Journal Articles

[J1] B. Haefner, S. Peng, A. Verma, Y. Queau and D. Cremers,
Photometric Depth Super-Resolution,

A Non-invasive 3D Body Scanner and Software Tool towards Analysis of Scoliosis,

[J3] M. Jaimez and J. Gonzalez-Jimenez,
Fast Visual Odometry for 3-D Range Sensors,

Conference and Workshop Papers

[C1] L. Sang, B. Haefner and D. Cremers,
Inferring Super-Resolution Depth from a Moving Light-Source Enhanced RGB-D Sensor: A Variational Approach,
*IEEE Winter Conference on Applications of Computer Vision (WACV)*, Colorado, USA, March 2020, Spotlight Presentation.

[C2] 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.

[C3] B. Haefner, Y. Queau, T. Möllenhoff and D. Cremers,
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.

[C4] M. Jaimez, C. Kerl, J. Gonzalez-Jimenez and D. Cremers,
Fast Odometry and Scene Flow from RGB-D Cameras based on Geometric Clustering,
*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 2017.

[C5] 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,

[C6] M. Dzitsiuk, J. Sturm, R. Maier, L. Ma and D. Cremers,
De-noising, Stabilizing and Completing 3D Reconstructions On-the-go using Plane Priors,
Keywords: Rgb-d

List of Publications

[C7] 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.

[C8] V. Golyanik, K. Kim, R. Maier, M. Niessner, D. Stricker and J. Kautz,
Multiframe Scene Flow with Piecewise Rigid Motion,
International Conference on 3D Vision (3DV), Qingdao, China, October 2017, Spotlight Presentation.

[C9] 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.

[C10] S. Peng, B. Haefner, Y. Queau and D. Cremers,
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.

[C11] L. Ma, C. Kerl, J. Stueckler and D. Cremers,
CPA-SLAM: Consistent Plane-Model Alignment for Direct RGB-D SLAM,
International Conference on Robotics and Automation (ICRA), May 2016.

[C12] 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.

[C13] R. Maier, J. Stueckler and D. Cremers,
Super-Resolution Keyframe Fusion for 3D Modeling with High-Quality Textures,
International Conference on 3D Vision (3DV), October 2015.

[C14] M. Jaimez, M. Souiai, J. Stueckler, J. Gonzalez-Jimenez and D. Cremers,
Motion Cooperation: Smooth Piece-Wise Rigid Scene Flow from RGB-D Images,

[C15] C. Kerl, J. Stueckler and D. Cremers,
Dense Continuous-Time Tracking and Mapping with Rolling Shutter RGB-D Cameras,
IEEE International Conference on Computer Vision (ICCV), Santiago, Chile, 2015.

Model-Based Tracking at 300Hz using Raw Time-of-Flight Observations,
IEEE International Conference on Computer Vision (ICCV), Santiago, Chile, 2015.

[C17] F. Steinbruecker, J. Sturm and D. Cremers,
Volumetric 3D Mapping in Real-Time on a CPU,
International Conference on Robotics and Automation (ICRA), Hongkong, China, 2014.

[C18] J. Engel, T. Schöps and D. Cremers,
LSD-SLAM: Large-Scale Direct Monocular SLAM,
European Conference on Computer Vision (ECCV), September 2014, Oral Presentation.
Keywords: Rgb-d

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[C19] T. Schöps, J. Engel and D. Cremers,
Semi-Dense Visual Odometry for AR on a Smartphone,
International Symposium on Mixed and Augmented Reality, September 2014, Best Short Paper Award.

[C20] 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.

[C21] 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.

[C22] C. Kerl, J. Sturm and D. Cremers,
Robust Odometry Estimation for RGB-D Cameras,
International Conference on Robotics and Automation (ICRA), May 2013, Best Vision Paper Award - Finalist.

[C23] E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers,
Real-Time Camera Tracking and 3D Reconstruction Using Signed Distance Functions,

[C24] 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.

[C25] C. Kerl, J. Sturm and D. Cremers,
Dense Visual SLAM for RGB-D Cameras,

[C26] T. Naseer, J. Sturm and D. Cremers,
FollowMe: Person Following and Gesture Recognition with a Quadrocopter,

[C27] 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.

[C28] 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.

[C29] 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.
Keywords: Rgb-d  

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[C30] J. Engel, J. Sturm and D. Cremers,  
**Semi-Dense Visual Odometry for a Monocular Camera,**  
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

[C31] F. Steinbruecker, C. Kerl, J. Sturm and D. Cremers,  
**Large-Scale Multi-Resolution Surface Reconstruction from RGB-D Sequences,**  
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, 2013.

[C32] F. Endres, J. Hess, N. Engelhard, J. Sturm, D. Cremers and W. Burgard,  
**An Evaluation of the RGB-D SLAM System,**  

[C33] L. Zhang, J. Sturm, D. Cremers and D. Lee,  
**Real-Time Human Motion Tracking using Multiple Depth Cameras,**  

[C34] J. Sturm, N. Engelhard, F. Endres, W. Burgard and D. Cremers,  
**A Benchmark for the Evaluation of RGB-D SLAM Systems,**  

[C35] J. Sturm, W. Burgard and D. Cremers,  
**Evaluating Egomotion and Structure-from-Motion Approaches Using the TUM RGB-D Benchmark,**  

[C36] N. Engelhard, F. Endres, J. Hess, J. Sturm and W. Burgard,  
**Real-time 3D visual SLAM with a hand-held camera,**  

[C37] J. Stührer, S. Magnenat, N. Engelhard, F. Pomerleau, F. Colas, W. Burgard, D. Cremers and R. Siegwart,  
**Towards a benchmark for RGB-D SLAM evaluation,**  

[C38] 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.

[C39] J. Stührer, S. Gumhold and D. Cremers,  
**Real-Time Dense Geometry from a Handheld Camera,**  
*Pattern Recognition (Proc. DAGM)*, Darmstadt, Germany, 11-20, September 2010.

[C40] J. Stührer, 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.