

## Journal Articles

- [J1] V. Usenko, N. Demmel, D. Schubert, J. Stueckler and D. Cremers,  
**Visual-Inertial Mapping with Non-Linear Factor Recovery,**  
*IEEE Robotics and Automation Letters (RA-L)* 38; *Int. Conference on Intelligent Robotics and Automation (ICRA)*, 5(2): 422-429, 2020.
- [J2] H. Matsuki, L. von Stumberg, V. Usenko, J. Stueckler and D. Cremers,  
**Omnidirectional DSO: Direct Sparse Odometry with Fisheye Cameras,**  
*IEEE Robotics and Automation Letters* 38; *Int. Conference on Intelligent Robots and Systems (IROS)*, 2018.
- [J3] L. Ma, J. Stueckler, T. Wu and D. Cremers,  
**Detailed Dense Inference with Convolutional Neural Networks via Discrete Wavelet Transform,**  
Aug 2018.
- [J4] J. Stueckler and S. Behnke,  
**Efficient Dense Rigid-Body Motion Segmentation and Estimation in RGB-D Video,**  
*International Journal of Computer Vision*, jan 2015.
- [J5] J. Stueckler, M. Schwarz, M. Schadler, A. Topalidou-Kyniazopoulou and S. Behnke,  
**NimbRo Explorer: Semi-Autonomous Exploration and Mobile Manipulation in Rough Terrain,**  
*Journal of Field Robotics*, 2015.
- [J6] D. Droschel, M. Nieuwenhuisen, M. Beul, J. Stueckler, D. Holz and S. Behnke,  
**Multi-Layered Mapping and Navigation for Autonomous Micro Aerial Vehicles,**  
*Journal of Field Robotics*, 2015.
- [J7] M. Schadler, J. Stueckler and S. Behnke,  
**Rough Terrain Mapping and Navigation using a Continuously Rotating 2D Laser Scanner,**  
*Künstliche Intelligenz*, 28(2): 93-99, jun 2014.
- [J8] J. Stueckler, B. Waldvogel, H. Schulz and S. Behnke,  
**Dense Real-Time Mapping of Object-Class Semantics from RGB-D Video,**  
*Journal of Real-Time Image Processing*, 2014.
- [J9] J. Stueckler and S. Behnke,  
**Multi-Resolution Surfel Maps for Efficient Dense 3D Modeling and Tracking,**  
*Journal of Visual Communication and Image Representation*, 25: 137-147, jan 2014.
- [J10] J. Stueckler, R. Steffens, D. Holz and S. Behnke,  
**Efficient 3D Object Perception and Grasp Planning for Mobile Manipulation in Domestic Environments,**  
*Robotics and Autonomous Systems*, 61: 1106-1115, oct 2012.

- [J11] J. Stueckler, R. Steffens, D. Holz and S. Behnke,  
**RoboCup@Home: Demonstrating Everyday Manipulation Skills in RoboCup@Home,**  
*IEEE Robotics and Automation Magazine*, 19(2): 34-42, June 2012.
- [J12] S. Behnke and J. Stueckler,  
**Hierarchical Reactive Control for Humanoid Soccer Robots,**  
*International Journal of Humanoid Robots*, 5(3): 375-396, 2008.

## Conference and Workshop Papers

- [C1] R. Wang, N. Yang, J. Stueckler and D. Cremers,  
**DirectShape: Photometric Alignment of Shape Priors for Visual Vehicle Pose and Shape Estimation,**  
*Proc. of the IEEE International Conference on Robotics and Automation (ICRA)*, 2020.
- [C2] D. Schubert, T. Goll, N. Demmel, V. Usenko, J. Stueckler and D. Cremers,  
**The TUM VI Benchmark for Evaluating Visual-Inertial Odometry,**  
*International Conference on Intelligent Robots and Systems (IROS)*, October 2018.
- [C3] N. Yang, R. Wang, J. Stueckler and D. Cremers,  
**Deep Virtual Stereo Odometry: Leveraging Deep Depth Prediction for Monocular Direct Sparse Odometry,**  
*European Conference on Computer Vision (ECCV)*, September 2018, **Oral Presentation.**
- [C4] D. Schubert, N. Demmel, V. Usenko, J. Stueckler and D. Cremers,  
**Direct Sparse Odometry With Rolling Shutter,**  
*European Conference on Computer Vision (ECCV)*, September 2018, **Oral Presentation.**
- [C5] L. Ma, J. Stueckler, C. Kerl and D. Cremers,  
**Multi-View Deep Learning for Consistent Semantic Mapping with RGB-D Cameras,**  
*International Conference on Intelligent Robots and Systems (IROS)*, Vancouver, Canada, Sep 2017.
- [C6] L. von Stumberg, V. Usenko, J. Engel, J. Stueckler and D. Cremers,  
**From Monocular SLAM to Autonomous Drone Exploration,**  
*European Conference on Mobile Robots (ECMR)*, September 2017.
- [C7] Y. Kuznetsov, J. Stueckler and B. Leibe,  
**Semi-Supervised Deep Learning for Monocular Depth Map Prediction,**  
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2017.
- [C8] A. Kasyanov, F. Engelmann, J. Stueckler and B. Leibe,  
**Keyframe-Based Visual-Inertial Online SLAM with Relocalization,**  
*IEEE/RSJ Int. Conference on Intelligent Robots and Systems, IROS*, 2017.
- [C9] F. Engelmann, J. Stueckler and B. Leibe,  
**SAMP: Shape and Motion Priors for 4D Vehicle Reconstruction,**  
*IEEE Winter Conference on Applications of Computer Vision, WACV*, 2017.

