

**Journal Publications**

- [J1] 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.*
- [J2] L. Ma., J. Stueckler, T. Wu and D. Cremers,  
**Detailed Dense Inference with Convolutional Neural Networks via Discrete Wavelet Transform,**  
Aug 2018.
- [J3] J. Stueckler and S. Behnke,  
**Efficient Dense Rigid-Body Motion Segmentation and Estimation in RGB-D Video,**  
January 2015.
- [J4] 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.*
- [J5] 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.*
- [J6] M. Schadler, J. Stueckler and S. Behnke,  
**Rough Terrain Mapping and Navigation using a Continuously Rotating 2D Laser Scanner,**  
28(2): 93-99, June 2014.
- [J7] J. Stueckler, B. Waldvogel, H. Schulz and S. Behnke,  
**Dense Real-Time Mapping of Object-Class Semantics from RGB-D Video,**  
2014.
- [J8] J. Stueckler and S. Behnke,  
**Multi-Resolution Surfel Maps for Efficient Dense 3D Modeling and Tracking,**  
25: 137-147, January 2014.
- [J9] J. Stueckler, R. Steffens, D. Holz and S. Behnke,  
**Efficient 3D Object Perception and Grasp Planning for Mobile Manipulation in Domestic Environments,**  
61: 1106-1115, October 2012.
- [J10] J. Stueckler, R. Steffens, D. Holz and S. Behnke,  
**RoboCup@Home: Demonstrating Everyday Manipulation Skills in RoboCup@Home,**  
19(2): 34-42, June 2012.
- [J11] S. Behnke and J. Stueckler,  
**Hierarchical Reactive Control for Humanoid Soccer Robots,**  
5(3): 375-396, 2008.

**Publications at Conferences and Workshops**

- [C1] D. Schubert, T. Goll, N. Demmel, V. Usenko, J. Stueckler and D. Cremers,  
**The TUM VI Benchmark for Evaluating Visual-Inertial Odometry**,  
October 2018.
- [C2] N. Yang, R. Wang, J. Stueckler and D. Cremers,  
**Deep Virtual Stereo Odometry: Leveraging Deep Depth Prediction for Mono-  
cular Direct Sparse Odometry**,  
September 2018, **Oral Presentation**.
- [C3] D. Schubert, N. Demmel, V. Usenko, J. Stueckler and D. Cremers,  
**Direct Sparse Odometry With Rolling Shutter**,  
September 2018, **Oral Presentation**.
- [C4] L. Ma, J. Stueckler, C. Kerl and D. Cremers,  
**Multi-View Deep Learning for Consistent Semantic Mapping with RGB-D  
Cameras**,  
Vancouver, Canada, Sep 2017.
- [C5] 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.
- [C6] Kuznietsov, Y., Stueckler, J., Leibe and B.,  
**Semi-Supervised Deep Learning for Monocular Depth Map Prediction**,  
2017.
- [C7] 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.
- [C8] 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.
- [C9] V. Usenko, J. Engel, J. Stueckler and D. Cremers,  
**Direct Visual-Inertial Odometry with Stereo Cameras**,  
May 2016.
- [C10] L. Ma, C. Kerl, J. Stueckler and D. Cremers,  
**CPA-SLAM: Consistent Plane-Model Alignment for Direct RGB-D SLAM**,  
May 2016.
- [C11] 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.
- [C12] D. Kochanov, A. Osep, J. Stueckler and B. Leibe,  
**Scene Flow Propagation for Semantic Mapping and Object Discovery in Dy-  
namic Street Scenes**,  
*IEEE/RSJ Int. Conference on Intelligent Robots and Systems, IROS*, 2016.

