

3-Dimensional Reconstruction of a Room based on Stereo Images

Computer Vision 2023 | Group 15 |
Authors: Alex Adami, Alex Straub,
Jinxin Ai, Kilian Griebel, Manuel
Krummschmidt, Simon Martin

Task Allocation

1 - 4:	AS, JA, KG	GUI:	AS, JA
5 - 7:	AA, MK, SM	Poster:	AA, AS, JA, KG, MK, SM

Discussion & Outlook

- Limited to rectangular rooms and objects
- Efficiency and run time of code is not optimal
- Optimize order of algorithms (e.g. Cluster before Plane Fitting)
- Task Allocation in before/after Point Cloud is possible due to given Ground Truth Point Cloud
- Generation of Point Cloud is the most crucial and challenging part
- Improve ability to generalize the Point Cloud creation for varying data sets

Sources

- [1] Singhal, Prateek, et al. "Top down approach to detect multiple planes from pair of images." Proceedings of the 2014 Indian Conference on Computer Vision Graphics and Image Processing. 2014.
- [2] Triggs, Bill, et al. "Bundle adjustment—a modern synthesis." Vision Algorithms: Theory and Practice: International Workshop on Vision Algorithms Corfu, Greece, September 21–22, 1999 Proceedings. Springer Berlin Heidelberg, 2000.
- [3] Torr, P. H. S., and A. Zisserman. "MLESAC: A New Robust Estimator with Application to Estimating Image Geometry." Computer Vision and Image Understanding. 2000.

