

2023**Journal Articles**

- [J1] C Tomani, F Waseda, Y Shen and D Cremers,
Beyond In-Domain Scenarios: Robust Density-Aware Calibration,
arXiv preprint, 2023.
- [J2] D Zhu, Q Khan and D Cremers,
Multi-Vehicle Trajectory Prediction at Intersections using State and Intention Information,
arXiv preprint, 2023.
- [J3] Q Khan, I Sülö, M Ocal and D Cremers,
Learning vision based autonomous lateral vehicle control without supervision,
Applied Intelligence, 1-13, 2023.
- [J4] T Wimmer, V Golkov, HN Dang, M Zaiss, A Maier and D Cremers,
Scale-Equivariant Deep Learning for 3D Data,
arXiv preprint, 2023.

Conference and Workshop Papers

- [C1] F Wimbauer, N Yang, C Rupprecht and D Cremers,
Behind the Scenes: Density Fields for Single View Reconstruction,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023.

2022**Journal Articles**

- [J1] M Brahimi, B Haefner, T Yenamandra, B Goldluecke and D Cremers,
SuperRVol: Super-Resolution Shape and Reflectance Estimation in Inverse Volume Rendering,
arXiv preprint arXiv:2212.04968, 2022.
- [J2] C Tomani and D Cremers,
Challenger: Training with Attribution Maps,
arXiv preprint, 2022.
- [J3] C. Brunner, A. Duensing, C. Schröder, M. Mittermair, V. Golkov, M. Pollanka, D. Cremers and R. Kienberger,
Deep Learning in Attosecond Metrology,
Optics Express, 30(9): 15669-15684, 2022, **Editor's Pick**.

Conference and Workshop Papers

- [C1] C Tomani, D Cremers and F Buettner,
Parameterized Temperature Scaling for Boosting the Expressive Power in Post-Hoc Uncertainty Calibration,
European Conference on Computer Vision (ECCV), 2022.

- [C2] F Müller, Q Khan and D Cremers,
Lateral Ego-Vehicle Control Without Supervision Using Point Clouds,
Pattern Recognition and Artificial Intelligence, Springer International Publishing, 477-488,
2022.
- [C3] L Hang, Q Khan, V Tresp and D Cremers,
Biologically Inspired Neural Path Finding,
Brain Informatics, Springer International Publishing, 2022.
- [C4] D Das, Q Khan and D Cremers,
Ventriloquist-Net: Leveraging Speech Cues for Emotive Talking Head Generation,
IEEE International Conference on Image Processing, 2022.
- [C5] HHH Hsu, Y Shen, C Tomani and D Cremers,
What Makes Graph Neural Networks Miscalibrated?,
NeurIPS, 2022.
- [C6] Y Shen and D Cremers,
Deep Combinatorial Aggregation,
NeurIPS, 2022.
- [C7] HHH Hsu, Y Shen and D Cremers,
A Graph Is More Than Its Nodes: Towards Structured Uncertainty-Aware Learning on Graphs,
NeurIPS 2022 Workshop: New Frontiers in Graph Learning, 2022.

2021

Journal Articles

- [J1] P. Müller, V. Golkov, V. Tomassini and D. Cremers,
Rotation-Equivariant Deep Learning for Diffusion MRI,
arXiv preprint, 2021.
- [J2] M. Mozes, M. Schmitt, V. Golkov, H. Schütze and D. Cremers,
Scene Graph Generation for Better Image Captioning?,
arXiv preprint, 2021.

Conference and Workshop Papers

- [C1] F. Wimbauer, N. Yang, L. von Stumberg, N. Zeller and D Cremers,
MonoRec: Semi-Supervised Dense Reconstruction in Dynamic Environments from a Single Moving Camera,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021.
- [C2] P. Müller, V. Golkov, V. Tomassini and D. Cremers,
Rotation-Equivariant Deep Learning for Diffusion MRI (short version),
International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting,
2021.
- [C3] Q. Khan, P. Wenzel and D. Cremers,
Self-Supervised Steering Angle Prediction for Vehicle Control Using Visual Odometry,
International Conference on Artificial Intelligence and Statistics (AISTATS), 2021.

