Author: J. Sturm

List of Publications

Journal Articles

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

[J2] F. Endres, J. Hess, J. Sturm, D. Cremers and W. Burgard,
*3D Mapping with an RGB-D Camera,*

[J3] Liu, Z., Beetz, M., Cremers, D., Gall, J., Li, W., Pangercic, D., Sturm, J., Tai and Y.-W.,
Introduction to the special issue on visual understanding and applications with RGB-D cameras,

[J4] S. Chitta, J. Sturm, M. Piccoli and W. Burgard,
*Tactile Sensing for Mobile Manipulation,*
*IEEE Transactions on Robotics (T-RO)*, 2011.

[J5] 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.

[J6] J. Sturm, C. Plagemann and W. Burgard,
*Body schema learning for robotic manipulators from visual self-perception,*

Books

[B1] J. Sturm,
*Approaches to Probabilistic Model Learning for Mobile Manipulation Robots,*
Springer 2013.

Book Chapters

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

Conference and Workshop Papers

[C1] Dzitsiuk, M., Sturm, J., Maier, R., Ma, L., Cremers and D.,
*De-noising, Stabilizing and Completing 3D Reconstructions On-the-go using Plane Priors,*
[C2] F. Steinbruecker, J. Sturm and D. Cremers, 
Volumetric 3D Mapping in Real-Time on a CPU, 
Hongkong, China, 2014.

[C3] H. Alvarez, L.M. Paz, J. Sturm and D. Cremers, 
Collision Avoidance for Quadrotors with a Monocular Camera, 

[C4] 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.

[C5] O. Dunkley, J. Engel, J. Sturm and D. Cremers, 
Visual-Inertial Navigation for a Camera-Equipped 25g Nano-Quadrotor, 

[C6] D. Bender, M. Schikora, J. Sturm and D. Cremers, 
INS-Camera Calibration without Ground Control Points, 
9th IEEE ISIF Workshop on Sensor Data Fusion: Trends, Solutions, Applications (SDF), 2014.

[C7] 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.

[C8] C. Kerl, J. Sturm and D. Cremers, 
Robust Odometry Estimation for RGB-D Cameras, 
May 2013, Best Vision Paper Award - Finalist.

[C9] E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers, 
Real-Time Camera Tracking and 3D Reconstruction Using Signed Distance Functions, 

[C10] 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.

[C11] 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.

[C12] C. Kerl, J. Sturm and D. Cremers, 
Dense Visual SLAM for RGB-D Cameras, 

[C13] T. Naseer, J. Sturm and D. Cremers, 
FollowMe: Person Following and Gesture Recognition with a Quadrocopter, 
[C14] 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.

[C15] 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.

[C16] 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,
Best research paper award.

[C17] 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.

[C18] J. Engel, J. Sturm and D. Cremers,
Semi-Dense Visual Odometry for a Monocular Camera,
Sydney, Australia, December 2013.

[C19] F. Steinbruecker, C. Kerl, J. Sturm and D. Cremers,
Large-Scale Multi-Resolution Surface Reconstruction from RGB-D Sequences,
Sydney, Australia, 2013.

[C20] 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.

[C21] F. Endres, J. Hess, N. Engelhard, J. Sturm, D. Cremers and W. Burgard,
An Evaluation of the RGB-D SLAM System,

[C22] T. Ruehr, J. Sturm, D. Pangercic, M. Beetz and D. Cremers,
A Generalized Framework for Opening Doors and Drawers in Kitchen Environments,

[C23] L. Zhang, J. Sturm, D. Cremers and D. Lee,
Real-Time Human Motion Tracking using Multiple Depth Cameras,

[C24] J. Engel, J. Sturm and D. Cremers,
Camera-Based Navigation of a Low-Cost Quadrocopter,

[C25] J. Sturm, N. Engelhard, F. Endres, W. Burgard and D. Cremers,
A Benchmark for the Evaluation of RGB-D SLAM Systems,
[C26] J. Engel, J. Sturm and D. Cremers,
**Accurate Figure Flying with a Quadrocopter Using Onboard Visual and Inertial Sensing,**

[C27] J. Sturm, W. Burgard and D. Cremers,
**Evaluating Egomotion and Structure-from-Motion Approaches Using the TUM RGB-D Benchmark,**

[C28] 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.

[C29] 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,**

[C31] 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.

[C33] 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,**

[C34] J. Sturm, K. Konolige, C. Stachniss and W. Burgard,
**Vision-based Detection for Learning Articulation Models of Cabinet Doors and Drawers in Household Environments,**

[C35] S. Chitta, M. Piccoli and J. Sturm,
**Tactile Object Class and Internal State Recognition for Mobile Manipulation,**
[C36] J. Sturm, A. Jain, C. Stachniss, C. C. Kemp and W. Burgard,
Operating Articulated Objects Based on Experience,

[C37] C. Eppner, J. Sturm, M. Bennewitz, C. Stachniss and W. Burgard,
Imitation Learning with Generalized Task Descriptions,
Kobe, Japan, May 2009.

[C38] H. Schulz, L. Ott, J. Sturm and W. Burgard,
Learning Kinematics from Direct Self-Observation Using Nearest-Neighbor Methods,

Towards Understanding Articulated Objects,

[C40] J. Sturm, V. Pradeep, C. Stachniss, C. Plagemann, K. Konolige and W. Burgard,
Learning Kinematic Models for Articulated Objects,
Proc. of the International Joint Conference on Artificial Intelligence (IJCAI), July 2009.

[C41] D. Meyer-Delius, J. Sturm and W. Burgard,
Regression-Based Online Situation Recognition for Vehicular Traffic Scenarios,

[C42] A. Schneider, J. Sturm, C. Stachniss, M. Reisert, H. Burkhardt and W. Burgard,
Object Identification with Tactile Sensors Using Bag-of-Features,

[C43] J. Sturm, C. Plagemann and W. Burgard,
Unsupervised Body Scheme Learning through Self-Perception,

[C44] J. Sturm, C. Plagemann and W. Burgard,
Adaptive Body Scheme Models for Robust Robotic Manipulation,
Robotics: Science and Systems Conference (RSS), Zurich, Switzerland, June 2008.

[C45] J. Sturm, C. Plagemann and W. Burgard,
Body Scheme Learning and Life-Long Adaptation for Robotic Manipulation,

[C46] D. A. van Soest, M. de Greef, J. Sturm and A. Visser,
Autonomous Color Learning in an Artificial Environment,

[C47] J. Sturm, P. van Rossum and A. Visser,
Panoramic Localization in the 4-Legged League,
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List of Publications

[C48] A. Visser, J. Sturm and F.C.A. Groen,
Robot companion localization at home and in the office,

[C49] A. Visser, P. van Rossum, J. Westra, J. Sturm, D. A. van Soest and M. de Greef,
Dutch AIBO Team at RoboCup 2006,

[C50] N. Wijngaards, F. Dignum, P. Jonker, T. de Ridder, A. Visser, S. Leijnen and J. Sturm,
Dutch AIBO Team at RoboCup 2005,

PhDThesis

[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.

MastersThesis

[M1] J. Sturm,
An appearance-based Visual Compass for Mobile Robots,
University of Amsterdam, the Netherlands, Dec. 2006.

Technical Reports

[R1] A. Visser, J. Sturm, P. van Rossum, J. Westra and T. Bink,
Dutch Aibo Team: Technical Report RoboCup 2006,

[R2] J. Sturm, A. Visser and N. Wijngaards,
Dutch Aibo Team: Technical Report RoboCup 2005,