

## Daily Log

### Monday, February 17

Decreased the number of segmentations each image is divided into, and cut out a for loop that I'm not sure what it was doing. The accuracy does not appear to have decreased, but run-time has decreased to a more reasonable time for larger pictures.

### Tuesday, February 18

Matched the 'northernmost' point on the object with the 'southernmost' point on the shadow.

### Thursday, February 20

Used a point in the shadow region and a point in the object to determine if I should match the 'northernmost' point on the object with the 'northernmost' or 'southernmost' point on the shadow, since choosing which point depends on where the shadow lies with respect to the object.

## Timeline

Date	Goal	Met
February 16	Isolate the critical points on the object from all critical points located on the image.	Yes, the critical points closer to the shadow region in XY/LAB distance are the points located on the shadow or object.
February 23	Find critical points for round objects	No, I used the shape as a whole to try and find its corresponding shadow, and I could not figure out to handle objects that were round enough to not have any corners detected but cast a shadow not round enough to be considered a circle or oval.
March 1	Associate at least 1 key point on the shadow with its respective point on the object	Yes, for the most part. It may not be as accurate as when a human identifies the points, but it's matching points assuming that the identified points are correctly identified as corners.
March 8	Decrease run time to within one minute.	
March 15	Associate at least 2 key points on the shadow with their respective points on the object	

## Reflection

To associate more points between the shadow and the object, I will have to consider taking the leftmost and rightmost identified points when matching the points, since that would get a better intersection prediction of the location of the light source.

My end of the year goal:

A: The program will take an image with one prominent object and its shadow, then output the same image with two rays tracing the light source location where the intersection of the two rays is the predicted light source location. It will do this in under thirty seconds.

B: The program will take an image with one prominent object and its shadow, then output the same image with one line along which it is predicted the light source is located. It will do this in under one minute.

C: The program will take an image with one prominent object and its shadow, then output the same image with one line along which it is predicted the light source is located. It will do this in under two minutes.