- [C4] Y. Xia, Y. Xu, S. Li, R. Wang, J. Du, D. Cremers and U. Stilla,
SOE-Net: A Self-Attention and Orientation Encoding Network for Point Cloud based Place Recognition,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021, **Oral Presentation.**
- [C5] P. Wenzel, T. Schön, L. Leal-Taixe and D. Cremers,
Vision-Based Mobile Robotics Obstacle Avoidance With Deep Reinforcement Learning,
Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), 2021.
- [C6] C Tomani and F Buettner,
Towards Trustworthy Predictions from Deep Neural Networks with Fast Adversarial Calibration,
In Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI-2021), 2021.
- [C7] C Tomani, S Gruber, ME Erdem, D Cremers and F Buettner,
Post-hoc Uncertainty Calibration for Domain Drift Scenarios,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021, **Oral Presentation.**
- [C8] D Schnaus, J Lee and R Triebel,
Kronecker-Factored Optimal Curvature,
Bayesian Deep Learning NeurIPS 2021 Workshop, 2021.
- [C9] Y Wang, Y Shen and D Cremers,
Explicit pairwise factorized graph neural network for semi-supervised node classification,
UAI, 2021.

PhD Thesis

- [PhD1] V. Golkov,
Deep learning and variational analysis for high-dimensional and geometric biomedical data,
Department of Informatics, Technical University of Munich, Germany, 2021.

2020

Journal Articles

- [J1] V. Golkov, A. Becker, D. T. Plop, D. Cuturilo, N. Davoudi, J. Mendenhall, R. Moretti, J. Meiler and D. Cremers,
Deep Learning for Virtual Screening: Five Reasons to Use ROC Cost Functions,
arXiv preprint arXiv:2007.07029, 2020.
- [J2] L. von Stumberg, P. Wenzel, Q. Khan and D. Cremers,
GN-Net: The Gauss-Newton Loss for Multi-Weather Relocalization,
IEEE Robotics and Automation Letters (RA-L), 5(2): 890-897, 2020.
- [J3] G Fabbro, V Golkov, T Kemp and D Cremers,
Speech Synthesis and Control Using Differentiable DSP,
arXiv preprint arXiv:2010.15084, 2020.

- [J4] I Chiotellis and D Cremers,
Neural Online Graph Exploration,
arXiv preprint arXiv:2012.03345, 2020.

Conference and Workshop Papers

- [C1] V. Golkov, M. J. Skwark, A. Mirchev, G. Dikov, A. R. Geanes, J. Mendenhall, J. Meiler and D. Cremers,
3D Deep Learning for Biological Function Prediction from Physical Fields,
International Conference on 3D Vision (3DV), 2020.
- [C2] N. Yang, L. von Stumberg, R. Wang and D. Cremers,
D3VO: Deep Depth, Deep Pose and Deep Uncertainty for Monocular Visual Odometry,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020, **Oral Presentation.**
- [C3] J Liu, I Chiotellis, R Triebel and D Cremers,
Effective Version Space Reduction for Convolutional Neural Networks,
European Conference on Machine Learning and Data Mining (ECML-PKDD), 2020.
- [C4] P. Wenzel, R. Wang, N. Yang, Q. Cheng, Q. Khan, L. von Stumberg, N. Zeller and D. Cremers,
4Seasons: A Cross-Season Dataset for Multi-Weather SLAM in Autonomous Driving,
Proceedings of the German Conference on Pattern Recognition (GCPR), 2020.
- [C5] L. von Stumberg, P. Wenzel, N. Yang and D. Cremers,
LM-Reloc: Levenberg-Marquardt Based Direct Visual Relocalization,
International Conference on 3D Vision (3DV), 2020.

