

Journal Articles

- [J1] Haefner, B., Peng, S., Verma, A., Queau, Y., Cremers and D.,
Photometric Depth Super-Resolution,
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2019.

Conference and Workshop Papers

- [C1] E. Bylow, R. Maier, F. Kahl and C. Olsson,
Combining Depth Fusion and Photometric Stereo for Fine-Detailed 3D Models,
Scandinavian Conference on Image Analysis (SCIA), Norrköping, Sweden, June 2019,
Oral Presentation, received the SCIA 2019 Honourable Mention award.
- [C2] Haefner, B., Queau, Y., Möllenhoff, T., Cremers and D.,
Fight ill-posedness with ill-posedness: Single-shot variational depth super-resolution from shading,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018, **Spotlight Presentation.**
- [C3] M. Jaimez, T. J. Cashman, A. Fitzgibbon, J. Gonzalez-Jimenez and D. Cremers,
An Efficient Background Term for 3D Reconstruction and Tracking with Smooth Subdivision Surface Models,
2017.
- [C4] M. Dzitsiuk, J. Sturm, R. Maier, L. Ma and D. Cremers,
De-noising, Stabilizing and Completing 3D Reconstructions On-the-go using Plane Priors,
International Conference on Robotics and Automation (ICRA), May 2017.
- [C5] R. Maier, R. Schaller and D. Cremers,
Efficient Online Surface Correction for Real-time Large-Scale 3D Reconstruction,
British Machine Vision Conference (BMVC), London, United Kingdom, September 2017.
- [C6] R. Maier, K. Kim, D. Cremers, J. Kautz and M. Niessner,
Intrinsic3D: High-Quality 3D Reconstruction by Joint Appearance and Geometry Optimization with Spatially-Varying Lighting,
International Conference on Computer Vision (ICCV), Venice, Italy, October 2017.
- [C7] Peng, S., Haefner, B., Queau, Y., Cremers and D.,
Depth Super-Resolution Meets Uncalibrated Photometric Stereo,
International Conference on Computer Vision Workshops (ICCVW), 2017, **Oral Presentation at ICCV Workshop on Color and Photometry in Computer Vision.**
- [C8] M. Jaimez, M. Souiai, J. Gonzalez-Jimenez and D. Cremers,
A Primal-Dual Framework for Real-Time Dense RGB-D Scene Flow,
Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA), 2015.
- [C9] R. Maier, J. Stueckler and D. Cremers,
Super-Resolution Keyframe Fusion for 3D Modeling with High-Quality Textures,
International Conference on 3D Vision (3DV), 2015.

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- [C10] C. Kerl, J. Stueckler and D. Cremers,
Dense Continuous-Time Tracking and Mapping with Rolling Shutter RGB-D Cameras,
Santiago, Chile, 2015.
- [C11] J. Stühmer, S. Nowozin, A. Fitzgibbon, R. Szeliski, T. Perry, S. Acharya, D. Cremers and J. Shotton,
Model-Based Tracking at 300Hz using Raw Time-of-Flight Observations,
Santiago, Chile, 2015.
- [C12] F. Steinbruecker, J. Sturm and D. Cremers,
Volumetric 3D Mapping in Real-Time on a CPU,
Hongkong, China, 2014.
- [C13] J. Engel, T. Schöps and D. Cremers,
LSD-SLAM: Large-Scale Direct Monocular SLAM,
September 2014, **Oral Presentation.**
- [C14] T. Schöps, J. Engel and D. Cremers,
Semi-Dense Visual Odometry for AR on a Smartphone,
September 2014, **Best Short Paper Award.**
- [C15] R. Maier, J. Sturm and D. Cremers,
Submap-based Bundle Adjustment for 3D Reconstruction from RGB-D Data,
German Conference on Pattern Recognition (GCPR), Münster, Germany, September 2014,
Oral Presentation.
- [C16] C. Kerl, M. Souiai, J. Sturm and D. Cremers,
Towards Illumination-invariant 3D Reconstruction using ToF RGB-D Cameras,
International Conference on 3D Vision (3DV), 2014.
- [C17] C. Kerl, J. Sturm and D. Cremers,
Robust Odometry Estimation for RGB-D Cameras,
May 2013, **Best Vision Paper Award - Finalist.**
- [C18] E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers,
Real-Time Camera Tracking and 3D Reconstruction Using Signed Distance Functions,
Robotics: Science and Systems Conference (RSS), June 2013.
- [C19] E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers,
Direct Camera Pose Tracking and Mapping With Signed Distance Functions,
Demo Track of the RGB-D Workshop on Advanced Reasoning with Depth Cameras at the Robotics: Science and Systems Conference (RSS), June 2013.
- [C20] C. Kerl, J. Sturm and D. Cremers,
Dense Visual SLAM for RGB-D Cameras,
Proc. of the Int. Conf. on Intelligent Robot Systems (IROS), 2013.
- [C21] T. Naseer, J. Sturm and D. Cremers,
FollowMe: Person Following and Gesture Recognition with a Quadcopter,
Proc. of the Int. Conf. on Intelligent Robot Systems (IROS), 2013.

