[J1] E. Rodola, L. Cosmo, M. M. Bronstein, A. Torsello and D. Cremers, 
Partial Functional Correspondence, 

[J2] L. Cosmo, E. Rodola, A. Albarelli, F. Memoli and D. Cremers, 
Consistent Partial Matching of Shape Collections via Sparse Modeling, 

[J3] D. Boscaini, J. Masci, E. Rodola, M. M. Bronstein and D. Cremers, 
Anisotropic Diffusion Descriptors, 

[J4] F. Bergamasco, A. Albarelli, L. Cosmo, E. Rodola and A. Torsello, 
An Accurate and Robust Artificial Marker based on Cyclic Codes, 

Bias and Precision Analysis of Diffusional Kurtosis Imaging for Different Acquisition Schemes, 
Magnetic Resonance in Medicine, 2016.

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.

[J7] O. Litany, E. Rodola, A. M. Bronstein, M. M. Bronstein and D. Cremers, 
Non-Rigid Puzzles, 

[J8] M. Strumia, F. R. Schmidt, C. Anastasopoulos, C. Granziera, G. Krueger and T. Brox, 
White Matter MS-Lesion Segmentation Using a Geometric Brain Model, 

[J9] Vestner, M., Litman, R., Bronstein, A., Rodola, E., Cremers and D., 
Bayesian Inference of Bijective Non-Rigid Shape Correspondence, 

[C1] N.Mayer, E.Ilg, P.Husser, P.Fischer, D.Cremers, A.Dosovitskiy and T.Brox, 
A Large Dataset to Train Convolutional Networks for Disparity, Optical Flow, and Scene Flow Estimation, 
IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2016.

Model-Free Novelty-Based Diffusion MRI, 
IEEE International Symposium on Biomedical Imaging (ISBI), Prague, Czech Republic, April 2016.
[C3] V. Usenko, J. Engel, J. Stueckler and D. Cremers,
Direct Visual-Inertial Odometry with Stereo Cameras,
*Int. Conf. on Robotics and Automation*, May 2016.

[C4] A. Narr, R. Triebel and D. Cremers,
Stream-based Active Learning for Efficient and Adaptive Classification of 3D Objects,
*Int. Conf. on Robotics and Automation*, May 2016.

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

[C6] L. Ma, C. Kerl, J. Stueckler and D. Cremers,
CPA-SLAM: Consistent Plane-Model Alignment for Direct RGB-D SLAM,
*Int. Conf. on Robotics and Automation*, May 2016.

[C7] J. Engel, V. Usenko and D. Cremers,
A Photometrically Calibrated Benchmark For Monocular Visual Odometry,

[C8] J. Engel, V. Koltun and D. Cremers,
Direct Sparse Odometry,

[C9] E. Laude, T. M"ollenhoff, M. Moeller, J. Lellmann and D. Cremers,
Sublabel-Accurate Convex Relaxation of Vectorial Multilabel Energies,
*European Conference on Computer Vision (ECCV)*, October 2016.

[C10] 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.

[C11] C. Hazirbas, L. Ma, C. Domokos and D. Cremers,
FuseNet: Incorporating Depth into Semantic Segmentation via Fusion-based CNN Architecture,
*Asian Conference on Computer Vision*, 2016.

[C12] T. Windheuser and D. Cremers,
A Convex Solution to Spatially-Regularized Correspondence Problems,
*European Conference on Computer Vision (ECCV)*, October 2016.

[J1] A. Albarelli, E. Rodola and A. Torsello,
Fast and Accurate Surface Alignment through an Isometry-Enforcing Game,

[J2] J. Diebold, C. Nieuwenhuis and D. Cremers,
Midrange Geometric Interactions for Semantic Segmentation,

[J3] J. Diebold, S. Tari and D. Cremers,
The Role of Diffusion in Figure Hunt Games,
[J4] S. Madhogaria, P. M. Baggenstoss, M. Schikora, W. Koch and D. Cremers, 
Car detection by fusion of HOG and causal MRF, 

