preprocessed images for example meeting
  + I used a MATLAB 3D Vis. Guide to experiment with the 3D figure
  + Able to contour the individual lines
  + Manipulated contour slices to precise contour lines ( HYG colorscale)
* Mike was successful in removing bark and creating 3D figure
  + 3d figure was generated and that is where our efforts lead up to

Smoothing 3D Data

* Currently Implementing

Mesh grid

* Used Tiffany’s .csv to scale image/brush widths
  + Scaled sagebrush dimensions
  + Need to apply to volume
  + Need to Mesh grid dimensions
* Attempting to Z-stack brush to scale
  + Once Meshed, will apply dimensions to Mike’s Figure
* Currently measuring resolution losses that preprocessing induces
  + Once Meshed, will measure the error between hi-res and low-res products