

Project 1 Writeup

Instructions

- Provide an overview about how your project functions.
- Describe any interesting decisions you made to write your algorithm.
- Show and discuss the results of your algorithm.
- Feel free to include code snippets, images, and equations.
- List any extra credit implementation and result (optional).
- Use as many pages as you need, but err on the short side.
- **Please make this document anonymous.**

Project Overview

This project is designed to detect interests points of two images and match two images's interests point using harris corner detector and SIFT detector.

Implementation Detail

I noticed that the standard 16 * 16 SIFT descriptor is fast in computing, but is not accurate enough when matching two images. so I decided increase the size of the descriptor so it captures wider area well, sacrificing the runtime. As I used four for loops to generate the descriptor, the runtimes increases by a small change in the feature width. So I limited it to be around 60. I also multiplied harris cornerness by a large number so I could use *peak_local_max* function with minimum distance in its argument. In order for the program to be able to deal with all of the three data, I also tried not to overture the hyperparameters.

Result

All the results are listed below.