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- [C13] 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.
- [C14] D. Holz, A. Topalidou-Kyniazopoulou, J. Stueckler and S. Behnke,  
**Real-Time Object Detection, Localization and Verification for Fast Robotic Depalletizing,**  
2015.
- [C15] J. Engel, J. Stueckler and D. Cremers,  
**Large-Scale Direct SLAM with Stereo Cameras,**  
2015.
- [C16] 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.
- [C17] V. Usenko, J. Engel, J. Stueckler and D. Cremers,  
**Reconstructing Street-Scenes in Real-Time From a Driving Car,**  
*Proc. of the Int. Conference on 3D Vision (3DV)*, October 2015.
- [C18] 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)*, October 2015.
- [C19] C. Kerl, J. Stueckler and D. Cremers,  
**Dense Continuous-Time Tracking and Mapping with Rolling Shutter RGB-D Cameras,**  
Santiago, Chile, 2015.
- [C20] 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, November 2014.
- [C21] D. Droschel, 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, July 2014.
- [C22] 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, June 2014.
- [C23] 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.

- [C24] 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.
- [C25] 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*, ACM, HRI '14, 288-289, 2014.
- [C26] M. Schadler, J. Stueckler and S. Behnke,  
**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, October 2013.
- [C27] 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.
- [C28] 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.
- [C29] 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.
- [C30] A. Berner, Jun Li, D. Holz, J. Stueckler, S. Behnke and R. Klein,  
**Combining contour and shape primitives for object detection and pose estimation of prefabricated parts,**  
*Proc. of the 20th IEEE International Conference on Image Processing (ICIP)*, 3326-3330, September 2013.
- [C31] J. Stueckler and S. Behnke,  
**Hierarchical Object Discovery and Dense Modelling From Motion Cues in RGB-D Video,**  
*Proc. of the 23rd International Joint Conference on Artificial Intelligence (IJCAI)*, IJCAI/AAAI, 2013.
- [C32] M. Nieuwenhuisen, D. Droeschel, D. Holz, J. Stueckler, A. Berner, Jun Li, R. Klein and S. Behnke,  
**Mobile bin picking with an anthropomorphic service robot,**  
*Proc. of the IEEE International Conference on Robotics and Automation (ICRA)*, 2327-2334, May 2013.
- [C33] U. Hubert, J. Stueckler and S. Behnke,  
**Bayesian calibration of the hand-eye kinematics of an anthropomorphic robot,**  
*Proc. of the 12th IEEE-RAS Int. Conf. on Humanoid Robots (Humanoids)*, 618-624, November 2012.

- [C34] J. Stueckler, N. Biresev and S. Behnke,  
**Semantic mapping using object-class segmentation of RGB-D images,**  
*Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS)*, 3005-3010,  
October 2012.
- [C35] 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, September 2012.
- [C36] S. Muszynski, J. Stueckler and S. Behnke,  
**Adjustable autonomy for mobile teleoperation of personal service robots,**  
*Proc. of the IEEE Int. Symp. on Robot and Human Interactive Communication*, 933-940,  
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- [C37] T. Fiolka, J. Stueckler, D. A. Klein, D. Schulz and S. Behnke,  
**SURE: Surface Entropy for Distinctive 3D Features,**  
*Proc. of Spatial Cognition*, 2012.
- [C38] G. M. Garcia, D. A. Klein, J. Stueckler, S. Frintrop and A. B. Cremers,  
**Adaptive Multi-cue 3D Tracking of Arbitrary Objects,**  
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- [C39] J. Stueckler and S. Behnke,  
**Model Learning and Real-Time Tracking Using Multi-Resolution Surfel Maps,**  
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- [C40] M. Nieuwenhuisen, J. Stueckler, A. Berner, R. Klein and S. Behnke,  
**Shape-Primitive Based Object Recognition and Grasping,**  
*Proc. of ROBOTIK*, VDE-Verlag, 2012.
- [C41] J. Kläs, J. Stueckler and S. Behnke,  
**Efficient Mobile Robot Navigation using 3D Surfel Grid Maps,**  
*Proc. of ROBOTIK*, VDE-Verlag, 2012.
- [C42] J. Stueckler and S. Behnke,  
**Robust Real-Time Registration of RGB-D Images using Multi-Resolution Sur-  
fel Representations,**  
*Proc. of ROBOTIK*, VDE-Verlag, 2012.
- [C43] B. Oehler, J. Stueckler, J. Welle, D. Schulz and S. Behnke,  
**Efficient Multi-resolution Plane Segmentation of 3D Point Clouds,**  
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- [C44] J. Stueckler and S. Behnke,  
**Following human guidance to cooperatively carry a large object,**  
*Proc. of the 11th IEEE-RAS Int. Conf. on Humanoid Robots (Humanoids)*, 218-223, Oc-  
tober 2011.

