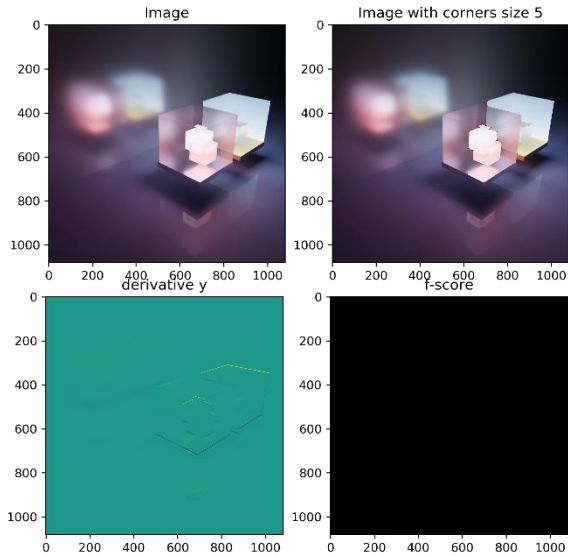


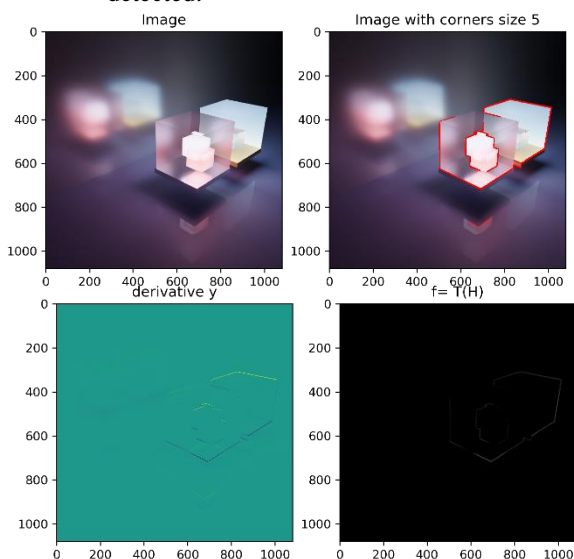
Project 2 Write Up

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I. P2.1.1 Harris Corners



- A. In the Image the corners detected were where I expected them to be, however I did not expect the f-score image to be blank.
- B. I did not expect the function to detect corners of overlapping intersections between 2 objects (front and back cube). I also thought that all the corners of the cubes would have been easily detected.

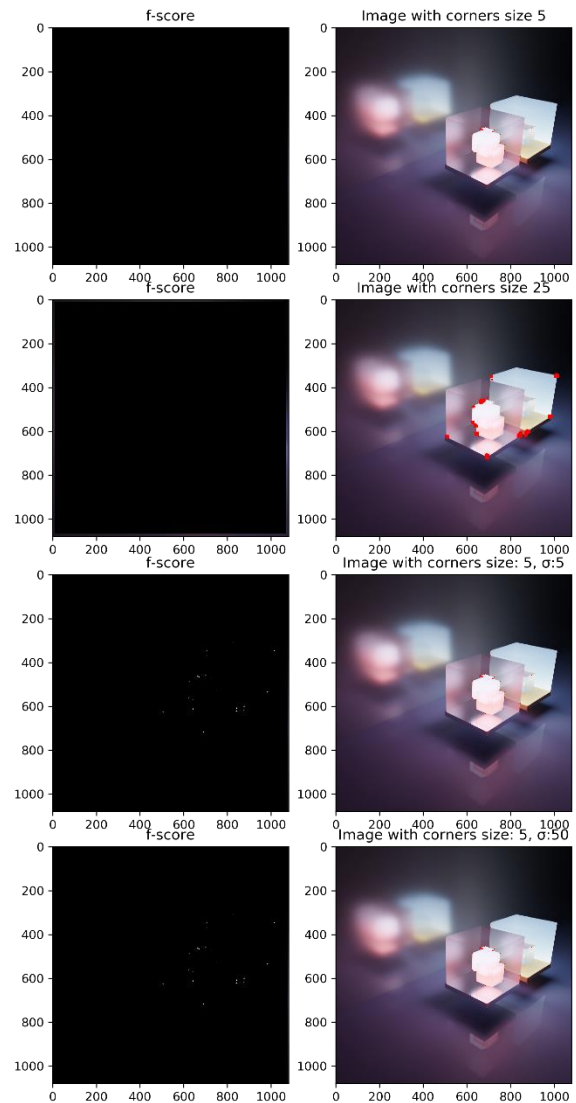


- C. Using the alternative function turns this into an edge detection. As you can see above most of the edges have been marked.
- D. This new scoring function detects edges.

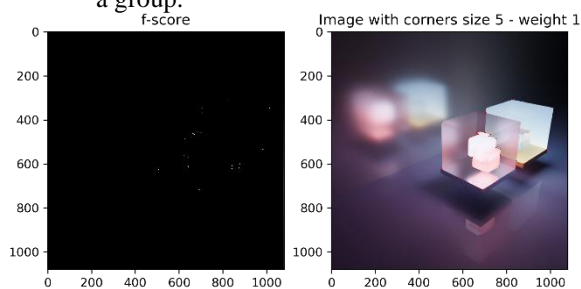
- E. We would not want to use this scoring function to detect corners because we need the determinant to be able to find the corner intersections.

