

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] G. Mohanarajah, V. Usenko, M. Singh, R. D'Andrea and M. Waibel,
Cloud-based collaborative 3D mapping in real-time with low-cost robots,
IEEE Transactions on Automation Science and Engineering, 12(2): 423-431, 2015.

Conference and Workshop Papers

- [C1] N Demmel, C Sommer, D Cremers and V Usenko,
Square Root Bundle Adjustment for Large-Scale Reconstruction,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021.
- [C2] N Demmel, D Schubert, C Sommer, D Cremers and V Usenko,
Square Root Marginalization for Sliding-Window Bundle Adjustment,
IEEE International Conference on Computer Vision (ICCV), 2021.
- [C3] C. Sommer, V. Usenko, D. Schubert, N. Demmel and D. Cremers,
Efficient Derivative Computation for Cumulative B-Splines on Lie Groups,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020, **Oral Presentation.**
- [C4] D. Schubert, N. Demmel, L. von Stumberg, V. Usenko and D. Cremers,
Rolling-Shutter Modelling for Visual-Inertial Odometry,
International Conference on Intelligent Robots and Systems (IROS), November 2019.
- [C5] L. von Stumberg, V. Usenko and D. Cremers,
Direct Sparse Visual-Inertial Odometry using Dynamic Marginalization,
International Conference on Robotics and Automation (ICRA), May 2018.
- [C6] 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.
- [C7] 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.**
- [C8] V. Usenko, N. Demmel and D. Cremers,
The Double Sphere Camera Model,
Proc. of the Int. Conference on 3D Vision (3DV), September 2018.

- [C9] 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.
- [C10] V. Usenko, L. von Stumberg, A. Pangercic and D. Cremers,
**Real-Time Trajectory Replanning for MAVs using Uniform B-splines and a
3D Circular Buffer,**
International Conference on Intelligent Robots and Systems (IROS), Vancouver, Canada,
Sep 2017, **Best Paper Award - Finalist** ().
- [C11] 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.
- [C12] J. Engel, V. Usenko and D. Cremers,
A Photometrically Calibrated Benchmark For Monocular Visual Odometry,
arXiv:1607.02555, July 2016.
- [C13] 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), oct 2015.
- [C14] V. Usenko, F. Seidel, Z. Marton, D. Pangercic and M. Beetz,
Furniture Classification using WWW CAD Models,
IROS'12 Workshop on Active Semantic Perception, 2012.

PhDThesis

- [PhD1] V Usenko,
Visual-Inertial Navigation for Autonomous Vehicles,
Technische Universität München, München, 2019.