Keywords: Medical Imaging—biology  List of Publications

2021
Journal Articles

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

Conference and Workshop Papers

[C1] M Naeyaert, V Golkov, D Cremers, J Sijbers and M Verhoye,
Faster and better HARDI using FSE and holistic reconstruction,

[c2] P. Müller, V. Golkov, V. Tomassini and D. Cremers,
Rotation-Equivariant Deep Learning for Diffusion MRI (short version),

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,

Accelerating in vivo fast spin echo high angular resolution diffusion imaging with an isotropic resolution in mice through compressed sensing,

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,

2019
Journal Articles

A Non-invasive 3D Body Scanner and Software Tool towards Analysis of Scoliosis,
Keywords: Medical Imaging—biology  

List of Publications

[J2] F. Pasa, V. Golkov, F. Pfeiffer, D. Cremers and D. Pfeiffer,  
Efficient Deep Network Architectures for Fast Chest X-Ray Tuberculosis Screening and Visualization,  

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,  

2018

Conference and Workshop Papers

[C1] V. Golkov, A. Vasilev, F. Pasa, I. Lipp, W. Boubaker, E. Sgarlata, F. Pfeiffer, V. Tomassini, D. K. Jones and D. Cremers,  
q-Space Novelty Detection in Short Diffusion MRI Scans of Multiple Sclerosis,  

q-Space Deep Learning for Alzheimer’s Disease Diagnosis: Global Prediction and Weakly-Supervised Localization,  

[C3] B. T. Do, V. Golkov, G. E. Gürel and D. Cremers,  
Precursor microRNA Identification Using Deep Convolutional Neural Networks,  

2017

Journal Articles

Genetic defects in s-spectrin and tau sensitize C. elegans axons to movement-induced damage via torque-tension coupling,  

Tau Like Proteins Reduce Torque Generation in Microtubule Bundles,  
Conference and Workshop Papers

Establishment of an interdisciplinary workflow of machine learning-based Radiomics in sarcoma patients,

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, T. Sprenger, J. I. Sperl, M. I. Menzel, M. Czisch, P. Sämann and D. Cremers,
Model-Free Novelty-Based Diffusion MRI,
IEEE International Symposium on Biomedical Imaging (ISBI), Prague, Czech Republic, apr 2016.

[C2] 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%).

2015
Journal Articles

[J1] M. Klodt, K. Herzog, R. Töpfer and D. Cremers,
Field phenotyping of grapevine growth using dense stereo reconstruction,

Book Chapters

[BC1] V. Golkov, J. M. Portegies, A. Golkov, R. Duits and D. Cremers,
Holistic Image Reconstruction for Diffusion MRI,
Computational Diffusion MRI, Munich, Germany, Springer, oct 2015, Book Chapter, and Oral Presentation at MICCAI 2015 Workshop on Computational Diffusion MRI.

Conference and Workshop Papers

[C1] J. Stühmer and D. Cremers,
A Fast Projection Method for Connectivity Constraints in Image Segmentation,
Keywords: Medical Imaging—biology

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2014
Book Chapters


Conference and Workshop Papers


Keywords: Medical Imaging—biology

List of Publications

Direct Reconstruction of the Average Diffusion Propagator with Simultaneous Compressed-Sensing-Accelerated Diffusion Spectrum Imaging and Image Denoising by Means of Total Generalized Variation Regularization,

Semi-Joint Reconstruction for Diffusion MRI Denoising Imposing Similarity of Edges in Similar Diffusion-Weighted Images,

Improved Diffusion Kurtosis Imaging and Direct Propagator Estimation Using 6-D Compressed Sensing,

2013
Journal Articles

[J1] C. Nieuwenhuis and D. Cremers,
Spatially Varying Color Distributions for Interactive Multi-Label Segmentation,

Book Chapters

[BC1] M. Klodt, F. Steinbruecker and D. Cremers,
Moment Constraints in Convex Optimization for Segmentation and Tracking,

Conference and Workshop Papers

[C1] V. Golkov, T. Sprenger, A. Menini, M.I. Menzel, D. Cremers and J.I. Sperl,
Effects of Low-Rank Constraints, Line-Process Denoising, and q-Space Compressed Sensing on Diffusion MR Image Reconstruction and Kurtosis Tensor Estimation,

[C2] V. Golkov, T. Sprenger, M.I. Menzel, D. Cremers and J.I. Sperl,
Line-Process-Based Joint SENSE Reconstruction of Diffusion Images with Intensity Inhomogeneity Correction and Noise Non-Stationarity Correction,
European Society for Magnetic Resonance in Medicine and Biology (ESMRMB) Annual Meeting, 2013, Certificate of Merit Award.