II. P2.1.2 Varying the Weight Matrix

- A. It seems that the corners become clearer as the sigma filter is applied and made larger. While uniformly weighted matrices do not amplify corner values enough to appear on the f-score image.

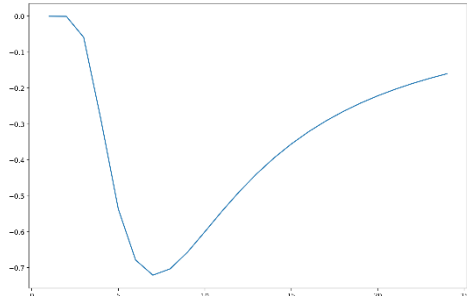
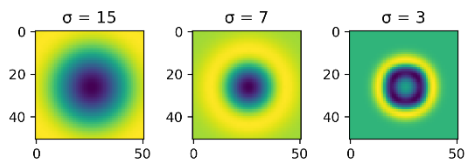
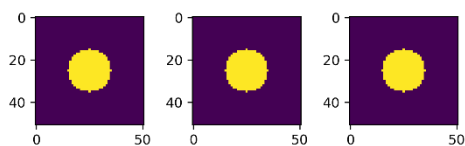


- B. The corners appear better than before with the non-sigma filters, and this happens because corners are being evaluated 1 by 1 rather than as a group.



II. P2.2.1 Scale-Normalized Filter Response

- A. There is a relationship between the radius and sigma. This relationship is that sigma equals the radius divided by the square root of 2.



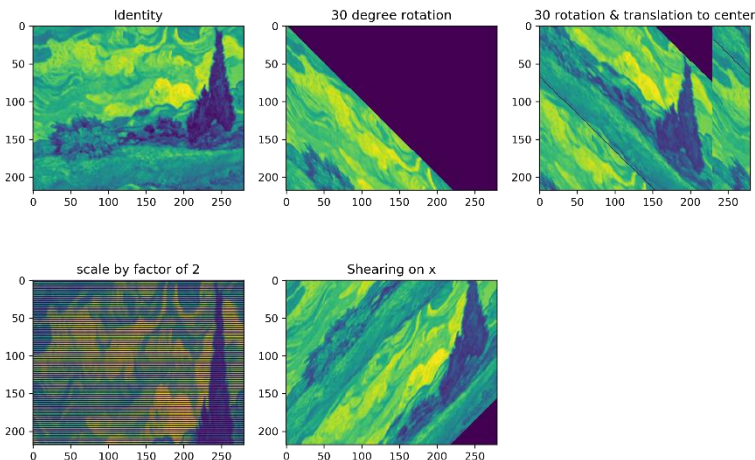
III. P2.2.2 Annotating an Image with Multi-Scale Detection

Was not able to complete this part.

IV. P2.3 Image Warping

- A. To homogenize the image all values need to be divided by the bottom values. This creates an image that is warped stretching it allowing us to make an out of plane rotation with vanishing points at infinity.

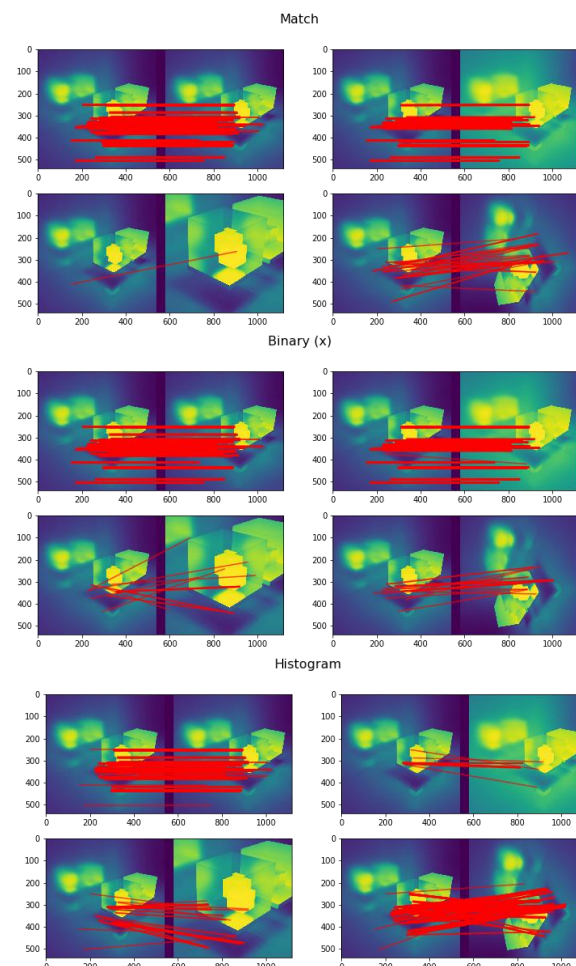
(Images are in the next column)



V. P2.4 Experimenting with Some Simple Feature Descriptors

- A. The histogram performs poorly on the contrasted image. It did not perform well because it is not discriminative.

- B. The histogram performs best on the transposed image. It performed best because it is invariant.



References:

For the Harris corner detection Wikipedia and <https://github.com/hughesj919/HarrisCorner> were used for reference and guidance.