2020

Journal Articles


Conference and Workshop Papers


2019
Journal Articles


[J4] H. Tjaden, U. Schwankecke, E. Schömer and D. Cremers,  
A Region-based Gauss-Newton Approach to Real-Time Monocular Multiple Object Tracking,  

[J5] T. Frerix, M. Niesner and D. Cremers,  
Homogeneous Linear Inequality Constraints for Neural Network Activations,  

A Non-invasive 3D Body Scanner and Software Tool towards Analysis of Scoliosis,  

[J7] F. Pasa, V. Golkov, F. Pfeiffer, D. Cremers and D. Pfeiffer,  
Efficient Deep Network Architectures for Fast Chest X-Ray Tuberculosis Screening and Visualization,  

[J8] J. Schuchardt, V. Golkov and D. Cremers,  
Learning to Evolve,  

[J9] L. D. 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

Shape Correspondence with Isometric and Non-Isometric Deformations,  

[C2] B. Haefner, Y. Queau and D. Cremers,  
Photometric Segmentation: Simultaneous Photometric Stereo and Masking,  
*International Conference on 3D Vision (3DV)*, Quebec City, Canada, September 2019, Spotlight Presentation.

[C3] B. Haefner, Z. Ye, M. Gao, T. Wu, Y. Queau and D. Cremers,  
Variational Uncalibrated Photometric Stereo under General Lighting,  
*International Conference on Computer Vision (ICCV)*, Seoul, South Korea, October 2019.

[C4] 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.


2018

**Journal Articles**


Conference and Workshop Papers

[C2] C. Sommer and D. Cremers,
Joint Representation of Primitive and Non-primitive Objects for 3D Vision,
2018 International Conference on 3D Vision, 3DV 2018, Verona, Italy, September 5-8, 2018,

[C3] 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.

[C4] B. Haefner, Y. Queau, T. Möllenhoff and D. Cremers,
Fight ill-posedness with ill-posedness: Single-shot variational depth super-resolution from shading,

and D. Cremers,
Discrete-Continuous ADMM for Transductive Inference in Higher-Order MRFs,

[C6] C Domokos, FR. Schmidt and D Cremers,
MRF Optimization with Separable Convex Prior on Partially Ordered Labels,
Vittorio Ferrari, Martial Hebert, Cristian Sminchisescu and Yair Weiss(Eds.),

[C7] E. Laude, T. Wu and D. Cremers,
A Nonconvex Proximal Splitting Algorithm under Moreau-Yosida Regularization,
International Conference on Artificial Intelligence and Statistics (AISTATS), 2018.

[C8] T. Möllenhoff, Z. Ye, T. Wu and D. Cremers,
Combinatorial Preconditioners for Proximal Algorithms on Graphs,
International Conference on Artificial Intelligence and Statistics (AISTATS), 2018.

[C9] R Scona, M Jaimez, YR. Petillot, M Fallon and D Cremers,
StaticFusion: Background Reconstruction for Dense RGB-D SLAM in Dynamic Environments,

[C10] 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,


[C23] V. Estellers, F. Schmidt and D. Cremers,
Robust Fitting of Subdivision Surfaces for Smooth Shape Analysis,
Proc. of the Int. Conference on 3D Vision (3DV), September 2018, Received the Best Paper Award at 3DV 2018.

[C24] 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] G. Kusch, P. d’Angelo, D. Gaudrie, P. Reinartz and D. Cremers,
Spatially Regularized Fusion of Multiresolution Digital Surface Models,

[J2] D. Cremers, L. Leal-Taixe and R. Vidal,
Deep Learning for Computer Vision (Dagstuhl Seminar 17391),
Dagstuhl Reports, 7(9): 109-125, 2017.

[J3] Y. Kee, Y. Lee, M. Souiai, D. Cremers and J. Kim,
Sequential Convex Programming for Computing Information-Theoretic Minimal Partitions: Nonconvex Nonsmooth Optimization,

[J4] D Cremers,
Computer Vision für 3-D-Rekonstruktion - Vom Nischenthema zum Mainstream,

[J5] E. Rodola, L. Cosmo, M. M. Bronstein, A. Torsello and D. Cremers,
Partial Functional Correspondence,

[J6] L. Cosmo, E. Rodola, A. Albarelli, F. Memoli and D. Cremers,
Consistent Partial Matching of Shape Collections via Sparse Modeling,

3D Deep Learning for Biological Function Prediction from Physical Fields,

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,
Author: Cremers

List of Publications

[J10] E Rodola, M Möller and D Cremers,
Regularized Pointwise Map Recovery from Functional Correspondence,

[J11] J. Kukacka, V. Golkov and D. Cremers,
Regularization for Deep Learning: A Taxonomy,

Conference and Workshop Papers

[C1] M. Benning, M. Möller, R. Z. Nossek, M. Burger, D. Cremers and G. Gilboa,
Nonlinear Spectral Image Fusion,

[C2] D. Bender, W. Koch and D. Cremers,
Map-based drone homing using shortcuts,

[C3] G. Kuschk, A. Bozic and D. Cremers,
Real-time variational stereo reconstruction with applications to large-scale dense SLAM,

[C4] M. Jaimez, C. Kerl, J. Gonzalez-Jimenez and D. Cremers,
Fast Odometry and Scene Flow from RGB-D Cameras based on Geometric Clustering,
*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 2017.

[C5] M. Jaimez, T. J. Cashman, A. Fitzgibbon, J. Gonzalez-Jimenez and D. Cremers,
An Efficient Background Term for 3D Reconstruction and Tracking with Smooth Subdivision Surface Models,

[C6] L. Ma, J. Stueckler, C. Kerl and D. Cremers,
Multi-View Deep Learning for Consistent Semantic Mapping with RGB-D Cameras,

[C7] M. Vestner, R. Litman, E. Rodola, A. Bronstein and D. Cremers,
Product Manifold Filter: Non-Rigid Shape Correspondence via Kernel Density Estimation in the Product Space,

[C8] M. Dzitsiuk, J. Sturm, R. Maier, L. Ma and D. Cremers,
De-noising, Stabilizing and Completing 3D Reconstructions On-the-go using Plane Priors,
[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] 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. Nüssl and S.E. Combs,
Establishment of an interdisciplinary workflow of machine learning-based Radiomics in sarcoma patients,

[C12] Y. Queau, M. Pizenberg, J.-D. Durou and D. Cremers,
Microgeometry capture and RGB albedo estimation by photometric stereo without demosaicing,
International Conference on Quality Control by Artificial Vision (QCAV), 2017.

[C13] P. Haeusser, A. Mordvintsev and D. Cremers,
Learning by Association - A versatile semi-supervised training method for neural networks,

[C14] M. Slavcheva, M. Baust, D. Cremers and S. Ilic,
KillingFusion: Non-rigid 3D Reconstruction without Correspondences,

[C15] 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 ()

[C16] Y. Queau, T. Wu, F. Lauze, J.-D. Durou and D. Cremers,
A Non-Convex Variational Approach to Photometric Stereo under Inaccurate Lighting,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Honolulu, USA,
2017.

[C17] 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.

[C19] Y. Queau, J. Melou, J.-D. Durou and D. Cremers,
Dense Multi-view 3D-reconstruction Without Dense Correspondences,
[C20] P. Haeusser, T. Frerix, A. Mordvintsev and D. Cremers, 
*Associative Domain Adaptation*,

[C21] Y. Queau, M. Pizenberg, D. Cremers and J.-D. Durou, 
*Stereophotometrie microscopique sans demosaïquage*,
*GRETSI*, Juan-les-Pins, USA, 2017.