2019

Journal Articles

- [J1] F. Pasa, V. Golkov, F. Pfeiffer, D. Cremers and D. Pfeiffer,
Efficient Deep Network Architectures for Fast Chest X-Ray Tuberculosis Screening and Visualization,
Scientific Reports, 9(1): 6268, 2019.
- [J2] J. Schuchardt, V. Golkov and D. Cremers,
Learning to Evolve,
arXiv preprint arXiv:1905.03389, 2019.
- [J3] L. Della Libera, V. Golkov, Y. Zhu, A. Mielke and D. Cremers,
Deep Learning for 2D and 3D Rotatable Data: An Overview of Methods,
arXiv preprint arXiv:1910.14594, 2019.

Conference and Workshop Papers

- [C1] A. Vasilev, V. Golkov, M. Meissner, I. Lipp, E. Sgarlata, V. Tomassini, D. K. Jones and D. Cremers,
q-Space Novelty Detection with Variational Autoencoders,
MICCAI 2019 International Workshop on Computational Diffusion MRI, 2019, **Oral Presentation.**

- [C2] P. Swazinna, V. Golkov, I. Lipp, E. Sgarlata, V. Tomassini, D. K. Jones and D. Cremers, **Negative-Unlabeled Learning for Diffusion MRI**, *International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting*, 2019.
- [C3] Q. Khan, P. Wenzel, D. Cremers and L. Leal-Taixe, **Towards Generalizing Sensorimotor Control Across Weather Conditions**, *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019.

2018

Journal Articles

- [J1] E. Aljalbout, V. Golkov, Y. Siddiqui, M. Strobel and D. Cremers, **Clustering with Deep Learning: Taxonomy and New Methods**, *arXiv preprint arXiv:1801.07648*, 2018.
- [J2] N Mayer, E Ilg, P Fischer, C Hazirbas, D Cremers, A Dosovitskiy and T Brox, **What Makes Good Synthetic Training Data for Learning Disparity and Optical Flow Estimation?**, 41(8): 1797-1812, September 2018.

Conference and Workshop Papers

- [C1] C. Hazirbas, S. G. Soyer, M. C. Staab, L. Leal-Taixe and D. Cremers, **Deep Depth From Focus**, *Asian Conference on Computer Vision (ACCV)*, December 2018.
- [C2] V. Golkov, P. Swazinna, M. M. Schmitt, Q. A. Khan, C. M. W. Tax, M. Serahlazau, F. Pasa, F. Pfeiffer, G. J. Biessels, A. Leemans and D. Cremers, **q-Space Deep Learning for Alzheimer’s Disease Diagnosis: Global Prediction and Weakly-Supervised Localization**, *International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting*, 2018.
- [C3] B. T. Do, V. Golkov, G. E. Gürel and D. Cremers, **Precursor microRNA Identification Using Deep Convolutional Neural Networks**, *bioRxiv preprint*, 2018.
- [C4] P. Haeusser, J. Plapp, V. Golkov, E. Aljalbout and D. Cremers, **Associative Deep Clustering - Training a Classification Network with no Labels**, *Proc. of the German Conference on Pattern Recognition (GCPR)*, October 2018.
- [C5] N. Yang, R. Wang, J. Stueckler and D. Cremers, **Deep Virtual Stereo Odometry: Leveraging Deep Depth Prediction for Monocular Direct Sparse Odometry**, *European Conference on Computer Vision (ECCV)*, September 2018, **Oral Presentation**.
- [C6] P. Wenzel, Q. Khan, D. Cremers and L. Leal-Taixe, **Modular Vehicle Control for Transferring Semantic Information Between Weather Conditions Using GANs**, *Conference on Robot Learning (CoRL)*, 2018.

2017**Journal Articles**

- [J1] J. Kukacka, V. Golkov and D. Cremers,
Regularization for Deep Learning: A Taxonomy,
arXiv preprint arXiv:1710.10686, 2017.