[C3] V. Golkov, M.I. Menzel, T. Sprenger, A. Menini, D. Cremers and J.I. Sperl,
Reconstruction, Regularization, and Quality in Diffusion MRI Using the Example of Accelerated Diffusion Spectrum Imaging,
16th Annual Meeting of the German Chapter of the ISMRM, 2013, Oral Presentation.
Keywords: Medical Imaging—biology

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Corrected Joint SENSE Reconstruction, Low-Rank Constraints, and
Compressed-Sensing-Accelerated Diffusion Spectrum Imaging in Denoising
and Kurtosis Tensor Estimation,
ISMRRM Workshop on Diffusion as a Probe of Neural Tissue Microstructure, 2013.

Hardy, L. Marinelli, M. Czisch, P. Sämann, A. Haase and M.I. Menzel,
SNR-dependent Quality Assessment of Compressed-Sensing-Accelerated Diffu-
sion Spectrum Imaging Using a Fiber Crossing Phantom,
International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting,
2013.

Menzel,
Phase Sensitive Reconstruction in Diffusion Spectrum Imaging Enabling Ve-
locity Encoding and Unbiased Noise Distribution,
International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting,
2013.

Cremers and J.I. Sperl,
Noise Reduction in Accelerated Diffusion Spectrum Imaging through Integra-
tion of SENSE Reconstruction into Joint Reconstruction in Combination with
q-Space Compressed Sensing,
International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting,
2013.

[C8] J. Stühmer, P. Schröder and D. Cremers,
Tree Shape Priors with Connectivity Constraints using Convex Relaxation on
General Graphs,
IEEE International Conference on Computer Vision (ICCV), Sydney, Australia, December
2013, Oral Presentation.

Technical Reports

[R1] M. Souiai, E. Strekalovskiy, C. Nieuwenhuis and D. Cremers,
Label Configuration Priors for Continuous Multi-Label Optimization,

2012

Journal Articles

[J1] S. Chen, D. Cremers and R. J. Radke,
Image segmentation with one shape prior - A template-based formulation,

A. Schikora,
An image classification approach to analyze the suppression of plant immunity
by the human pathogen Salmonella Typhimurium,
Keywords: Medical Imaging—biology List of Publications

Conference and Workshop Papers


2011
Journal Articles

Conference and Workshop Papers


2010
Conference and Workshop Papers

2009
Conference and Workshop Papers
2007
Journal Articles

[J1] D. Cremers, M. Rousson and R. Deriche,
A review of statistical approaches to level set segmentation: integrating color, texture, motion and shape,

Book Chapters

[BC1] D. Cremers and M. Rousson,
Efficient kernel density estimation of shape and intensity priors for level set segmentation,

Conference and Workshop Papers

[C1] D. Cremers, O. Fluck, M. Rousson and S. Aharon,
A probabilistic level set formulation for interactive organ segmentation,

2006
Journal Articles

[J1] D. Cremers, S. J. Osher and S. Soatto,
Kernel density estimation and intrinsic alignment for shape priors in level set segmentation,

Conference and Workshop Papers

[C1] D. Cremers, C. Guetter and C. Xu,
Nonparametric priors on the space of joint intensity distributions for non-rigid multi-modal image registration,

[C2] T. Kohlberger, D. Cremers, M. Rousson and R. Ramaraj,
4D shape priors for level set segmentation of the left myocardium in SPECT sequences,

2005
Conference and Workshop Papers

[C1] M. Rousson and D. Cremers,
Efficient kernel density estimation of shape and intensity priors for level set segmentation,
2002
Journal Articles

[J1] D. Cremers and A. V. M. Herz,
Travelling waves of exitation in neural field models: Equivalence of rate descriptions and integrate-and-fire dynamics,