*Efficient Deformable Shape Correspondence via Kernel Matching*,

[C23] R. Maier, R. Schaller and D. Cremers, 
*Efficient Online Surface Correction for Real-time Large-Scale 3D Reconstruction*,

[C24] J. Geiping, H. Dirks and D. Cremers, 
*Multiframe Motion Coupling for Video Super Resolution*,

[C25] R. Maier, K. Kim, D. Cremers, J. Kautz and M. Niessner, 
*Intrinsic3D: High-Quality 3D Reconstruction by Joint Appearance and Geometry Optimization with Spatially-Varying Lighting*,

[C26] S. Peng, B. Haefner, Y. Queau and D. Cremers, 
*Depth Super-Resolution Meets Uncalibrated Photometric Stereo*,
*International Conference on Computer Vision Workshops (ICCVW)*, 2017, *Oral Presentation at ICCV Workshop on Color and Photometry in Computer Vision*.

[C27] R. Wang, M. Schwörer and D. Cremers, 
*Stereo DSO: Large-Scale Direct Sparse Visual Odometry with Stereo Cameras*,

[C28] T. Möllenhoff and D. Cremers, 
*Sublabel-Accurate Discretization of Nonconvex Free-Discontinuity Problems*,

[C29] Y. Queau, J. Melou, F. Castan, D. Cremers and J.-D. Durou, 
*A Variational Approach to Shape-from-shading Under Natural Illumination*,

[C30] F. Bernard, F. R. Schmidt, J. Thunberg and D. Cremers, 
*A Combinatorial Solution to Non-Rigid 3D Shape-to-Image Matching*,
2016

Journal Articles

[J1] J. Diebold, C. Nieuwenhuis and D. Cremers,
Midrange Geometric Interactions for Semantic Segmentation,

[J2] J. Duran, M. Möller, C. Sbert and D. Cremers,
Collaborative Total Variation: A General Framework for Vectorial TV Models,

[J3] M. Burger, G. Gilboa, M. Möller, L. Eckardt and D. Cremers,
Spectral Decompositions Using One-Homogeneous Functionals,

Anisotropic Diffusion Descriptors,

[J5] 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,

[J6] O. Litany, E. Rodola, A. M. Bronstein, M. M. Bronstein and D. Cremers,
Non-Rigid Puzzles,

[J7] M. Vestner, R. Litman, A. Bronstein, E. Rodola and D. Cremers,
Bayesian Inference of Bijective Non-Rigid Shape Correspondence,

Book Chapters

[BC1] M. Vestner, E. Rodola, T. Windheuser, RBS. Bulo and D. Cremers,
Applying Random Forests to the Problem of Dense Non-rigid Shape Correspondence,

Conference and Workshop Papers

[C1] L. Cosmo, A. Albarelli, F. Bergamasco, A. Torsello, E. Rodola and D. Cremers,
A game-theoretical approach for joint matching of multiple feature throughout unorderd images,

[C2] N. Mayer, E. Ilg, P. Häusser, P. Fischer, D. Cremers, A. Dosovitskiy and T. Brox,
A Large Dataset to Train Convolutional Networks for Disparity, Optical Flow, and Scene Flow Estimation,
[C3] 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.

[C4] 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%).

[C5] Z. Lähner, E. Rodola, F. R. Schmidt, M. M. Bronstein and D. Cremers,
Efficient Globally Optimal 2D-to-3D Deformable Shape Matching,
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, May 2016.

[C6] V. Usenko, J. Engel, J. Stueckler and D. Cremers,
Direct Visual-Inertial Odometry with Stereo Cameras,

[C7] A. Narr, R. Triebel and D. Cremers,
Stream-based Active Learning for Efficient and Adaptive Classification of 3D Objects,

SHREC16: Matching of Deformable Shapes with Topological Noise,
*Proc. of Eurographics Workshop on 3D Object Retrieval (3DOR)*, May 2016.

SHREC16: Partial Matching of Deformable Shapes,
*Proc. of Eurographics Workshop on 3D Object Retrieval (3DOR)*, May 2016.

[C10] T. Möllenhoff, E. Laude, M. Moeller, J. Lellmann and D. Cremers,
Sublabel-Accurate Relaxation of Nonconvex Energies,
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2016, Oral Presentation, Received the Best Paper Honorable Mention Award at CVPR 2016.

[C11] L. Ma, C. Kerl, J. Stueckler and D. Cremers,
CPA-SLAM: Consistent Plane-Model Alignment for Direct RGB-D SLAM,

[C12] J. Engel, V. Usenko and D. Cremers,
A Photometrically Calibrated Benchmark For Monocular Visual Odometry,

[C13] J. Engel, V. Koltun and D. Cremers,
Direct Sparse Odometry,

[C14] E. Laude, T. Möllenhoff, M. Moeller, J. Lellmann and D. Cremers,
Sublabel-Accurate Convex Relaxation of Vectorial Multilabel Energies,
*European Conference on Computer Vision (ECCV)*, October 2016.
[C15] D. Bender, D. Cremers and W. Koch,
A position free boresight calibration for INS-camera systems,

[C16] I. Chiotellis, R. Triebel, T. Windheuser and D. Cremers,
Non-Rigid 3D Shape Retrieval via Large Margin Nearest Neighbor Embedding,
European Conference on Computer Vision (ECCV), October 2016.

[C17] T. Windheuser and D. Cremers,
A Convex Solution to Spatially-Regularized Correspondence Problems,
European Conference on Computer Vision (ECCV), October 2016.

[C18] S. Sharifzadeh, I. Chiotellis, R. Triebel and D. Cremers,
Learning to Drive using Inverse Reinforcement Learning and Deep Q-Networks,
NIPS Workshops, December 2016.

[C19] D. Bender, F. Rouatbi, M. Schikora, D. Cremers and W. Koch,
Scaling the world of monocular SLAM with INS-measurements for UAS navigation,

2015
Journal Articles

[J1] J. Diebold, S. Tari and D. Cremers,
The Role of Diffusion in Figure Hunt Games,

[J2] S. Madhogaria, P. M. Baggenstoss, M. Schikora, W. Koch and D. Cremers,
Car detection by fusion of HOG and causal MRF,

[J3] M. Klodt, K. Herzog, R. Töpfer and D. Cremers,
Field phenotyping of grapevine growth using dense stereo reconstruction,

[J4] E. Rodola, A. Albarelli, D. Cremers and A. Torsello,
A Simple and Effective Relevance-based Point Sampling for 3D Shapes,

[J5] R. Mecca, E. Rodola and D. Cremers,
Realistic Photometric Stereo Using Partial Differential Irradiance Equation Ratios,

[J6] T. Möllenhoff, E. Strekalovskiy, M. Möller and D. Cremers,
The Primal-Dual Hybrid Gradient Method for Semiconvex Splittings,
[J7] Y. Kee, H. Lee, J. Yim, D. Cremers and J. Kim, 
Entropy Minimization for Groupwise Planar Shape Co-alignment and its Applications, 

[J8] M. Möller, M. Benning, C. Schönlieb and D. Cremers, 
Variational Depth From Focus Reconstruction, 

Book Chapters

[BC1] D. Cremers,  
Image Segmentation with Shape Priors: Explicit Versus Implicit Representations, 

[BC2] 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] M. Möller, J. Diebold, G. Gilboa and D. Cremers,  
Learning Nonlinear Spectral Filters for Color Image Reconstruction,  
*IEEE International Conference on Computer Vision (ICCV)*, 2015.

[C2] 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.