[J5] M. Klodt, K. Herzog, R. Tpfer and D. Cremers, 
Field phenotyping of grapevine growth using dense stereo reconstruction, 

[J6] J. Stueckler and S. Behnke, 
Efficient Dense Rigid-Body Motion Segmentation and Estimation in RGB-D Video, 

NimbRo Explorer: Semi-Autonomous Exploration and Mobile Manipulation in Rough Terrain, 

[J8] D. Droeschel, M. Nieuwenhuisen, M. Beul, J. Stueckler, D. Holz and S. Behnke, 
Multi-Layered Mapping and Navigation for Autonomous Micro Aerial Vehicles, 

[J9] E. Rodola, A. Albarelli, D. Cremers and A. Torsello, 
A Simple and Effective Relevance-based Point Sampling for 3D Shapes, 

[J10] R. Mecca, E. Rodola and D. Cremers, 
Realistic Photometric Stereo Using Partial Differential Irradiance Equation Ratios, 

[J11] T. Möllenhoff, E. Strekalovskiy, M. Möller and D. Cremers, 
The Primal-Dual Hybrid Gradient Method for Semiconvex Splittings, 

[J12] Hugo Grimmett, Rudolph Triebel, Rohan Paul and Ingmar Posner, 
Introspective classification for robot perception, 

[J13] T. Whelan, L. Ma, E. Bondarev, P. de With and J. McDonald, 
Incremental and Batch Planar Simplification of Dense Point Cloud Maps, 

Skeleton-Based Recognition of Shapes in Images via Longest Path Matching, 
[C1] M. Moeller, 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. Milner and D. Cremers,
Interactive Multi-label Segmentation of RGB-D Images,
Scale Space and Variational Methods in Computer Vision (SSVM), 2015.

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

[C4] A. Kanezaki, E. Rodola and T. Harada,
RGB-D [Graph matching gakushuu wo mochiita RGB-D gazou kara no but-
tai kenshutsu] - Learning graph matching for object detection from RGB-D
images,
20 - Robotics Symposia (RS), Karuizawa, Japan, March 2015.

[C5] T. Möllenhoff, E. Strekalovskiy, M. Möller and D. Cremers,
Low Rank Priors for Color Image Regularization,
Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCV-
PR), 2015.

[C6] 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.

[C7] J. Stühmer and D. Cremers,
A Fast Projection Method for Connectivity Constraints in Image Segmentati-
on,
X.-C. Tai, E. Bae, T. F. Chan and M. Lysaker(Eds.), Energy Minimization Methods in
Computer Vision and Pattern Recognition (EMMCVPR), LNCS, 2015.

[C8] R. Mecca, E. Rodola and D. Cremers,
Analysis of Surface Parametrizations for Modern Photometric Stereo Mode-
ing,
International Conference on Quality Control by Artificial Vision (QCAV), 2015.

[C9] 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.

[C10] D. Mund, R. Triebel and D. Cremers,
Active Online Confidence Boosting for Efficient Object Classification,

Liu, V. Golkov, M. Czisch, P. Saemann, M.I. Menzel and B.H. Menze,
Using Diffusion and Structural MRI for the Automated Segmentation of Multiple
Sclerosis Lesions,
International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting,
2015.


[C23] M. Jaimez, M. Souiai, J. Stueckler, J. Gonzalez-Jimenez and D. Cremers,
Motion Cooperation: Smooth Piece-Wise Rigid Scene Flow from RGB-D Images,

[C24] 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.

[C25] 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.

[C26] 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.

[C27] 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.

[C28] N. Nagaraja, F. R. Schmidt and T. Brox,
Video Segmentation with Just a Few Strokes,
IEEE International Conference on Computer Vision (ICCV), Santiago, Chile, Dec 2015.

[C29] J. Stühmer, S. Nowozin, A. Fitzgibbon, R. Szeliski, T. Perry, S. Acharya, D. Cremers and J. Shotton,
Model-Based Tracking at 300Hz using Raw Time-of-Flight Observations,
IEEE International Conference on Computer Vision (ICCV), Santiago, Chile, 2015.

q-Space Deep Learning for Twelve-Fold Shorter and Model-Free Diffusion MRI Scans,
Medical Image Computing and Computer Assisted Intervention (MICCAI), Munich, Germany, October 2015.

