YONSEI UNIVERSITY
Department of Computer Science

CSI 4116 Computer Vision, SPRING 2018

Lab 07: Harris Transform

DUE: 2018.05.27 23:59:59pm

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Write a python code that:

- Read an input image (any)
- Find Harris corners
- Save the result

Write a report with procedure

Submit:

- Code
- Report
- Input image
- Intermediate images
- Result image

1 General info

This is a less naive approach to feature extractions than simply line detection as corners are much more unique to images and uses less data overall.

2 Algorithm

We rely on that at corners, image intensity will vary in various directions. We calculate the derivative of the image in the X and Y directions as well as the product of the X and the Y direction for this algorithm. We apply a guassian filter on the each individual derivative, that being the square of the X derivative, the square of the Y derivative, and the product of the X and Y derivatives. We then do a dilation (a voting mechanism) on nearby pixels to find the strongest candidate for the representative corner. We then get the top local results by threshing the image's response. After this, the resulting image is an image of just corner coordinates.

3 Post

What you do with the results of the algorithm is up to the programmer but ultimately in the project we simply overlayed the image with where the perceived corners are at with dark black circles.