[C3] C. Hazirbas, J. Diebold and D. Cremers,  
Optimizing the Relevance-Redundancy Tradeoff for Efficient Semantic Segmentation,  
*Scale Space and Variational Methods in Computer Vision (SSVM)*, june 2015, Oral Presentation.

[C4] T. Möllenhoff, E. Strelkalovskiy, M. Möller and D. Cremers,  
Low Rank Priors for Color Image Regularization,  

[C5] M. Jaimez, M. Souiai, J. Gonzalez-Jimenez and D. Cremers,  
A Primal-Dual Framework for Real-Time Dense RGB-D Scene Flow,  
*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 2015.

[C6] J. Stühmer and D. Cremers,  
A Fast Projection Method for Connectivity Constraints in Image Segmentation,  
[C7] R. Mecca, E. Rodola and D. Cremers, 
Analysis of Surface Parametrizations for Modern Photometric Stereo Modelling, 
*International Conference on Quality Control by Artificial Vision (QCAV)*, 2015.

[C8] F. Bergamasco, A. Albarelli, L. Cosmo, A. Torsello, E. Rodola and D. Cremers, 
Adopting an Unconstrained Ray Model in Light-field Cameras for 3D Shape Reconstruction, 
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2015.

[C9] D. Mund, R. Triebel and D. Cremers, 
Active Online Confidence Boosting for Efficient Object Classification, 

P. A. Gomez, A. Haase, T. Brox and D. Cremers, 
q-Space Deep Learning for Twelve-Fold Shorter and Model-Free Diffusion MRI Scans, 

[C11] 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.

V. Evers, M. Fiore, H. Hung, O. A. I Ramirez, M. Joosse, H. Kambhaita, T. Kucner, B. 
Leibe, A. J. Lilienthal, T. Linder, M. Lohse, M. Magnusson, B. Okal, L. Palmieri, U. Rafi, 
M. van Rooij and L. Zhang, 
SPENCER: A Socially Aware Service Robot for Passenger Guidance and Help in Busy Airports, 

[C13] J. Engel, J. Stueckler and D. Cremers, 
Large-Scale Direct SLAM with Stereo Cameras, 

[C14] D. Caruso, J. Engel and D. Cremers, 
Large-Scale Direct SLAM for Omnidirectional Cameras, 

[C15] Y. Tao, R. Triebel and D. Cremers, 
Semi-supervised Online Learning for Efficient Classification of Objects in 3D Data Streams, 

[C16] R. Maier, J. Stueckler and D. Cremers, 
Super-Resolution Keyframe Fusion for 3D Modeling with High-Quality Textures, 
[C17] V. Usenko, J. Engel, J. Stueckler and D. Cremers,
Reconstructing Street-Scenes in Real-Time From a Driving Car,

[C18] M. Jaimez, M. Souiai, J. Stueckler, J. Gonzalez-Jimenez and D. Cremers,
Motion Cooperation: Smooth Piece-Wise Rigid Scene Flow from RGB-D Images,

[C19] E. Rodola, M. Moeller and D. Cremers,
Point-wise Map Recovery and Refinement from Functional Correspondence,
Proceedings Vision, Modeling and Visualization (VMV), Aachen, Germany, 2015, Received the Best Paper Award.

[C20] C. Kerl, J. Stueckler and D. Cremers,
Dense Continuous-Time Tracking and Mapping with Rolling Shutter RGB-D Cameras,
IEEE International Conference on Computer Vision (ICCV), Santiago, Chile, 2015.

[C21] M. Souiai, M. R. Oswald, Y. Kee, J. Kim, M. Pollefeys and D. Cremers,
Entropy Minimization for Convex Relaxation Approaches,
IEEE International Conference on Computer Vision (ICCV), Santiago, Chile, 2015.

[C22] 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.

Model-Based Tracking at 300Hz using Raw Time-of-Flight Observations,
IEEE International Conference on Computer Vision (ICCV), Santiago, Chile, 2015.

2014
Journal Articles

[J1] B. Goldluecke, M. Aubry, K. Kolev and D. Cremers,
A Super-resolution Framework for High-Accuracy Multiview Reconstruction,

[J2] E. Strekalovskiy, A. Chambolle and D. Cremers,
Convex Relaxation of Vectorial Problems with Coupled Regularization,

[J3] J. Engel, J. Sturm and D. Cremers,
Scale-Aware Navigation of a Low-Cost Quadrocopter with a Monocular Camera,

[J4] E. Rodola, S. R Bulo and D. Cremers,
Robust Region Detection via Consensus Segmentation of Deformable Shapes,

Books
Author: Cremers  

List of Publications

[B1] E. D. Cremers, I. Reid, H. Saito and M.-S. Yang,  
Computer Vision: ACCV 2014,  
Springer 2014.

Book Chapters

Joint Super-Resolution Using Only One Anisotropic Low-Resolution Image per q-Space Coordinate,  
Computational Diffusion MRI, Springer, 2014, Book Chapter, and Oral Presentation at MICCAI 2014 Workshop on Computational Diffusion MRI.

Conference and Workshop Papers

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,  

[C4] F. Steinbruecker, J. Sturm and D. Cremers,  
Volumetric 3D Mapping in Real-Time on a CPU,  
International Conference on Robotics and Automation (ICRA), Hongkong, China, 2014.

[C5] E. Rodola, S. R Bulo, T. Windheuser, M. Vestner and D. Cremers,  
Dense Non-Rigid Shape Correspondence Using Random Forests,  

[C6] Y. Kee, M. Souiai, D. Cremers and J. Kim,  
Sequential Convex Relaxation for Mutual-Information-Based Unsupervised Figure-Ground Segmentation,  

[C7] H. Alvarez, L.M. Paz, J. Sturm and D. Cremers,  
Collision Avoidance for Quadrotors with a Monocular Camera,  

[C8] J. Engel, T. Schöps and D. Cremers,  
LSD-SLAM: Large-Scale Direct Monocular SLAM,  
European Conference on Computer Vision (ECCV), September 2014, Oral Presentation.
[C9] T. Schöps, J. Engel and D. Cremers,
Semi-Dense Visual Odometry for AR on a Smartphone,

[C10] T. Windheuser, M. Vestner, E. Rodola, R. Triebel and D. Cremers,
Optimal Intrinsic Descriptors for Non-Rigid Shape Analysis,

[C11] M. Strobel, J. Diebold and D. Cremers,
Flow and Color Inpainting for Video Completion,
*German Conference on Pattern Recognition (GCPR)*, Münster, Germany, September 2014, Oral Presentation.

[C12] R. Maier, J. Sturm and D. Cremers,
Submap-based Bundle Adjustment for 3D Reconstruction from RGB-D Data,
*German Conference on Pattern Recognition (GCPR)*, Münster, Germany, September 2014, Oral Presentation.

[C13] T. Gurdan, M. R. Oswald, D. Gurdan and D. Cremers,
Spatial and Temporal Interpolation of Multi-View Image Sequences,
*German Conference on Pattern Recognition (GCPR)*, Münster, Germany, Vol. 36, sep 2014.

[C14] M. R. Oswald and D. Cremers,
Surface Normal Integration for Convex Space-time Multi-view Reconstruction,

[C15] C. Nieuwenhuis, S. Hawe, M. Kleinsteuber and D. Cremers,
Co-Sparse Textural Similarity for Interactive Segmentation,

[C16] M. R. Oswald, J. Stühmer and D. Cremers,
Generalized Connectivity Constraints for Spatio-temporal 3D Reconstruction,

[C17] E. Strekalovskiy and D. Cremers,
Real-Time Minimization of the Piecewise Smooth Mumford-Shah Functional,

[C18] A. Kanezaki, E. Rodola, D. Cremers and T. Harada,
[Taiou tenshuugou ruijido gakushuu wo mochiita goutai-higoutai buttau kenshutsu],

[C19] M. Andreux, E. Rodola, M. Aubry and D. Cremers,
Anisotropic Laplace-Beltrami Operators for Shape Analysis,
*Sixth Workshop on Non-Rigid Shape Analysis and Deformable Image Alignment (NORDIA)*, 2014.

