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Period 1, White

Daily Log

Monday, February 3

Ran the shadow detection, object detection, and feature detection codes on some images from a large data set from Berkeley CS for computer vision. Looked for patters in misinterpreted results.

Tuesday, February 4

Returned to try and improve Gabor Filter results. Added a contrast and brightness adjustment along with a median blur before adding the filter.

Thursday, February 6

Combined the new Gabor Filter with the Harris Corner Detector, only looking at points that lie on or very close to the boundaries identified by the Gabor Filter.

Timeline

Date	Goal	Met
January 19	Identify at least 4 key points on the shadow and object	Yes, the points are identified, but I still have trouble with deciding which identified points are useful for the next step.
January 26	Associate at least 1 key point on the shadow with its respective point on the object	No. I'm having trouble especially when matching points for irregularly shaped objects.
February 2	Associate at least 1 key point on the shadow with its respective point on the object	No, I'm still working towards finding better points.
February 9	Isolate the critical points on the object from all critical points located on the image.	
February 16	Associate at least 1 key points on the shadow with its respective point on the object	

Reflection

As it turns out, by decreasing contrast, increasing the brightness, then adding a rather drastic median blur, the Gabor Filter is able to pick out the boundaries of the object fairly accurately without any extra background noise. Namely, it doesn't pick up on the sand or the blades of grass. While one set of adjustment values seems to work well across most pictures, there are certain images that require minor changes in the contrast value. I am trying to figure out a function that can be used for all images.

However, on images that do have boundaries properly identified, I am able to find at least 1 or 2 points on the boundary from the Harris Corner Detector by taking points on or near boundaries found by the Gabor filter. Again, I run into the problem with round objects, like the apple and baseball, but the detector is finding points on the flower's round petals, probably because there is still somewhat of a point rather than a perfect semicircle at the petal tip.