Computer Vision Group Munich

List of Publications

[J1] J. Engel, J. Sturm and D. Cremers,
Scale-Aware Navigation of a Low-Cost Quadrocopter with a Monocular Camera,

[C1] F. Steinbruecker, J. Sturm and D. Cremers,
Volumetric 3D Mapping in Real-Time on a CPU,
*Int. Conf. on Robotics and Automation*, Hongkong, China, 2014.

[C2] H. Alvarez, L.M. Paz, J. Sturm and D. Cremers,
Collision Avoidance for Quadrotors with a Monocular Camera,

[C3] 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.

[C4] O. Dunkley, J. Engel, J. Sturm and D. Cremers,
Visual-Inertial Navigation for a Camera-Equipped 25g Nano-Quadrotor,

[C5] D. Bender, M. Schikora, J. Sturm and D. Cremers,
INS-Camera Calibration without Ground Control Points,

[C6] C. Kerl, M. Souiai, J. Sturm and D. Cremers,
Towards Illumination-invariant 3D Reconstruction using ToF RGB-D Cameras,

[J2] Liu, Z., Beetz, M., Cremers, D., Gall, J., Li, W., Pangeric, D., Sturm, J., Tai and Y.-W.,
Introduction to the special issue on visual understanding and applications with RGB-D cameras,

[B1] J. Sturm,
Approaches to Probabilistic Model Learning for Mobile Manipulation Robots,
Springer 2013.
[C1] C. Kerl, J. Sturm and D. Cremers, 
Robust Odometry Estimation for RGB-D Cameras, 
*Int. Conf. on Robotics and Automation*, May 2013, Best Vision Paper Award - Finalist.

[C2] E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers, 
Real-Time Camera Tracking and 3D Reconstruction Using Signed Distance Functions, 

[C3] 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.

[C4] J. Sturm and W. Burgard, 
Learning Probabilistic Models for Mobile Manipulation Robots, 
Proc. of the International Joint Conference on Artificial Intelligence (IJCAI), Track on Best papers in Sister Conferences, 2013.

[C5] C. Kerl, J. Sturm and D. Cremers, 
Dense Visual SLAM for RGB-D Cameras, 

[C6] T. Naseer, J. Sturm and D. Cremers, 
FollowMe: Person Following and Gesture Recognition with a Quadrocopter, 

[C7] 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.

[C8] 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, 
Best research paper award.

[C9] D. Bender, M. Schikora, J. Sturm and D. Cremers, 
Graph-based bundle adjustment for INS-camera calibration, 
*Unmanned Aerial Vehicle in Geomatics (UAV-g)*, Rostock, Germany, September 2013.

[C10] 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.

[C11] 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.
[C12] 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.

[C13] T. Naseer, J. Sturm and D. Cremers,
Interactive Person Following and Gesture Recognition with a Flying Robot,
Proc. of the Assistance and Service Robotics Workshop (ASROB) at the IE-EE Int. Conf. on Intelligent Robots and Systems (IROS), Nov. 2013.

[BC1] Sturm, J., Plagemann, C., Burgard and W.,
Body Schema Learning,

[C1] F. Endres, J. Hess, N. Engelhard, J. Sturm, D. Cremers and W. Burgard,
An Evaluation of the RGB-D SLAM System,
Int. Conf. on Robotics and Automation, St. Paul, MA, USA, May 2012.

[C2] T. Ruehr, J. Sturm, D. Pangercic, M. Beetz and D. Cremers,
A Generalized Framework for Opening Doors and Drawers in Kitchen Environments,
Int. Conf. on Robotics and Automation, St. Paul, MA, USA, May 2012.

[C3] L. Zhang, J. Sturm, D. Cremers and D. Lee,
Real-Time Human Motion Tracking using Multiple Depth Cameras,

[C4] J. Engel, J. Sturm and D. Cremers,
Camera-Based Navigation of a Low-Cost Quadrocopter,

[C5] J. Sturm, N. Engelhard, F. Endres, W. Burgard and D. Cremers,
A Benchmark for the Evaluation of RGB-D SLAM Systems,

[C6] J. Engel, J. Sturm and D. Cremers,
Accurate Figure Flying with a Quadrocopter Using Onboard Visual and Inertial Sensing,

[C7] J. Sturm, W. Burgard and D. Cremers,
Evaluating Egomotion and Structure-from-Motion Approaches Using the TUM RGB-D Benchmark,
[J1] S. Chitta, J. Sturm, M. Piccoli and W. Burgard,  
Tactile Sensing for Mobile Manipulation,  
*IEEE Transactions on Robotics (T-RO)*, 2011.