[C20] O. Dunkley, J. Engel, J. Sturm and D. Cremers,
Visual-Inertial Navigation for a Camera-Equipped 25g Nano-Quadrotor,
[C21] R. Triebel, J. Stühmer, M. Souiai and D. Cremers,  
Active Online Learning for Interactive Segmentation Using Sparse Gaussian Processes,  
*German Conference on Pattern Recognition*, 2014.

[C22] S. Debnath, S. S. Baishya, R. Triebel, V. Dutt and D. Cremers,  
Environment-adaptive Learning: How Clustering Helps to Obtain Good Training Data,  

[C23] A. Kanezaki, E. Rodola, D. Cremers and T. Harada,  
Learning Similarities for Rigid and Non-Rigid Object Detection,  

[C24] D. Bender, M. Schikora, J. Sturm and D. Cremers,  
INS-Camera Calibration without Ground Control Points,  

[C25] C. Kerl, M. Souiai, J. Sturm and D. Cremers,  
Towards Illumination-invariant 3D Reconstruction using ToF RGB-D Cameras,  

[C26] F. R. Schmidt, T. Windheuser, U. Schlickewei and D. Cremers,  
Dense Elastic 3D Shape Matching,  

2013  
Journal Articles

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

[J2] C. Nieuwenhuis, E. Toeppe and D. Cremers,  
A Survey and Comparison of Discrete and Continuous Multi-label Optimization Approaches for the Potts Model,  

[J3] B. Goldluecke, E. Strekalovskiy and D. Cremers,  
Tight Convex Relaxations for Vector-Valued Labeling,  

[J4] F. Endres, J. Hess, J. Sturm, D. Cremers and W. Burgard,  
3D Mapping with an RGB-D Camera,  

[J5] Z. Liu, M. Beetz, D. Cremers, J. Gall, W. Li, D. Pangeric, J. Sturm and Y.-W. Tai,  
Introduction to the special issue on visual understanding and applications with RGB-D cameras,  
**Book Chapters**

[BC1] M. Klodt, F. Steinbruecker and D. Cremers, 

**Conference and Workshop Papers**

[C1] M. Souiai, C. Nieuwenhuis, E. Strekalovskiy and D. Cremers, 

[C2] J. Bergbauer, C. Nieuwenhuis, M. Souiai and D. Cremers, 

[C3] V. Golkov, T. Sprenger, A. Menini, M.I. Menzel, D. Cremers and J.I. Sperl, 


[C5] 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*.

[C6] V. Golkov, M.I. Menzel, T. Sprenger, A. Menini, D. Cremers and J.I. Sperl, 


[C8] C. Kerl, J. Sturm and D. Cremers, 

21
[C9] E. Toeppe, C. Nieuwenhuis and D. Cremers, 
*Volume Constraints for Single View Reconstruction*, 
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Portland, USA, 2013.

[C10] E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers, 
*Real-Time Camera Tracking and 3D Reconstruction Using Signed Distance Functions*, 

[C11] E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers, 
*Direct Camera Pose Tracking and Mapping With Signed Distance Functions*, 
*Demo Track of the RGB-D Workshop on Advanced Reasoning with Depth Cameras at the Robotics: Science and Systems Conference (RSS)*, June 2013.

[C12] M. Souiai, E. Strekalovskiy, C. Nieuwenhuis and D. Cremers, 
*A Co-occurrence Prior for Continuous Multi-Label Optimization*, 

[C13] F. Stangl, M. Souiai and D. Cremers, 
*Performance Evaluation of Narrow Band Methods for Variational Stereo*, 
*35th German Conference on Pattern Recognition (GCPR)*, 2013.

[C14] T. Möllenhoff, C. Nieuwenhuis, E. Toeppe and D. Cremers, 
*Efficient Convex Optimization for Minimal Partition Problems with Volume Constraints*, 

[C15] C. Kerl, J. Sturm and D. Cremers, 
*Dense Visual SLAM for RGB-D Cameras*, 

[C16] T. Naseer, J. Sturm and D. Cremers, 
*FollowMe: Person Following and Gesture Recognition with a Quadrocopter*, 

[C17] M. Klodt, J. Sturm and D. Cremers, 
*Scale-Aware Object Tracking with Convex Shape Constraints on RGB-D Images*, 
*German Conference on Pattern Recognition (GCPR)*, Saarbrücken, Germany, September 2013.

[C18] J. Sturm, E. Bylow, F. Kahl and D. Cremers, 
*Dense Tracking and Mapping with a Quadrocopter*, 
*Unmanned Aerial Vehicle in Geomatics (UAV-g)*, Rostock, Germany, September 2013.

[C19] D. Bender, M. Schikora, J. Sturm and D. Cremers, 
*Graph-based bundle adjustment for INS-camera calibration*, 
*Unmanned Aerial Vehicle in Geomatics (UAV-g)*, Rostock, Germany, September 2013, 
*Best research paper award*. 
[C20] J. Sturm, E. Bylow, F. Kahl and D. Cremers,
*CopyMe3D: Scanning and Printing Persons in 3D,*
*German Conference on Pattern Recognition (GCPR)*, Saarbrücken, Germany, September 2013.

[C21] E. Rodola, T. Harada, Y. Kuniyoshi and D. Cremers,
*Efficient Shape Matching using Vector Extrapolation,*

[C22] J. Engel, J. Sturm and D. Cremers,
*Semi-Dense Visual Odometry for a Monocular Camera,*
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

[C23] E. Rodola, A. Torsello, T. Harada, Y. Kuniyoshi and D. Cremers,
*Elastic Net Constraints for Shape Matching,*
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

[C24] J. Lellmann, E. Strekalovskiy, S. Koetter and D. Cremers,
*Total Variation Regularization for Functions with Values in a Manifold,*
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

[C25] C. Nieuwenhuis, E. Strekalovskiy and D. Cremers,
*Proportion Priors for Image Sequence Segmentation,*
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

[C26] J. Stühmer, P. Schröder and D. Cremers,
*Tree Shape Priors with Connectivity Constraints using Convex Relaxation on General Graphs,*

[C27] G. Kuschk and D. Cremers,
*Fast and Accurate Large-scale Stereo Reconstruction using Variational Methods,*
*ICCV Workshop on Big Data in 3D Computer Vision*, Sydney, Australia, December 2013.

[C28] M. R. Oswald and D. Cremers,
*A Convex Relaxation Approach to Space Time Multi-view 3D Reconstruction,*
*ICCV Workshop on Dynamic Shape Capture and Analysis (4DMOD)*, 2013.

[C29] F. Steinbruecker, C. Kerl, J. Sturm and D. Cremers,
*Large-Scale Multi-Resolution Surface Reconstruction from RGB-D Sequences,*
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, 2013.

