

Computational Photography

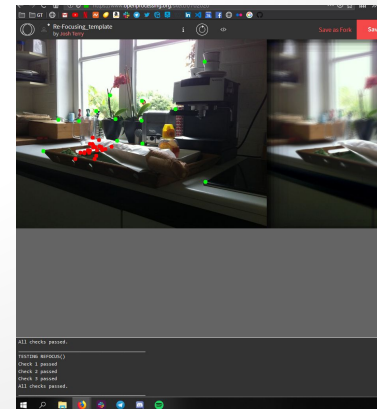
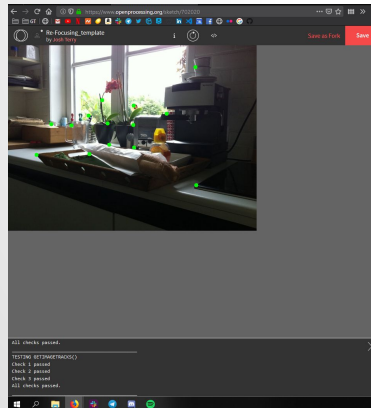
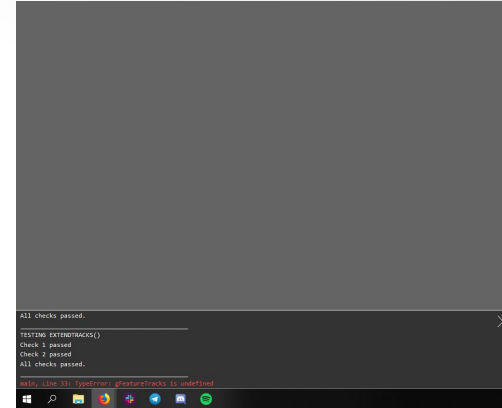
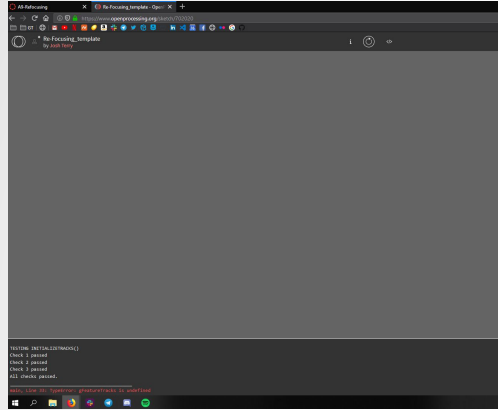
Assignment #9: Refocusing

Full Name: Josh Terry

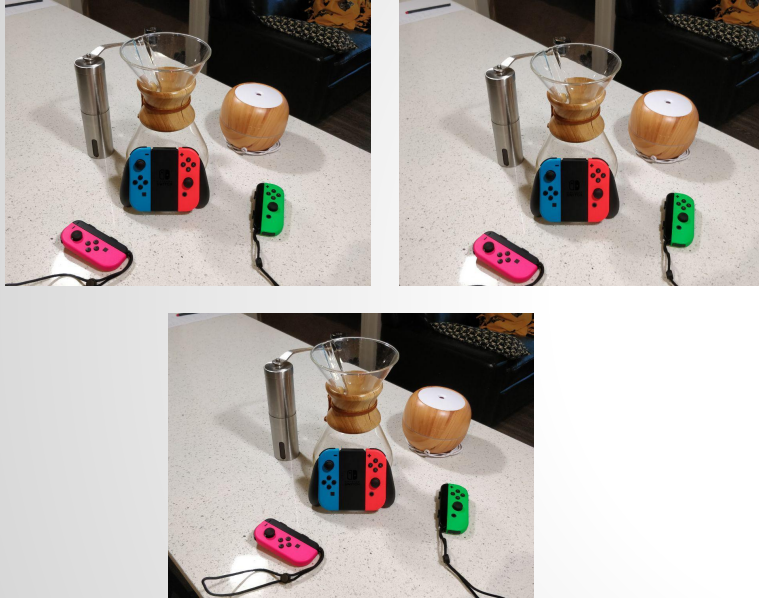
GTID: 903067329

Spring 2019

Autograder Screenshots



Project Input



Description:

- The source images depict a countertop with several coffee-making implements and video game controllers, as well as a couch with a patterned pillow and doorway in the background.
- Without rotating the camera or changing my z-distance from the scene, I kept fairly still and “panned” the camera in the x and y directions somewhat randomly while capturing photos.

Project Discussion

Tune the parameters(maxCorner, qualityLevel, minDistane, blockSize, winSize, maxLevel, and criteria) to have better results.

Describe how you tune the parameters. And explain which parameter/parameters improve the result and why?

- I found that all variables had some “goldilocks” value - too low or high of a value resulted in a low-quality final image.
- A maxCorner value too low prevented the image from detecting many of the images' features.
- The quality level made a massive impact on resulting images: Too high of a value prevented the less-predominant matches being made in the cat pillow, and too low of a value caused far too many possible focus points to appear for a human to scrub through them all. However, a lower qualityLevel enabled previously unfound matches to appear as visible!



Image 1

Focus Object: Cat pillow on couch



Image 2

Focus Object: Pink controller



Image 3

Focus Object: Oil diffuser (wooden object with white top)

Project Retrospective

- In what ways was your project successful?
 - I was able to successfully emulate the goal of the project: refocusing of multiple images onto one area.
 - The photographs that I captured worked fairly well for this project, likely due to varied colors, patterns, and edges.
- If you were to repeat the project, is there anything you do differently knowing what you do now?
 - I would have captured images with more depth variance than that between a countertop and a couch.
 - I would have captured images of more interesting subject matter

Other Details

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Resources

- ***<https://github.gatech.edu/CS-x475/assignments/tree/master/A9-Refocusing>***