[J2] J. Sturm, C. Stachniss and W. Burgard,  
A Probabilistic Framework for Learning Kinematic Models of Articulated Objects,  
*Journal on Artificial Intelligence Research (JAIR)*, 41: 477-626, August 2011.

[C1] J. Hess, J. Sturm and W. Burgard,  
Learning the State Transition Model to Efficiently Clean Surfaces with Mobile Manipulation Robots,  
*Proc. of the Workshop on Manipulation under Uncertainty at the IEEE Int. Conf. on Robotics and Automation (ICRA)*, Shanghai, China, May 2011.

[C2] N. Engelhard, F. Endres, J. Hess, J. Sturm and W. Burgard,  
Real-time 3D visual SLAM with a hand-held camera,  

Towards a benchmark for RGB-D SLAM evaluation,  

[C4] 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.

Mobile Manipulation of Kitchen Containers,  
*Proc. of the IROS’11 Workshop on Results, Challenges and Lessons Learned in Advancing Robots with a Common Platform*, San Francisco, CA, USA, 2011.

[PhD1] J. Sturm,  
Approaches to Probabilistic Model Learning for Mobile Manipulation Robots,  
University of Freiburg, Germany, May 2011, *Received the Artificial Intelligence Dissertation Award 2011 (ECCAI) and the Wolfgang-Genter-Award 2011 (University of Freiburg); Finalist at the Georges-Giralt-Award 2012 (EURON); Selected for the Best Paper Track at IJCAI 2013.*

[C1] J. Sturm, K. Konolige, C. Stachniss and W. Burgard,  
3D Pose Estimation, Tracking and Model Learning of Articulated Objects from Dense Depth Video using Projected Texture Stereo,  
[C2] J. Sturm, K. Konolige, C. Stachniss and W. Burgard, 
Vision-based Detection for Learning Articulation Models of Cabinet Doors and Drawers in Household Environments,

[C3] S. Chitta, M. Piccoli and J. Sturm, 
Tactile Object Class and Internal State Recognition for Mobile Manipulation, 

Operating Articulated Objects Based on Experience, 

[J1] J. Sturm, C. Plagemann and W. Burgard, 
Body schema learning for robotic manipulators from visual self-perception, 

[J2] J. Sturm, and A. Visser, 
An appearance-based visual compass for mobile robots, 

[C1] C. Eppner, J. Sturm, M. Bennewitz, C. Stachniss and W. Burgard, 
Imitation Learning with Generalized Task Descriptions, 
*Int. Conf. on Robotics and Automation*, Kobe, Japan, May 2009.

[C2] H. Schulz, L. Ott, J. Sturm and W. Burgard, 
Learning Kinematics from Direct Self-Observation Using Nearest-Neighbor Methods, 
*Proc. of the German Workshop on Robotics*, June 2009.

Towards Understanding Articulated Objects, 

Learning Kinematic Models for Articulated Objects, 
*Proc. of the International Joint Conference on Artificial Intelligence (IJCAI)*, July 2009.

[C5] D. Meyer-Delius, J. Sturm and W. Burgard, 
Regression-Based Online Situation Recognition for Vehicular Traffic Scenarios, 

[C6] A. Schneider, J. Sturm, C. Stachniss, M. Reisert, H. Burkhardt and W. Burgard, 
Object Identification with Tactile Sensors Using Bag-of-Features, 
Unsupervised Body Scheme Learning through Self-Perception, 

Adaptive Body Scheme Models for Robust Robotic Manipulation, 

Body Scheme Learning and Life-Long Adaptation for Robotic Manipulation, 

Autonomous Color Learning in an Artificial Environment, 

Panoramic Localization in the 4-Legged League, 

Robot companion localization at home and in the office, 

Dutch AIBO Team at RoboCup 2006, 

An appearance-based Visual Compass for Mobile Robots, 
University of Amsterdam, the Netherlands, Dec. 2006.

Dutch Aibo Team: Technical Report RoboCup 2006, 

Dutch AIBO Team at RoboCup 2005, 

Dutch Aibo Team: Technical Report RoboCup 2005, 