Robotic Vision Homework 6

1. (**Corner detector**, adapted from textbook problem 13.6) Use the ‘building2-1.png’ provided by the toolbox, test the performance of the Harris, Noble and Shi-Tomasi corner detectors. For each detectors, only return 200 strongest corners, zoom in to the same location and compare the difference of those three detectors.

**Clarification**: when you type “help icorner” into the MATLAB, you will see in the “Options” part the ‘detector’ can be set as 'harris' (default), 'noble' or 'klt'. However, in the actual implementation of the toolbox, ‘klt’ (Kanade–Lucas–Tomasi) is not included, the author implemented ‘st’ (Shi-Tomasi) instead.

A picture containing outdoor, tree, sky, street

Description automatically generated

For Python user Noble Corner detector is optional, you can see the Shi-Tomasi Corner Detection Method:

<https://www.geeksforgeeks.org/python-corner-detection-with-shi-tomasi-corner-detection-method-using-opencv/>

The Harris Corner Detection method:

<https://www.geeksforgeeks.org/python-corner-detection-with-harris-corner-detection-method-using-opencv/>

2. (**Hough transform**, adapted from textbook problem 13.5) Write code that capture one image from your computer’s camera (refer to section 12.1.2), finding the two dominant lines and overlaying them on the image.

Python code can be found:

<https://www.geeksforgeeks.org/line-detection-python-opencv-houghline-method/>