[C30] T. Naseer, J. Sturm and D. Cremers,
*Interactive Person Following and Gesture Recognition with a Flying Robot,*
*Proc. of the Assistance and Service Robotics Workshop (ASROB) at the IEEE Int. Conf. on Intelligent Robots and Systems (IROS)*, Nov. 2013.
Author: Cremers

List of Publications

[C31] D. Cremers, E. Rodola and T. Windheuser,
Relaxations for Minimizing Metric Distortion and Elastic Energies for 3D Shape Matching,

Technical Reports

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

2012

Journal Articles

[J1] A. Chambolle, D. Cremers and T. Pock,
A Convex Approach to Minimal Partitions,

[J2] T. Schoenemann and D. Cremers,
A Coding Cost Framework for Super-resolution Motion Layer Decomposition,

[J3] T. Schoenemann, F. Kahl, S. Masnou and D. Cremers,
A linear framework for region-based image segmentation and inpainting involving curvature penalization,

[J4] D. Cremers,
Optimal Solutions for Semantic Image Decomposition,

[J5] S. Chen, D. Cremers and R. J. Radke,
Image segmentation with one shape prior - A template-based formulation,

[J6] B. Goldluecke, E. Strekalovskiy and D. Cremers,
The Natural Total Variation Which Arises from Geometric Measure Theory,

[J7] K. Kolev, T. Brox and D. Cremers,
Fast Joint Estimation of Silhouettes and Dense 3D Geometry from Multiple Images,

An image classification approach to analyze the suppression of plant immunity by the human pathogen Salmonella Typhimurium,

[J9] D. Cremers and E. Strekalovskiy,
Total Cyclic Variation and Generalizations,
Book Chapters

[BC1] M. Schikora, W. Koch, R. L. Streit and D. Cremers,
A Sequential Monte Carlo Method for Multi-Target Tracking with the Intensity Filter,

Conference and Workshop Papers

[C1] F. Endres, J. Hess, N. Engelhard, J. Sturm, D. Cremers and W. Burgard,
An Evaluation of the RGB-D SLAM System,

[C2] T. Ruehr, J. Sturm, D. Pangercic, M. Beetz and D. Cremers,
A Generalized Framework for Opening Doors and Drawers in Kitchen Environments,

[C3] M. Schikora, A. Gning, L. Mihaylova, D. Cremers, W. Koch and R. Streit,
Box-Particle Intensity Filter,

[C4] M. Schikora, A. Gning, L. Mihaylova, D. Cremers and W. Koch,
Box-Particle PHD Filter for Multi-Target Tracking,
15th International Conference on Information Fusion (FUSION), Singapore, July 2012.

[C5] L. Zhang, J. Sturm, D. Cremers and D. Lee,
Real-Time Human Motion Tracking using Multiple Depth Cameras,

[C6] E. Strekalovskiy, C. Nieuwenhuis and D. Cremers,
Nonmetric Priors for Continuous Multilabel Optimization,

[C7] T. Windheuser, H. Ishikawa and D. Cremers,
Generalized Roof Duality for Multi-Label Optimization: Optimal Lower Bounds and Persistency,

[C8] T. Windheuser, H. Ishikawa and D. Cremers,
QPBO [QPBO arugorizumu no tachika ni yoru hiretsu moyura enerugi saisho-
ka],
Meeting on Image Recognition and Understanding, Fukuoka, Japan, Aug 2012.

[C9] M. R. Oswald, E. Toeppe and D. Cremers,
Fast and Globally Optimal Single View Reconstruction of Curved Objects,

[C10] E. Strekalovskiy, A. Chambolle and D. Cremers,
A Convex Representation for the Vectorial Mumford-Shah Functional,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Providence, Rhode Island, Jun 2012.
[C11] J. Engel, J. Sturm and D. Cremers, 
**Camera-Based Navigation of a Low-Cost Quadrocopter,**

[C12] J. Sturm, N. Engelhard, F. Endres, W. Burgard and D. Cremers, 
**A Benchmark for the Evaluation of RGB-D SLAM Systems,**

[C13] J. Engel, J. Sturm and D. Cremers, 
**Accurate Figure Flying with a Quadrocopter Using Onboard Visual and Inertial Sensing,**

[C14] J. Sturm, W. Burgard and D. Cremers, 
**Evaluating Egomotion and Structure-from-Motion Approaches Using the TUM RGB-D Benchmark,**

[C15] N. Ufer, M. Souiai and D. Cremers, 
**Wehrli 2.0: An Algorithm for Tidying up Art,**

[C16] G. M. Garcia, D. A. Klein, J. Stueckler, S. Frintrop and A. B. Cremers, 
**Adaptive Multi-cue 3D Tracking of Arbitrary Objects,**

2011

**Journal Articles**

[J1] T. Windheuser, U. Schlickewei, F. R. Schmidt and D. Cremers, 
**Large-Scale Integer Linear Programming for Orientation-Preserving 3D Shape Matching,**

[J2] D. Cremers and K. Kolev, 
**Multiview Stereo and Silhouette Consistency via Convex Functionals over Convex Domains,**

**Stereoscopic Scene Flow Computation for 3D Motion Understanding,**

[J4] T. Schoenemann, S. Masnou and D. Cremers, 
**The Elastic Ratio: Introducing Curvature into Ratio-Based Globally Optimal Image Segmentation,**
[J5] A. Sellent, M. Eisemann, B. Goldluecke, D. Cremers and M. Magnor,
Motion Field Estimation from Alternate Exposure Images,

Merkel and D. Cremers,
A Variational Approach to Vesicle Membrane Reconstruction from Fluorescence Imaging,

**Books**

[B1] A. Wedel and D. Cremers,
Stereoscopic Scene Flow for 3D Motion Analysis,
Springer 2011.

**Book Chapters**

[BC1] D. Cremers, T. Pock, K. Kolev and A. Chambolle,
Convex Relaxation Techniques for Segmentation, Stereo and Multiview Reconstruction,

[BC2] D. Cremers,
Image Segmentation with Shape Priors: Explicit Versus Implicit Representations,

**Conference and Workshop Papers**

[C1] T. Windheuser, U. Schlickewei, F. R. Schmidt and D. Cremers,
Geometrically Consistent Elastic Matching of 3D Shapes: A Linear Programming Solution,
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C2] M. Aubry, U. Schlickewei and D. Cremers,
Pose-Consistent 3D Shape Segmentation Based on a Quantum Mechanical Feature Descriptor,

[C3] T. Schoenemann, S. Masnou and D. Cremers,
On a linear programming approach to the discrete Willmore boundary value problem and generalizations,

[C4] E. Strekalovskiy and D. Cremers,
Total Variation for Cyclic Structures: Convex Relaxation and Efficient Minimization,

[C5] B. Goldluecke and D. Cremers,
Introducing Total Curvature for Image Processing,
*IEEE International Conference on Computer Vision (ICCV)*, 2011.
[C6] E. Strekalovskiy, B. Goldluecke and D. Cremers,  
**Tight Convex Relaxations for Vector-Valued Labeling Problems**,  
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C7] M. Aubry, K. Kolev, B. Goldluecke and D. Cremers,  
**Decoupling Photometry and Geometry in Dense Variational Camera Calibration**,  
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C8] E. Strekalovskiy and D. Cremers,  
**Generalized Ordering Constraints for Multilabel Optimization**,  
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

**Towards a benchmark for RGB-D SLAM evaluation**,  

[C10] C. Nieuwenhuis, E. Toeppe and D. Cremers,  
**Space-Varying Color Distributions for Interactive Multiregion Segmentation: Discrete versus Continuous Approaches**,  

[C11] M. Klodt and D. Cremers,  
**A Convex Framework for Image Segmentation with Moment Constraints**,  
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C12] M. Aubry, U. Schlickewei and D. Cremers,  
**The Wave Kernel Signature: A Quantum Mechanical Approach To Shape Analysis**,  
*IEEE International Conference on Computer Vision (ICCV) - Workshop on Dynamic Shape Capture and Analysis (4DMOD)*, 2011.