- [C22] M. Klodt, J. Sturm and D. Cremers,
Scale-Aware Object Tracking with Convex Shape Constraints on RGB-D Images,
German Conference on Pattern Recognition (GCPR), Saarbrücken, Germany, September 2013.
- [C23] J. Sturm, E. Bylow, F. Kahl and D. Cremers,
Dense Tracking and Mapping with a Quadrocopter,
Unmanned Aerial Vehicle in Geomatics (UAV-g), Rostock, Germany, September 2013.
- [C24] J. Sturm, E. Bylow, F. Kahl and D. Cremers,
CopyMe3D: Scanning and Printing Persons in 3D,
German Conference on Pattern Recognition (GCPR), Saarbrücken, Germany, September 2013.
- [C25] J. Engel, J. Sturm and D. Cremers,
Semi-Dense Visual Odometry for a Monocular Camera,
Sydney, Australia, December 2013.
- [C26] F. Steinbruecker, C. Kerl, J. Sturm and D. Cremers,
Large-Scale Multi-Resolution Surface Reconstruction from RGB-D Sequences,
Sydney, Australia, 2013.
- [C27] F. Endres, J. Hess, N. Engelhard, J. Sturm, D. Cremers and W. Burgard,
An Evaluation of the RGB-D SLAM System,
St. Paul, MA, USA, May 2012.
- [C28] L. Zhang, J. Sturm, D. Cremers and D. Lee,
Real-Time Human Motion Tracking using Multiple Depth Cameras,
Proc. of the International Conference on Intelligent Robot Systems (IROS), Oct. 2012.
- [C29] J. Sturm, N. Engelhard, F. Endres, W. Burgard and D. Cremers,
A Benchmark for the Evaluation of RGB-D SLAM Systems,
Proc. of the International Conference on Intelligent Robot Systems (IROS), Oct. 2012.
- [C30] J. Sturm, W. Burgard and D. Cremers,
Evaluating Egomotion and Structure-from-Motion Approaches Using the TUM RGB-D Benchmark,
Proc. of the Workshop on Color-Depth Camera Fusion in Robotics at the IEEE/RJS International Conference on Intelligent Robot Systems (IROS), Oct. 2012.
- [C31] N. Engelhard, F. Endres, J. Hess, J. Sturm and W. Burgard,
Real-time 3D visual SLAM with a hand-held camera,
Proc. of the RGB-D Workshop on 3D Perception in Robotics at the European Robotics Forum, Vasteras, Sweden, April 2011.
- [C32] J. Sturm, S. Magnenat, N. Engelhard, F. Pomerleau, F. Colas, W. Burgard, D. Cremers and R. Siegwart,
Towards a benchmark for RGB-D SLAM evaluation,
Proc. of the RGB-D Workshop on Advanced Reasoning with Depth Cameras at Robotics: Science and Systems Conf. (RSS), Los Angeles, USA, June 2011.

- [C33] F. Steinbruecker, J. Sturm and D. Cremers,
Real-Time Visual Odometry from Dense RGB-D Images,
Workshop on Live Dense Reconstruction with Moving Cameras at the Intl. Conf. on Computer Vision (ICCV), 2011.
- [C34] J. Stühmer, S. Gumhold and D. Cremers,
Real-Time Dense Geometry from a Handheld Camera,
Darmstadt, Germany, 11-20, September 2010.
- [C35] J. Stühmer, S. Gumhold and D. Cremers,
Parallel Generalized Thresholding Scheme for Live Dense Geometry from a Handheld Camera,
ECCV Workshop on Computer Vision on GPUs (CVGPU), Heraklion, Greece, September 2010.

MastersThesis

- [M1] R. Maier,
Out-of-Core Bundle Adjustment for 3D Workpiece Reconstruction,
Technische Universität München, Germany, September 2013.
- [M2] C. Kerl,
Odometry from RGB-D Cameras for Autonomous Quadrocopters,
Technical University Munich, Germany, Nov. 2012.