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- [C10] V. Usenko, J. Engel, J. Stueckler and D. Cremers,  
**Direct Visual-Inertial Odometry with Stereo Cameras,**  
*International Conference on Robotics and Automation (ICRA)*, May 2016.
- [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] D. Klostermann, A. Osep, J. Stueckler and B. Leibe,  
**Unsupervised Learning of Shape-Motion Patterns for Objects in Urban Street Scenes,**  
*British Machine Vision Conference (BMVC)*, 2016.
- [C13] D. Kochanov, A. Osep, J. Stueckler and B. Leibe,  
**Scene Flow Propagation for Semantic Mapping and Object Discovery in Dynamic Street Scenes,**  
*IEEE/RSJ Int. Conference on Intelligent Robots and Systems, IROS*, 2016.
- [C14] F. Engelmann, J. Stueckler and B. Leibe,  
**Joint Object Pose Estimation and Shape Reconstruction in Urban Street Scenes Using 3D Shape Priors,**  
*Proc. of the German Conference on Pattern Recognition (GCPR)*, 2016.
- [C15] D. Holz, A. Topalidou-Kyniazopoulou, J. Stueckler and S. Behnke,  
**Real-Time Object Detection, Localization and Verification for Fast Robotic Depalletizing,**  
*International Conference on Intelligent Robots and Systems (IROS)*, 2015.
- [C16] J. Engel, J. Stueckler and D. Cremers,  
**Large-Scale Direct SLAM with Stereo Cameras,**  
*International Conference on Intelligent Robots and Systems (IROS)*, sept 2015.
- [C17] 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.
- [C18] V. Usenko, J. Engel, J. Stueckler and D. Cremers,  
**Reconstructing Street-Scenes in Real-Time From a Driving Car,**  
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- [C19] M. Jaimez, M. Souiai, J. Stueckler, J. Gonzalez-Jimenez and D. Cremers,  
**Motion Cooperation: Smooth Piece-Wise Rigid Scene Flow from RGB-D Images,**  
*Proc. of the Int. Conference on 3D Vision (3DV)*, oct 2015.
- [C20] 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.
- [C21] J. Stueckler and S. Behnke,  
**Adaptive Tool-Use Strategies for Anthropomorphic Service Robots,**  
*Proc. of the 14th IEEE-RAS International Conference on Humanoid Robots (Humanoids)*,  
to appear, nov 2014.

