Name: Jacob Panikulam

Long term goal: Fully autonomous segmentation

One month goal: Effectively segment gold-standard images

Statement of Purpose

My goal is to substantially reduce the amount of time and effort required to both segment and separate an image. Meaning, the vast majority of all segmentation related effort will be computerized before **Beta** testing. If fully autonomous segmentation is not possible by June, the non-automated inputs will be simplified enough that they can be done quickly, cheaply and remotely.

Table of Deliverables

Task:	Delivery By:	Item:	Complexity:	Value:	Status:
Segmentation	12/6/2013	Bayesian Classifier	High	This is the machine learning method that this segmentation process will use.	Done
Segmentation	12/13/2013	Parallelize Code	Low	Decrease the amount of computing time that segmentation needs.	Done
Segmentation	12/20/2013	Reduce false positives by 90%	Med	Removing the "Blue" in the accuracy visualizations.	Done
Segmentation	Jan, 2014	Begin technique patenting process	---		
Segmentation	1/14/2014	All large vessel segmentation done by machine	High	Substantially reduces human time requirement. All large vessels will be segmented with minimal noise, holes or discontinuity.	Done
Segmentation & Separation	2/17/2014	Color Correction	Med/High	Allow a larger variety of input images and compensates for minor defects and dissimilarities in lighting	In Progress
Segmentation	2/21/2014	Automatic Process Testing and Improvement	Med/High	Fine tuning parameters and minor differences in techniques is time consuming. To overcome this large time sink, an EC2 server will be rented and tests will be automated.	In Progress
Segmentation & Separation	3/11/2014	Autonomous Continuity Reassembly	High	Segmentation often produces splintered and discontinuous vessels. This will further reduce human time requirements by intellligently determining which vessels should be	In Progress
Separation	4/8/2014	Implement first pass at artery/vein separation	High	Distinguish arteries from veins	
Analysis & Segmentation	5/4/2014	Implement Voronoi Cell 'ideal' vasculature	Med	Provides "Ideal" vasculature model, goes hand-in-hand with continuity reassembly, and will help in back-	
Segmentation	June-August 2014	Autonomous Segmentation	High	Completed during or before Beta testing.	