[C13] F. Steinbruecker, J. Sturm and D. Cremers,  
**Real-Time Visual Odometry from Dense RGB-D Images**,  
*Workshop on Live Dense Reconstruction with Moving Cameras at the Intl. Conf. on Computer Vision (ICCV)*, 2011.

[C14] M. Schikora, M.Oispuu, W. Koch and D. Cremers,  
**Multiple Source Localization Based on Biased Bearings Using the Intensity Filter - Approach and Experimental Results**,  

[C15] S. Madhogaria, M. Schikora, W. Koch and D. Cremers,  
**Pixel-based Classification Method for Detecting Unhealthy Regions in Leaf Images**,  
*6th IEEE ISIF Workshop on Sensor Data Fusion: Trends, Solutions, Applications (SDF)*, Berlin, Germany, September 2011.
Author: Cremers

List of Publications

[C16] M. Schikora, W. Koch, R.L. Streit and D. Cremers,  
Sequential Monte Carlo Method for the iFilter,  
14th International Conference on Information Fusion (FUSION), Chicago, IL, USA, July 2011.

[C17] M. Schikora, W. Koch and D. Cremers,  
Multi-object tracking via high accuracy optical flow and finite set statistics,  
International Conference on Acoustics, Speech and Signal Processing (ICASSP), Prag, Czech Republic, Mai 2011.

[C18] E. Toeppe, M. R. Oswald, D. Cremers and C. Rother,  
Silhouette-Based Variational Methods for Single View Reconstruction,  

[C19] M. R. Oswald, E. Toeppe, C. Nieuwenhuis and D. Cremers,  
A Survey on Geometry Recovery from a Single Image with Focus on Curved Object Reconstruction,  

2010  
Journal Articles

[J1] T. Pock, D. Cremers, H. Bischof and A. Chambolle,  
Global Solutions of Variational Models with Convex Regularization,  

[J2] T. Schoenemann and D. Cremers,  
A Combinatorial Solution for Model-based Image Segmentation and Real-time Tracking,  

Books

Video Processing and Computational Video,  
Springer 2010.

Book Chapters

[BC1] A. Chambolle, V. Caselles, D. Cremers, M. Novaga and T. Pock,  
An Introduction to Total Variation for Image Analysis,  

Conference and Workshop Papers

[C1] M. Schikora, A. Schikora, K.-H. Kogel, W. Koch and D. Cremers,  
Probabilistic Classification of Disease Symptoms caused by Salmonella on Arabidopsis Plants,  
5th IEEE ISIF Workshop on Sensor Data Fusion: Trends, Solutions, Applications (SDF), Leipzig, Germany, September 2010.
[C2] M. Schikora, D. Bender, D. Cremers and W. Koch,
*Passive Multi-Object Localization and Tracking Using Bearing Data,*

[C3] M. Schikora, D. Bender, W. Koch and D. Cremers,
*Multi-target multi-sensor localization and tracking using passive antenna and optical sensors on UAVs,*

[C4] E. Toeppe, M. R. Oswald, D. Cremers and C. Rother,
*Image-based 3D Modeling via Cheeger Sets,*
*Asian Conference on Computer Vision,* Queenstown, New Zealand, 53-64, nov 2010, Received Honorable Mention Award.

[C5] J. Stühmer, S. Gumhold and D. Cremers,
*Real-Time Dense Geometry from a Handheld Camera,*
*Pattern Recognition (Proc. DAGM),* Darmstadt, Germany, 11-20, September 2010.

[C6] J. Stühmer, S. Gumhold and D. Cremers,
*Parallel Generalized Thresholding Scheme for Live Dense Geometry from a Handheld Camera,*
*ECCV Workshop on Computer Vision on GPUs (CVGPU),* Heraklion, Greece, September 2010.

[C7] B. Goldluecke and D. Cremers,
*An Approach to Vectorial Total Variation based on Geometric Measure Theory,*
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR),* 2010.

[C8] B. Goldluecke and D. Cremers,
*Convex Relaxation for Multilabel Problems with Product Label Spaces,*
*European Conference on Computer Vision (ECCV),* 2010.

2009

Journal Articles

[J1] T. Brox and D. Cremers,
*On local region models and a statistical interpretation of the piecewise smooth Mumford-Shah functional,*

[J2] T. Brox, B. Rosenhahn, J. Gall and D. Cremers,
*Combined region- and motion-based 3D tracking of rigid and articulated objects,*

[J3] K. Kolev, M. Klodt, T. Brox and D. Cremers,
*Continuous Global Optimization in Multiview 3D Reconstruction,*

*B-Spline Modeling of Road Surfaces with an Application to Free Space Estimation,*
*Transactions on Intelligent Transportation Systems, 10(4):* 572-583, 2009.
**Books**

[B1] E. D. Cremers, Y. Boykov, A. Blake and F. R. Schmidt,  
*Energy Minimization Methods for Computer Vision and Pattern Recognition (EMMCVPR)*,  
Springer 2009.

*Statistical and Geometrical Approaches to Visual Motion Analysis*,  
Springer 2009.

**Conference and Workshop Papers**

[C1] M. R. Oswald, E. Toeppe, K. Kolev and D. Cremers,  
*Non-Parametric Single View Reconstruction of Curved Objects using Convex Optimization*,  
*Pattern Recognition (Proc. DAGM)*, Jena, Germany, 171-180, September 2009, Received a DAGM Paper Award.

[C2] F. R. Schmidt and D. Cremers,  
*A Closed-Form Solution for Image Sequence Segmentation with Dynamical Shape Priors*,  
*Pattern Recognition (Proc. DAGM)*, Jena, Germany, September 2009.

[C3] F. R. Schmidt, E. Toeppe and D. Cremers,  
*Efficient Planar Graph Cuts with Applications in Computer Vision*,  
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Miami, Florida, 351-356, jun 2009, Received a CVPR Doctoral Spotlight Award.

[C4] T. Pock, A. Chambolle, H. Bischof and D. Cremers,  
*A Convex Relaxation Approach for Computing Minimal Partitions*,  

[C5] A. Wedel, C. Rabe, A. Meissner, U. Franke and D. Cremers,  
*Detection and Segmentation of Independently Moving Objects from Dense Scene Flow*,  

[C6] B. Goldluecke and D. Cremers,  
*A Superresolution Framework for High-Accuracy Multiview Reconstruction*,  
*Pattern Recognition (Proc. DAGM)*, Jena, Germany, 2009, Received DAGM Best Paper Award.

[C7] B. Goldluecke and D. Cremers,  
*Superresolution Texture Maps for Multiview Reconstruction*,  

[C8] A. Sellent, M. Eisemann, B. Goldluecke, T. Pock, D. Cremers and M. Magnor,  
*Variational Optical Flow from Alternate Exposure Images*,  
[C9] T. Pock, D. Cremers, H. Bischof and A. Chambolle,
An Algorithm for Minimizing the Piecewise Smooth Mumford-Shah Functional,

[C10] A. Wedel, D. Cremers, T. Pock and H. Bischof,
Structure- and Motion-adaptive Regularization for High Accuracy Optic Flow,

[C11] T. Schoenemann, F. Kahl and D. Cremers,
Curvature Regularity for Region-based Image Segmentation and Inpainting: A Linear Programming Relaxation,

[C12] T. Windheuser, T. Schoenemann and D. Cremers,
Beyond Connecting the Dots: A Polynomial-time Algorithm for Segmentation and Boundary Estimation with Imprecise User Input,

[C13] F. Steinbruecker, T. Pock and D. Cremers,
Large Displacement Optical Flow Computation without Warping,

[C14] D. Mitzel, T. Pock, T. Schoenemann and D. Cremers,
Video Super Resolution using Duality Based TV-L1 Optical Flow,
*Pattern Recognition (Proc. DAGM)*, Jena, Germany, 2009.