- [C22] D. Droeschel, J. Stueckler and S. Behnke,  
**Local Multi-Resolution Surfel Grids for MAV Motion Estimation and 3D Mapping,**  
*Proc. of the 13th International Conference on Intelligent Autonomous Systems (IAS)*, to appear, jul 2014.
- [C23] J. Stueckler, A. Gutt and S. Behnke,  
**Combining the Strengths of Sparse Interest Point and Dense Image Registration for RGB-D Odometry,**  
*Proc. of the Joint 45th International Symposium on Robotics (ISR) and 8th German Conference on Robotics (ROBOTIK)*, to appear, jun 2014.
- [C24] J. Stueckler and S. Behnke,  
**Efficient deformable registration of multi-resolution surfel maps for object manipulation skill transfer,**  
*Proc. of the IEEE International Conference on Robotics and Automation (ICRA)*, 994-1001, may 2014.
- [C25] D. Droeschel, J. Stueckler and S. Behnke,  
**Local multi-resolution representation for 6D motion estimation and mapping with a continuously rotating 3D laser scanner,**  
*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 5221-5226, may 2014.
- [C26] M. Schwarz, J. Stueckler and S. Behnke,  
**Mobile Teleoperation Interfaces with Adjustable Autonomy for Personal Service Robots,**  
*Proceedings of the 2014 ACM/IEEE International Conference on Human-robot Interaction, Advances in Computational Mathematics, HRI '14*, 288-289, 2014.
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**Multi-resolution surfel mapping and real-time pose tracking using a continuously rotating 2D laser scanner,**  
*Proc. of the IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR)*, 1-6, oct 2013.
- [C28] J. Stueckler and S. Behnke,  
**Efficient Dense 3D Rigid-Body Motion Segmentation in RGB-D Video,**  
*Proc. of the British Machine Vision Conference (BMVC)*, 2013.
- [C29] M. McElhone, J. Stueckler and S. Behnke,  
**Joint detection and pose tracking of multi-resolution surfel models in RGB-D,**  
*Proc. of the European Conference on Mobile Robots (ECMR)*, IEEE, 131-137, 2013.
- [C30] T. Fiolka, J. Stueckler, D. A. Klein, D. Schulz and S. Behnke,  
**Distinctive 3D surface entropy features for place recognition.,**  
*Proc. of the European Conference on Mobile Robots (ECMR)*, IEEE, 204-209, 2013.
- [C31] A. Berner, J Li, D. Holz, J. Stueckler, S. Behnke and R. Klein,  
**Combining contour and shape primitives for object detection and pose estimation of prefabricated parts,**  
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- [C32] J. Stueckler and S. Behnke,  
**Hierarchical Object Discovery and Dense Modelling From Motion Cues in RGB-D Video**,  
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- [C33] M. Nieuwenhuisen, D. Droeschel, D. Holz, J. Stueckler, A. Berner, J Li, R. Klein and S. Behnke,  
**Mobile bin picking with an anthropomorphic service robot**,  
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- [C34] U. Hubert, J. Stueckler and S. Behnke,  
**Bayesian calibration of the hand-eye kinematics of an anthropomorphic robot**,  
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*Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS)*, 3005-3010, oct 2012.
- [C36] J. Stueckler and S. Behnke,  
**Integrating depth and color cues for dense multi-resolution scene mapping using RGB-D cameras**,  
*Proc. of the IEEE Int. Conf. on Multisensor Fusion and Integration for Intelligent Systems (MFI)*, 162-167, sep 2012.
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**Adjustable autonomy for mobile teleoperation of personal service robots**,  
*Proc. of the IEEE Int. Symp. on Robot and Human Interactive Communication*, 933-940, sep 2012.
- [C38] T. Fiolka, J. Stueckler, D. A. Klein, D. Schulz and S. Behnke,  
**SURE: Surface Entropy for Distinctive 3D Features**,  
*Proc. of Spatial Cognition*, 2012.
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Pinz, Axel, Pock, Thomas, Bischof, Horst, Leberl and Franz(Eds.), *DAGM/OAGM Symposium*, Springer, Lecture Notes in Computer Science, Vol. 7476, 357-366, 2012.
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**Efficient Mobile Robot Navigation using 3D Surfel Grid Maps**,  
*Proc. of ROBOTIK*, VDE-Verlag, 2012.

- [C43] J. Stueckler and S. Behnke,  
**Robust Real-Time Registration of RGB-D Images using Multi-Resolution Surfel Representations,**  
*Proc. of ROBOTIK*, VDE-Verlag, 2012.
- [C44] B. Oehler, J. Stueckler, J. Welle, D. Schulz and S. Behnke,  
**Efficient Multi-resolution Plane Segmentation of 3D Point Clouds,**  
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**Following human guidance to cooperatively carry a large object,**  
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- [C46] J. Stueckler, R. Steffens, D. Holz and S. Behnke,  
**Real-Time 3D Perception and Efficient Grasp Planning for Everyday Manipulation Tasks.,**  
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Röfer, Thomas, Mayer, Norbert Michael, Savage, Jesus, Saranli and Uluc(Eds.), *RoboCup*, Springer, Lecture Notes in Computer Science, Vol. 7416, 78-89, 2011.
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*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 1205-1210, may 2011.
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*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 3568-3574, may 2011.
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**Combining depth and color cues for scale- and viewpoint-invariant object segmentation and recognition using Random Forests,**  
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tion of doors,**  
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plications,**  
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**In-lane Localization in Road Networks using Curbs Detected in Omnidirection-  
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**See, walk, and kick: Humanoid robots start to play soccer,**  
*Proc. of the IEEE-RAS Int. Conf. on Humanoid Robots (Humanoids)*, 497-503, dec 2006.

## PhDThesis

- [PhD1] J. Stueckler,  
**Efficient Dense Registration, Segmentation, and Modeling Methods for RGB-D Environment Perception,**  
Faculty of Mathematics and Natural Sciences, University of Bonn, Germany, 2014.