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Week Lab8 Report

Note: I have submitted 3 different python codes for different parameters setting for the square blocks for each experiment that is for the opencv images, dataset by professor, an self dataset for calibration experiment.

Experiment with the Opencv images and camera calibration:

Results:

camera matrix : [[534.07088364 0. 341.53407554]

[0. 534.11914595 232.94565259]

[0. 0. 1.]]

distortion matrix : [[-2.92971637e-01 1.07706962e-01 1.31038376e-03 -3.11018781e-05
4.34798110e-02]]

total error: 0.023686000375385676

Corrected Image after camera calibration (one can see that all the checker board lines are straight lines)



Experiment with the images provided in the assignment

Results:

camera matrix : [[566.35562564 0. 235.55988413]
[0. 567.40478462 328.2056629]
[0. 0. 1.]]

distortion matrix : [[-0.05504045 0.94023513 0.00740956 -0.00607658 -2.41625101]]

total reprojection error : 0.09155622968704741

Corrected Image after camera calibration (one can see that all the checker board lines are straight lines)



Bonus part : Self images dataset

Results:

camera matrix :

```
[[2.04272943e+03 0.00000000e+00 7.64360022e+02]
 [0.00000000e+00 2.03501640e+03 1.35902591e+03]
 [0.00000000e+00 0.00000000e+00 1.00000000e+00]]
```

distortion matrix : [[2.90493410e-01 -2.42737867e+00 2.70529994e-03 9.61801265e-04
6.52472281e+00]]

total error: 0.08758634186387827

Corrected Image after camera calibration (one can see that all the checker board lines are straight lines)

