

Project 3

Feature matching
12 points total

Program 1

Find and indicate the 4 strongest corners in image `photo_1.jpg` using Haris Corner Detection.
Find and indicate key points on the same image using the SIFT method.

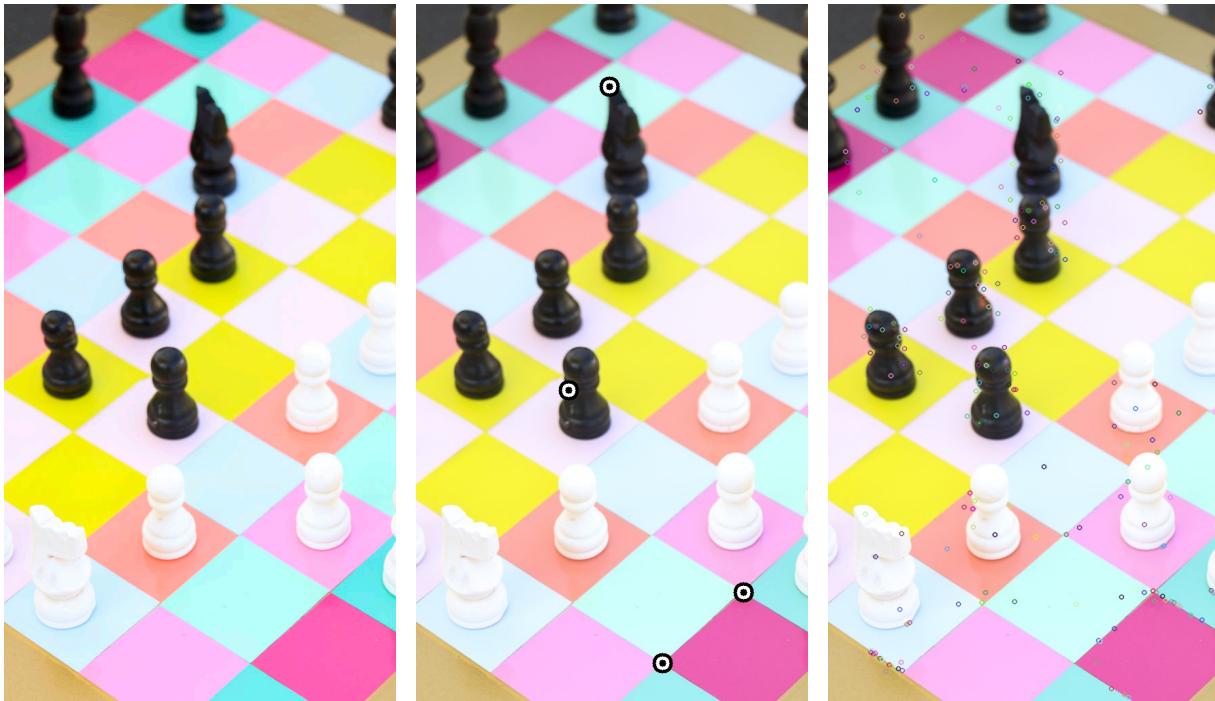


Figure 1: Example output of Program 1.
Left to right: original image, Haris corner detection, SIFT method

Grading

2 points each for the following:

- Haris corner detection.
- SIFT.

4 points total.

Program 2

Perform feature matching using images `photo_2_query.jpg` and `photo_2_train.jpg`.
Draw the "good" image matches and the outline of the `query` image in the `train` image.

Grading

Correct execution of the task.

4 points total.

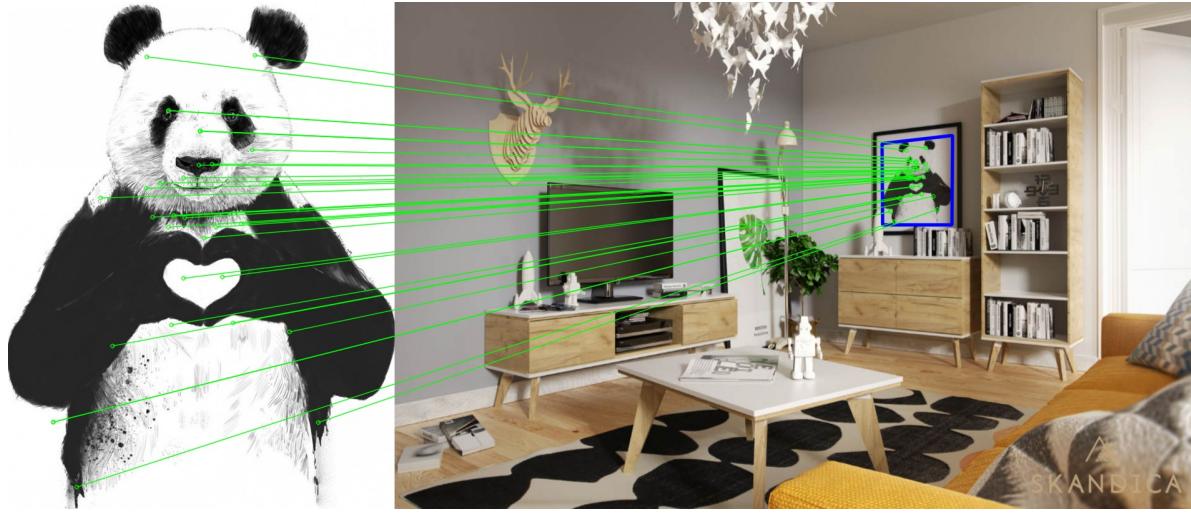


Figure 2: Example output of Program 2

Program 3

Modify your implementation of Program 2 to work on files `video_3_train.mp4` and `photo_3_query.jpg`. Draw the "good" matches and the outline of the query image for every frame.

The video should play smoothly in the same window.

Handle the edge cases with not enough matches, showing the last good position.

Handle edge cases concerning noisy matches to prevent the outline from chaotically changing position.

Grading

- 2 points - Modification of Program 2 to work with the video
- 1 point - Handling of edge cases with not enough good matches.
- 1 point - Handling of edge cases with too much noise.

4 points total.