[C15] F. Steinbruecker, T. Pock and D. Cremers,
Advanced Data Terms for Variational Optic Flow Estimation,

2008

Journal Articles

[J1] T. Brox, O. Kleinschmidt and D. Cremers,
Efficient Nonlocal Means for Denoising of Textural Patterns,

[J2] D. Cremers,
Nonlinear Dynamical Shape Priors for Level Set Segmentation,

[J3] H. Jin, D. Cremers, D. Wang, A. Yezzi, E. Prados and S. Soatto,
3-D Reconstruction of Shaded Objects from Multiple Images Under Unknown Illumination,

Conference and Workshop Papers

[C1] T. Schoenemann, F. R. Schmidt and D. Cremers,
Image Segmentation with Elastic Shape Priors via Global Geodesics in Product Spaces,
[C2] T. Pock, T. Schoenemann, G. Graber, H. Bischof and D. Cremers, 
A Convex Formulation of Continuous Multi-Label Problems, 
European Conference on Computer Vision (ECCV), Marseille, France, October 2008.

[C3] A. Wedel, C. Rabe, T. Vaudrey, T. Brox, U. Franke and D. Cremers, 
Efficient Dense Scene Flow from Sparse or Dense Stereo Data, 
European Conference on Computer Vision (ECCV), Marseille, France, October 2008.

[C4] A. Wedel, T. Pock, J. Braun, U. Franke and D. Cremers, 
Duality TV-L1 Flow with Fundamental Matrix Prior, 

[C5] M. Klodt, T. Schoenemann, K. Kolev, M. Schikora and D. Cremers, 
An Experimental Comparison of Discrete and Continuous Shape Optimization Methods, 
European Conference on Computer Vision (ECCV), Marseille, France, October 2008.

[C6] A. Wedel, T. Pock, C. Zach, D. Cremers and H. Bischof, 
An Improved Algorithm for TV-L1 Optical Flow, 

[C7] W. Trobin, T. Pock, D. Cremers and H. Bischof, 
An Unbiased Second-Order Prior for High-Accuracy Motion Estimation, 
Pattern Recognition (Proc. DAGM), Munich, Germany, Springer, LNCS, jun 2008.

[C8] D. Cremers, F. R. Schmidt and F. Barthel, 
Shape Priors in Variational Image Segmentation: Convexity, Lipschitz Continuity and Globally Optimal Solutions, 

Markerless Motion Capture of Man-Machine Interaction, 

[C10] T. Schoenemann and D. Cremers, 
Matching Non-rigidly Deformable Shapes Across Images: A Globally Optimal Solution, 

[C11] T. Schoenemann and D. Cremers, 
Globally Optimal Shape-based Tracking in Real-time, 

[C12] T. Schoenemann and D. Cremers, 
High Resolution Motion Layer Decomposition using Dual-space Graph Cuts, 
Author: Cremers

List of Publications

[C13] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,
Modeling and Tracking Line-Constrained Mechanical Systems,

[C14] O. Kleinschmidt, T. Brox and D. Cremers,
Nonlocal texture filtering with efficient tree structures and invariant patch similarity measures,
Int. Workshop on Local and Nonlocal Approximation, Lausanne, Switzerland, aug 2008.

Technical Reports

[R1] A. Chambolle, D. Cremers and T. Pock,
A Convex Approach for Computing Minimal Partitions,

2007

Journal Articles

[J1] D. Cremers,
Computer Lernen Sehen,

[J2] D. Cremers, M. Rousson and R. Deriche,
A review of statistical approaches to level set segmentation: integrating color, texture, motion and shape,

Books

[B1] E. S.-C. Zhu, A. Yuille, D. Cremers and Y. Wang,
Energy Minimization Methods for Computer Vision and Pattern Recognition (EMMCVPR),

Book Chapters

[BC1] T. Brox, B. Rosenhahn and D. Cremers,
Contours, optic flow, and prior knowledge: cues for capturing 3D human motion in videos,

[BC2] D. Cremers and M. Rousson,
Efficient kernel density estimation of shape and intensity priors for level set segmentation,

Conference and Workshop Papers

[C1] K. Kolev, M. Klodt, T. Brox and D. Cremers,
Propagated Photoconsistency and Convexity in Variational Multiview 3D Reconstruction,
[C2] K. Kolev, M. Klodt, T. Brox, S. Esedoglu and D. Cremers,
Continuous Global Optimization in Multiview 3D Reconstruction,
_Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCV-PR)_,

[C3] T. Brox, B. Rosenhahn, D. Cremers and H.-P. Seidel,
Nonparametric density estimation with adaptive anisotropic kernels for human motion tracking,

[C4] T. Schoenemann and D. Cremers,
Globally Optimal Image Segmentation with an Elastic Shape Prior,
_IEEE International Conference on Computer Vision (ICCV)_,
Rio de Janeiro, Brazil, oct 2007.

[C5] T. Schoenemann and D. Cremers,
Introducing Curvature into Globally Optimal Image Segmentation: Minimum Ratio Cycles on Product Graphs,
_IEEE International Conference on Computer Vision (ICCV)_,
Rio de Janeiro, Brazil, oct 2007.

[C6] F. R. Schmidt, D Farin and D. Cremers,
Fast Matching of Planar Shapes in Sub-cubic Runtime,
_IEEE International Conference on Computer Vision (ICCV)_,
Rio de Janeiro, Brazil, oct 2007.

[C7] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov,
Intrinsic Mean for Semimetrical Shape Retrieval via Graph Cuts,
_Pattern Recognition (Proc. DAGM)_,

[C8] A. Wedel, T. Schoenemann, T. Brox and D. Cremers,
WarpCut - Fast obstacle segmentation in monocular video,
_Pattern Recognition (Proc. DAGM)_,

[C9] C. Schmaltz, B. Rosenhahn, T. Brox, D. Cremers, J. Weickert, L. Wietzke and G. Sommer,
Occlusion Modeling by Tracking Multiple Objects,
_Pattern Recognition (Proc. DAGM)_,

[C10] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,
Online smoothing for markerless motion capture,
_Pattern Recognition (Proc. DAGM)_,

[C11] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov,
Efficient Shape Matching via Graph Cuts,
_Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCV-PR)_,

[C12] D. Cremers,
Nonlinear Dynamical Shape Priors for Level Set Segmentation,
_IEEE Conference on Computer Vision and Pattern Recognition (CVPR)_,
2007.
Author: Cremers  List of Publications

[C13] T. Brox and D. Cremers,
On the Statistical Interpretation of the Piecewise Smooth Mumford-Shah Functional,

[C14] T. Brox and D. Cremers,
Iterated Nonlocal Means for Texture Restoration,

Region-based Pose Tracking,

[C16] D. Cremers, O. Fluck, M. Rousson and S. Aharon,
A probabilistic level set formulation for interactive organ segmentation,

Technical Reports

[R1] T. Brox, O. Kleinschmidt and D. Cremers,
Iterated and Efficient Nonlocal Means for Denoising of Textural Patterns,

2006
Journal Articles

[J1] D. Cremers,
Dynamical statistical shape priors for level set based tracking,

[J2] D. Cremers, S. J. Osher and S. Soatto,
Kernel density estimation and intrinsic alignment for shape priors in level set segmentation,

[J3] D. Cremers, N. Sochen and C. Schnörr,
A multiphase dynamic labeling model for variational recognition-driven image segmentation,

[J4] S. Manay, D. Cremers, B.-W. Hong, A. Yezzi and S. Soatto,
Integral invariants for shape matching,

Book Chapters
Author: Cremers

List of Publications

[BC1] D. Cremers and T. Kohlberger,
Probabilistic kernel PCA and its application to statistical shape modeling and inference,

[BC2] S. Manay, D. Cremers, B. W. Hong, A. Yezzi and S. Soatto,
Integral Invariants and Shape Matching,
Statistical analysis of shapes (modeling and simulation in science, engineering and technology), Birkhauser, 137-167, May 2006.