Conference and Workshop Papers

- [C1] F. Walch, C. Hazirbas, L. Leal-Taixe, T. Sattler, S. Hilsenbeck and D. Cremers,
Image-based localization using LSTMs for structured feature correlation,
IEEE International Conference on Computer Vision (ICCV), October 2017.
- [C2] J.C. Peeken, C. Knie, V. Golkov, K. Kessel, F. Pasa, Q. Khan, M. Seroglazov, J. Kukacka, T. Goldberg, L. Richter, J. Reeb, B. Rost, F. Pfeiffer, D. Cremers, F. Nüsslin and S.E. Combs,
Establishment of an interdisciplinary workflow of machine learning-based Radiomics in sarcoma patients,
23. Jahrestagung der Deutschen Gesellschaft für Radioonkologie (DEGRO), 2017.
- [C3] P. Haeusser, A. Mordvintsev and D. Cremers,
Learning by Association - A versatile semi-supervised training method for neural networks,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017.
- [C4] T. Meinhardt, M. Moeller, C. Hazirbas and D. Cremers,
Learning Proximal Operators: Using Denoising Networks for Regularizing Inverse Imaging Problems,
IEEE International Conference on Computer Vision (ICCV), October 2017.
- [C5] S. Caelles, K.-K. Maninis, J. Pont-Tuset, L. Leal-Taixe, D. Cremers and L. V Gool,
One-Shot Video Object Segmentation,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Honolulu, USA, 2017.
- [C6] K. Kurach, S. Gelly, M. Jastrzebski, P. Haeusser, O. Teytaud, D. Vincent and O. Bousquet,
Better Text Understanding Through Image-To-Text Transfer,
arxiv:1705.08386, May 2017.
- [C7] P. Haeusser, T. Frerix, A. Mordvintsev and D. Cremers,
Associative Domain Adaptation,
IEEE International Conference on Computer Vision (ICCV), 2017.

2016**Journal Articles**

- [J1] V. Golkov, A. Dosovitskiy, J. I. Sperl, M. I. Menzel, M. Czisch, P. Sämann, T. Brox and D. Cremers,
q-Space Deep Learning: Twelve-Fold Shorter and Model-Free Diffusion MRI Scans,
IEEE Transactions on Medical Imaging, 35: 2016, **Special Issue on Deep Learning.**

Conference and Workshop Papers

- [C1] V. Golkov, M. J. Skwark, A. Golkov, A. Dosovitskiy, T. Brox, J. Meiler and D. Cremers, **Protein Contact Prediction from Amino Acid Co-Evolution Using Convolutional Networks for Graph-Valued Images**, *Annual Conference on Neural Information Processing Systems (NIPS)*, Barcelona, Spain, dec 2016, **Oral Presentation (acceptance rate: under 2%)**.
- [C2] C. Hazirbas, L. Ma, C. Domokos and D. Cremers, , *Asian Conference on Computer Vision*, november 2016.
- [C3] S. Sharifzadeh, I. Chiotellis, R. Triebel and D. Cremers, **Learning to Drive using Inverse Reinforcement Learning and Deep Q-Networks**, NIPS Workshops, December 2016.

2015

Conference and Workshop Papers

- [C1] V. Golkov, A. Dosovitskiy, P. Sämann, J. I. Sperl, T. Sprenger, M. Czisch, M. I. Menzel, P. A. Gomez, A. Haase, T. Brox and D. Cremers, **q-Space Deep Learning for Twelve-Fold Shorter and Model-Free Diffusion MRI Scans**, *Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Munich, Germany, oct 2015.
- [C2] A. Dosovitskiy, P. Fischer, E. Ilg, P. Haeusser, C. Hazirbas, V. Golkov, P. van der Smagt, D. Cremers and T. Brox, **FlowNet: Learning Optical Flow with Convolutional Networks**, *IEEE International Conference on Computer Vision (ICCV)*, dec 2015.
- [C3] F. Stark, C. Hazirbas, R. Triebel and D. Cremers, **CAPTCHA Recognition with Active Deep Learning**, *GCPR Workshop on New Challenges in Neural Computation*, Aachen, Germany, 2015.