- [C45] J. Stueckler, R. Steffens, D. Holz and S. Behnke,  
**Real-Time 3D Perception and Efficient Grasp Planning for Everyday Manipulation Tasks.**,  
*Proc. of the European Conf. on Mobile Robots (ECMR)*, 177-182, 2011.
- [C46] J. Stueckler and S. Behnke,  
**Compliant Task-Space Control with Back-Drivable Servo Actuators**,  
Röfer, Thomas, Mayer, Norbert Michael, Savage, Jesus, Saranlı and Uluc(Eds.), *RoboCup*,  
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- [C47] D. Droeschel, J. Stueckler, D. Holz and S. Behnke,  
**Towards joint attention for a domestic service robot - person awareness and gesture recognition using Time-of-Flight cameras**,  
*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 1205-1210, May 2011.
- [C48] J. Stueckler and S. Behnke,  
**Interest point detection in depth images through scale-space surface analysis**,  
*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 3568-3574, May 2011.
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**Learning to Interpret Pointing Gestures with a Time-of-flight Camera**,  
*Proceedings of the 6th International Conference on Human-robot Interaction*, ACM, 481-488, 2011.
- [C50] K. Gräve, J. Stueckler and S. Behnke,  
**Improving imitated grasping motions through interactive expected deviation learning**,  
*Proc. of the 10th IEEE-RAS Int. Conf. on Humanoid Robots (Humanoids)*, 397-404, December 2010.
- [C51] J. Stueckler and S. Behnke,  
**Combining depth and color cues for scale- and viewpoint-invariant object segmentation and recognition using Random Forests**,  
*Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS)*, 4566-4571, October 2010.
- [C52] J. Stueckler and S. Behnke,  
**Improving People Awareness of Service Robots by Semantic Scene Knowledge**,  
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- [C54] H. Schulz, W. Liu, J. Stueckler and S. Behnke,  
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**Learning Motion Skills from Expert Demonstrations and Own Experience using Gaussian Process Regression**,  
*Proc. of the ISR/ROBOTIK*, VDE Verlag, 1-8, 2010.

- [C56] M. Nieuwenhuisen, J. Stueckler and S. Behnke,  
**Intuitive Multimodal Interaction for Domestic Service Robots**,  
*Proc. of the ISR/ROBOTIK*, VDE Verlag, 2010.
- [C57] M. Nieuwenhuisen, J. Stueckler and S. Behnke,  
**Improving indoor navigation of autonomous robots by an explicit representation of doors**,  
*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 4895-4901, May 2010.
- [C58] D. Droeschel, D. Holz, J. Stueckler and S. Behnke,  
**Using Time-of-Flight cameras with active gaze control for 3D collision avoidance**,  
*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 4035-4040, May 2010.
- [C59] J. Stueckler and S. Behnke,  
**Integrating indoor mobility, object manipulation, and intuitive interaction for domestic service tasks**,  
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**Dynamaid, an Anthropomorphic Robot for Research on Domestic Service Applications**,  
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- [C61] J. Stueckler, H. Schulz and S. Behnke,  
**In-lane Localization in Road Networks using Curbs Detected in Omnidirectional Height Images**,  
*Proceedings of Robotik 2008*, 2008.
- [C62] J. Stueckler and S. Behnke,  
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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, December 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.