Conference and Workshop Papers

[C1] F. R. Schmidt, M. Clausen and D. Cremers,
Shape Matching by Variational Computation of Geodesics on a Manifold,

[C2] T. Schoenemann and D. Cremers,
Near Real-time Motion Segmentation using Graph Cuts,

[C3] T. Brox, B. Rosenhahn, U. Kersting and D. Cremers,
Nonparametric density estimation for human pose tracking,

[C4] K. Kolev, T. Brox and D. Cremers,
Robust variational segmentation of 3D objects from multiple views,

[C5] A. Wedel, U. Franke, J. Klappstein, T. Brox and D. Cremers,
Realtime depth estimation and obstacle detection from monocular video,

[C6] Y. Boykov, V. Kolmogorov, D. Cremers and A. Delong,
An integral solution to surface evolution PDEs via Geo-Cuts,
A. Leonardis, H. Bischof and A. Pinz(Eds.), European Conference on Computer Vision (ECCV), Graz, Austria, Springer, LNCS, Vol. 3953, 409-422, may 2006.

[C7] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,
A comparison of shape matching methods for contour based pose estimation,

[C8] T. Brox, B. Rosenhahn, D. Cremers and H.-P. Seidel,
High accuracy optical flow serves 3-D pose tracking: exploiting contour and flow based constraints,
Author: Cremers

List of Publications

[C9] D. Cremers and L. Grady,
Statistical priors for combinatorial optimization: efficient solutions via Graph Cuts,

[C10] D. Cremers, C. Guetter and C. Xu,
Nonparametric priors on the space of joint intensity distributions for non-rigid multi-modal image registration,

[C11] O. Fluck, S. Aharon, D. Cremers and M. Rousson,
GPU histogram computation,
ACM SIGGRAPH posters and demos, 2006.

[C12] T. Kohlberger, D. Cremers, M. Rousson and R. Ramaraj,
4D shape priors for level set segmentation of the left myocardium in SPECT sequences,

2005
Journal Articles

[J1] D. Cremers and S. Soatto,
Motion Competition: A variational framework for piecewise parametric motion segmentation,

Book Chapters

[BC1] M. Bergtholdt, D. Cremers and C. Schnörr,
Variational segmentation with shape priors,

Conference and Workshop Papers

[C1] D. Cremers and G. Funka-Lea,
Dynamical statistical shape priors for level set based tracking,

[C2] S. Manay, D. Cremers, A. J. Yezzi and S. Soatto,
One-shot integral invariant shape priors for variational segmentation,

[C3] M. Rousson and D. Cremers,
Efficient kernel density estimation of shape and intensity priors for level set segmentation,
2004
Conference and Workshop Papers

[C1] D. Cremers,
Bayesian Approaches to Motion-based Image and Video Segmentation,

[C2] D. Cremers, S. J. Osher and S. Soatto,
Kernel density estimation and intrinsic alignment for knowledge-driven segmentation: Teaching level sets to walk,

[C3] D. Cremers, N. Sochen and C. Schnörr,
Multiphase dynamic labeling for variational recognition-driven image segmentation,

[C4] H. Jin, D. Cremers, A. Yezzi and S. Soatto,
Shedding light on stereoscopic segmentation,

2003
Journal Articles

[J1] D. Cremers, T. Kohlberger and C. Schnörr,
Shape Statistics in Kernel Space for Variational Image Segmentation,

[J2] D. Cremers and C. Schnörr,
Statistical shape knowledge in variational motion segmentation,

[J3] J. Keuchel, C. Schnörr, C. Schellewald and D. Cremers,
Binary partitioning, perceptual grouping, and restoration with semidefinite programming,

Conference and Workshop Papers

[C1] D. Cremers,
A variational framework for image segmentation combining motion estimation and shape regularization,

[C2] D. Cremers,
A multiphase level set framework for variational motion segmentation,
[C3] D. Cremers and S. Soatto,
A pseudo-distance for shape priors in level set segmentation,

[C4] D. Cremers and S. Soatto,
Variational space-time motion segmentation,

[C5] D. Cremers, N. Sochen and C. Schnörr,
Towards Recognition-based Variational Segmentation Using Shape Priors and Dynamic Labeling,

[C6] D. Cremers and A. L. Yuille,
A generative model based approach to motion segmentation,

[C7] G. Doretto, D. Cremers, P. Favaro and S. Soatto,
Dynamic texture segmentation,

2002
Journal Articles

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

[J2] D. Cremers, F. Tischhäuser, J. Weickert and C. Schnörr,
Diffusion Snakes: Introducing statistical shape knowledge into the Mumford–Shah functional,

Conference and Workshop Papers

[C1] J. Keuchel, C. Schnoerr, C. Schellewald and D. Cremers,
Unsupervised Image Partitioning with Semidefinite Programming,

[C2] D. Cremers, T. Kohlberger and C. Schnörr,
Nonlinear shape statistics in Mumford–Shah based segmentation,
[C3] D. Cremers and C. Schnörr,
Motion Competition: variational integration of motion segmentation and shape regularization,

[C4] D. Cremers and C. Schnörr,
Statistical shape knowledge in variational motion segmentation,
A. Pece, Y. N. Wu and R. Larsen(Eds.), 1st Internat. Workshop on Generative-Model-Based Vision, Copenhagen, Univ. of Copenhagen, June, 2 2002.

PhDThesis

[PhD1] D. Cremers,
Statistical shape knowledge in variational image segmentation,
Department of Mathematics and Computer Science, University of Mannheim, Germany, 2002.

2001
Conference and Workshop Papers

[C1] D. Cremers, T. Kohlberger and C. Schnörr,
Nonlinear shape statistics via kernel spaces,

[C2] J. Keuchel, C. Schellewald, D. Cremers and C. Schnoerr,
Convex Relaxations for Binary Image Partitioning and Perceptual Grouping,
Radig, B., Florczyk and S.(Eds.), Pattern Recognition, Munich, Germany, Springer, LNCS, Vol. 2191, 353-360, Sept. 2001, Received a DAGM Paper Award.

[C3] D. Cremers, C. Schnörr and J. Weickert,
Diffusion Snakes: Combining statistical shape knowledge and image information in a variational framework,
N. Paragios(Ed.), IEEE First Int. Workshop on Variational and Level Set Methods, Vancouver, 137-144, 2001, Best Student Paper Award.

2000
Conference and Workshop Papers

[C1] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Learning of translation invariant shape knowledge for steering diffusion snakes,

[C2] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Diffusion Snakes using statistical shape knowledge,

Technical Reports
**Author: Cremers**

**List of Publications**

[R1] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,

*Diffusion Snakes using statistical shape knowledge*,

**1999**

**Journal Articles**

[J1] D. Cremers and A. Mielke,

*Flow equations for the Héon-Heiles Hamiltonian*,