[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. Rota Bulo and D. Cremers, 
Robust Region Detection via Consensus Segmentation of Deformable Shapes, 

[J5] M. Schadler, J. Stueckler and S. Behnke, 
Rough Terrain Mapping and Navigation using a Continuously Rotating 2D Laser Scanner, 

[J6] J. Stueckler, B. Waldvogel, H. Schulz and S. Behnke, 
Dense Real-Time Mapping of Object-Class Semantics from RGB-D Video, 

[J7] J. Stueckler and S. Behnke, 
Multi-Resolution Surfel Maps for Efficient Dense 3D Modeling and Tracking, 

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

Novel Acquisition Scheme for Diffusion Kurtosis Imaging Based on Compressed-Sensing Accelerated DSI Yielding Superior Image Quality, 

Total Variation-Regularized Compressed Sensing Reconstruction for Multi-Shell Diffusion Kurtosis Imaging, 

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, 
Joint Super-Resolution Using Only One Anisotropic Low-Resolution Image per q-Space Coordinate,

[C7] D. Weikersdorfer, D. B. Adrian, D. Cremers and J. Conrad,
Event-based 3D SLAM with a depth-augmented dynamic vision sensor,
Int. Conf. on Robotics and Automation, 2014.

[C8] F. Steinbruecker, J. Sturm and D. Cremers,
Volumetric 3D Mapping in Real-Time on a CPU,
Int. Conf. on Robotics and Automation, Hongkong, China, 2014.

[C9] E. Rodola, S. Rota Bulo, T. Windheuser, M. Vestner and D. Cremers,
Dense Non-Rigid Shape Correspondence Using Random Forests,

[C10] Y. Kee, M. Souiai, D. Cremers and J. Kim,
Sequential Convex Relaxation for Mutual-Information-Based Unsupervised Figure-Ground Segmentation,

[C11] H. Alvarez, L.M. Paz, J. Sturm and D. Cremers,
Collision Avoidance for Quadrotors with a Monocular Camera,

[C12] J. Engel, T. Schöps and D. Cremers,
LSD-SLAM: Large-Scale Direct Monocular SLAM,
European Conference on Computer Vision (ECCV), September 2014, Oral Presentation.

[C13] T. Schöps, J. Engel and D. Cremers,
Semi-Dense Visual Odometry for AR on a Smartphone,
International Symposium on Mixed and Augmented Reality, September 2014, Best Short Paper Award.

[C14] T. Windheuser, M. Vestner, E. Rodola, R. Triebel and D. Cremers,
Optimal Intrinsic Descriptors for Non-Rigid Shape Analysis,
British Machine Vision Conference (BMVC), 2014.

[C15] 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.

[C16] 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.

[C17] 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, September 2014.
[C18] M. R. Oswald and D. Cremers,  
Surface Normal Integration for Convex Space-time Multi-view Reconstruction,  
British Machine Vision Conference (BMVC), 2014.

[C19] C. Nieuwenhuis, S. Hawe, M. Kleinsteuber and D. Cremers,  
Co-Sparse Textural Similarity for Interactive Segmentation,  
European Conference on Computer Vision (ECCV), 2014.

[C20] M. R. Oswald, J. Stühmer and D. Cremers,  
Generalized Connectivity Constraints for Spatio-temporal 3D Reconstruction,  

[C21] E. Strekalovskiy and D. Cremers,  
Real-Time Minimization of the Piecewise Smooth Mumford-Shah Functional,  

[C22] A. Kanezaki, E. Rodola and T. Harada,  
RGB-D [RGB-D gazou kara no buttai kenshutsu ni okeru taiou tenshuugou ruijido no gakushuu],  

[C23] A. Kanezaki, E. Rodola, D. Cremers and T. Harada,  
[Taiou tenshuugou ruijido gakushuu wo mochiita goutai-higoutai buttai kenshutsu],  

[C24] 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 (NOR-DIA), 2014.

