

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.

Conference and Workshop Papers

- [C1] S Weber, N Demmel, T Chon Chan and D Cremers,
Power Bundle Adjustment for Large-Scale 3D Reconstruction,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023.
- [C2] D Muhle, L Koestler, N Demmel, F Bernard and D Cremers,
The Probabilistic Normal Epipolar Constraint for Frame-To-Frame Rotation Optimization under Uncertain Feature Positions,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.
- [C3] M Gladkova, N Korobov, N Demmel, A Osep, L Leal-Taixe and D Cremers,
DirectTracker: 3D Multi-Object Tracking Using Direct Image Alignment and Photometric Bundle Adjustment,
International Conference on Intelligent Robots and Systems (IROS), 2022.
- [C4] 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.
- [C5] 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.
- [C6] MW Wudenka, MG Müller, N Demmel, A Wedler, R Triebel, D Cremers and W Stuerzl,
Towards Robust Monocular Visual Odometry for Flying Robots on Planetary Missions,
International Conference on Intelligent Robots and Systems (IROS), 2021.
- [C7] S Klenk, J Chui, N Demmel and D Cremers,
TUM-VIE: The TUM Stereo Visual-Inertial Event Dataset,
International Conference on Intelligent Robots and Systems (IROS), 2021.
- [C8] S Weber, N Demmel and D Cremers,
Multidirectional Conjugate Gradients for Scalable Bundle Adjustment,
German Conference on Pattern Recognition (GCPR), 2021, **Oral Presentation**.
- [C9] 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**.
- [C10] N Demmel, M Gao, E Laude, T Wu and D Cremers,
Distributed Photometric Bundle Adjustment,
International Conference on 3D Vision (3DV), 2020, **Oral Presentation**.

- [C11] 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.
- [C12] 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.
- [C13] X. Gao, R. Wang, N. Demmel and D. Cremers,
LDSO: Direct Sparse Odometry with Loop Closure,
International Conference on Intelligent Robots and Systems (IROS), October 2018.
- [C14] 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**.
- [C15] V. Usenko, N. Demmel and D. Cremers,
The Double Sphere Camera Model,
Proc. of the Int. Conference on 3D Vision (3DV), September 2018.
- [C16] J. Diebold, N. Demmel, C. Hazirbas, M. Möller and D. Cremers,
Interactive Multi-label Segmentation of RGB-D Images,
Scale Space and Variational Methods in Computer Vision (SSVM), June 2015.
- [C17] L. Mösenlechner, N. Demmel and M. Beetz,
Becoming action-aware through reasoning about logged plan execution traces,
International Conference on Intelligent Robots and Systems (IROS), 2231-2236, 2010.