

Journal Report 13

01/05/20-01/12/20

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Period 1, White

Daily Log

Monday, January 6

Reviewed current code and reread research papers to refresh the algorithm thought process.

Tuesday, January 7

Researched methods to detect unique features in images. Implemented a key feature detection method from OpenCV for unedited colorful pictures.

Thursday, January 9

Implemented the feature detection method from OpenCV using the images with the shadow and object boundaries isolated. Played around with method values to try and improve accuracy for recognizing points like corners.

Timeline

Date	Goal	Met
December 15	Identify all objects with shadows in the image	Yes, in that I can isolate objects based on a border. However, I don't label the object region, only the texture borders are labeled.
December 22	Associate objects with their shadows on the image	Yes, objects are grouped with shadows, but the identification of the borders of the object still appear more like a rough sketch.
January 12	Identify at least two key points (corners, sharp points, etc.) on the shadow and object	Yes, the current code does locate two points if given an image where only the shadow regions and boundaries of the object are marked. However, many extra points are also identified.
January 19	Identify at least 4 key points on the shadow and object	
January 26	Associate at least 1 key point on the shadow with its respective point on the object	

Reflection

Although the current feature detection code is working, too many extra points are identified alongside the key points I'm looking for. I think no matter what direction the light is coming from, points like corners and sharp points will remain corners and sharp points, and their orientation with respect to each other should also stay the same. So, being able to accurately mark which points are corners or sharp points would help with matching how the shadow and object are associated with one another.

There seems to be multiple approaches to finding such key features, and I may have to look into making the processed image less noisy after finding the object boundaries in order to get better results. I might also look at other ways for finding the features if the current implementation labels too many useless points as significant.