Keywords: Deep Learning

List of Publications

2022
Journal Articles

Deep Learning in Attosecond Metrology,
Optics Express, 30(9): 15669-15684, 2022, Editor’s Pick.

2021
Journal Articles

[J1] P. Müller, V. Golkov, V. Tomassini and D. Cremers,
Rotation-Equivariant Deep Learning for Diffusion MRI,

[J2] C Tomani, D Cremers and F Buettner,
Parameterized Temperature Scaling for Boosting the Expressive Power in Post-Hoc Uncertainty Calibration,

[J3] M. Mozes, M. Schmitt, V. Golkov, H. Schütze and D. Cremers,
Scene Graph Generation for Better Image Captioning?,

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,

[C2] P. Müller, V. Golkov, V. Tomassini and D. Cremers,
Rotation-Equivariant Deep Learning for Diffusion MRI (short version),

[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,

[C5] P. Wenzel, T. Schön, L. Leal-Taixe and D. Cremers,
Vision-Based Mobile Robotics Obstacle Avoidance With Deep Reinforcement Learning,
Keywords: Deep Learning

List of Publications

[C6] C Tomani and F Buettner,
Towards Trustworthy Predictions from Deep Neural Networks with Fast Adversarial Calibration,

[C7] C Tomani, S Gruber, ME Erdem, D Cremers and F Buettner,
Post-hoc Uncertainty Calibration for Domain Drift Scenarios,

[C8] D Schnaus, J Lee and R Triebel,
Kronecker-Factored Optimal Curvature,

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. 38;268uturilo, N. Davoudi, J. Mendenhall, R. Moretti, J. Meiler and D. Cremers,
Deep Learning for Virtual Screening: Five Reasons to Use ROC Cost Functions,

[J2] L. von Stumberg, P. Wenzel, Q. Khan and D. Cremers,
GN-Net: The Gauss-Newton Loss for Multi-Weather Relocalization,

[J3] G Fabbro, V Golkov, T Kemp and D Cremers,
Speech Synthesis and Control Using Differentiable DSP,

[J4] I Chiotellis and D Cremers,
Neural Online Graph Exploration,

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,

[C2] N. Yang, L. von Stumberg, R. Wang and D. Cremers,
D3VO: Deep Depth, Deep Pose and Deep Uncertainty for Monocular Visual Odometry,
Keywords: Deep Learning

List of Publications

[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.

4Seasons: A Cross-Season Dataset for Multi-Weather SLAM in Autonomous Driving,

[C5] L. von Stumberg, P. Wenzel, N. Yang and D. Cremers,
LM-Reloc: Levenberg-Marquardt Based Direct Visual Relocalization,

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,

[J2] J. Schuchardt, V. Golkov and D. Cremers,
Learning to Evolve,

[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,

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,

[C3] Q. Khan, P. Wenzel, D. Cremers and L. Leal-Taixe,
Towards Generalizing Sensorimotor Control Across Weather Conditions,
2018

Journal Articles

[J1] E. Aljalbout, V. Golkov, Y. Siddiqui, M. Strobel and D. Cremers,
Clustering with Deep Learning: Taxonomy and New Methods,

[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?,

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.

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 Net-
works,

[C4] P. Haeusser, J. Plapp, V. Golkov, E. Aljalbout and D. Cremers,
Associative Deep Clustering - Training a Classification Network with no La-
bel,
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 Mono-
cular Direct Sparse Odometry,
European Conference on Computer Vision (ECCV), September 2018, Oral Presentati-
on.

[C6] P. Wenzel, Q. Khan, D. Cremers and L. Leal-Taixe,
Modular Vehicle Control for Transferring Semantic Information Between Wea-
ther 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,

Conference and Workshop Papers
Keywords: Deep Learning

List of Publications

[C1] F. Walch, C. Hazirbas, L. Leal-Taixe, T. Sattler, S. Hilsenbeck and D. Cremers,
Image-based localization using LSTMs for structured feature correlation,

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 Ra-
diomics in sarcoma patients,

[C3] P. Haeusser, A. Mordvintsev and D. Cremers,
Learning by Association - A versatile semi-supervised training method for neural networks,

[C4] T. Meinhardt, M. Moeller, C. Hazirbas and D. Cremers,
Learning Proximal Operators: Using Denoising Networks for Regularizing Inverse Imaging Problems,

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,

[C7] P. Haeusser, T. Frerix, A. Mordvintsev and D. Cremers,
Associative Domain Adaptation,

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.
Keywords: Deep Learning

List of Publications

[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

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.