

CS7.505 - Assignment 1

Camera Calibration

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1 Direct Linear Transform

References

- Direct Linear Transform - 5 Minutes with Cyrill at https://youtu.be/Fdwa0UEJ_F8
- Direct Linear Transform for Camera Calibration and Localization (Cyrill Stachniss) at <https://youtu.be/3NcQbZu6xt8>

2 RANSAC based Camera Calibration

References

- RANSAC - 5 Minutes with Cyrill at https://youtu.be/9D5rrtCC_E0
- RANSAC - Random Sample Consensus (Cyrill Stachniss) at <https://youtu.be/Cu1f6vpEilg>

3 Practical Experiment for DLT & RANSAC

References

- *Harris Corners* tutorial on OpenCV docs and paper [HS+88]

4 Correcting Radial Distortion

References

- OpenCV tutorial to calibrate camera and undistort images, undistort function

5 Object Wireframe

References

- What is a Wireframe on Wikiwand

6 Calibration through Zhang's Method

References

- OpenCV tutorial on camera calibration, `calibrateCamera` function
- Paper on Zhang's method at [Zha00]

7 Wireframe using Zhang's Method

8 Image of World Origin

9 Calibrate a Personal Camera

References

- [HS+88] Chris Harris, Mike Stephens, et al. “A combined corner and edge detector”. In: *Alvey vision conference*. Vol. 15. 50. Citeseer. 1988, pp. 10–5244.
- [Zha00] Zhengyou Zhang. “A flexible new technique for camera calibration”. In: *IEEE Transactions on pattern analysis and machine intelligence* 22.11 (2000), pp. 1330–1334.