[C25] O. Dunkley, J. Engel, J. Sturm and D. Cremers,  
Visual-Inertial Navigation for a Camera-Equipped 25g Nano-Quadrotor,  

[C26] 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.

[C27] S. Debnath, S. S. Baishya, R. Triebel, V. Dutt and D. Cremers,  
Environment-adaptive Learning: How Clustering Helps to Obtain Good Training Data,  

[C28] A. Kanezaki, E. Rodola, D. Cremers and T. Harada,  
Learning Similarities for Rigid and Non-Rigid Object Detection,  
International Conference on 3D Vision (3DV), 2014.

[C29] D. Bender, M. Schikora, J. Sturm and D. Cremers,  
INS-Camera Calibration without Ground Control Points,  
9th IEEE ISIF Workshop on Sensor Data Fusion: Trends, Solutions, Applications (SDF), 2014.
[C30] C. Kerl, M. Souiai, J. Sturm and D. Cremers,
Towards Illumination-invariant 3D Reconstruction using ToF RGB-D Cameras,
International Conference on 3D Vision (3DV), 2014.

[C31] J. Stueckler and S. Behnke,
Adaptive Tool-Use Strategies for Anthropomorphic Service Robots,

[C32] D. Droeschel, J. Stueckler and S. Behnke,
Local Multi-Resolution Surfel Grids for MAV Motion Estimation and 3D Mapping,

[C33] J. Stueckler, A. Gutt and S. Behnke,
Combining the Strengths of Sparse Interest Point and Dense Image Registration for RGB-D Odometry,
Proc. of the Joint 45th International Symposium on Robotics (ISR) and 8th German Conference on Robotics (ROBOTIK), to appear, June 2014.

[C34] J. Stueckler and S. Behnke,
Efficient deformable registration of multi-resolution surfel maps for object manipulation skill transfer,

[C35] D. Droeschel, J. Stueckler and S. Behnke,
Local multi-resolution representation for 6D motion estimation and mapping with a continuously rotating 3D laser scanner,
Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA), 5221-5226, May 2014.

[C36] M. Schwarz, J. Stueckler and S. Behnke,
Mobile Teleoperation Interfaces with Adjustable Autonomy for Personal Service Robots,

[C37] F. R. Schmidt, T. Windheuser, U. Schlickewei and D. Cremers,
Dense Elastic 3D Shape Matching,

[PhD1] J. Stueckler,
Efficient Dense Registration, Segmentation, and Modeling Methods for RGB-D Environment Perception,
Faculty of Mathematics and Natural Sciences, University of Bonn, Germany, 2014.
Computer Vision Group Munich

List of Publications

[M1] K. Knese,
Realizing Online (Self-)Collision Avoidance Based on Inequality Constraints with Hierarchical Inverse Kinematics,
Technical University of Munich, Germany, July 2014.

[M2] Caner Hazirbas,
Feature Selection and Learning for Semantic Segmentation,
Technical University Munich, Germany, June 2014.

[M3] Thomas Schöps,
Semi-dense visual SLAM on mobile devices,
Technical University Munich, Germany, May 2014.

[M4] M. Shelley,
Monocular Visual Inertial Odometry on a Mobile Device,
Technical University Munich, Germany, Aug. 2014.

[M5] Oliver Montague Welton Dunkley,
Visual Inertial Control of a Nano-Quadrotor,
Technical University Munich, Germany, Sept. 2014.

[J1] E. Rodola, A. Albarelli, F. Bergamasco and A. Torsello,
A Scale Independent Selection Process for 3D Object Recognition in Cluttered Scenes,

[J2] A. Torsello, A. Albarelli and E. Rodola,
Stable and Fast Techniques for Unambiguous Compound Phase Coding,

[J3] C. Nieuwenhuis and D. Cremers,
Spatially Varying Color Distributions for Interactive Multi-Label Segmentation,

[J4] C. Nieuwenhuis, E. Toepp and D. Cremers,
A Survey and Comparison of Discrete and Continuous Multi-label Optimization Approaches for the Potts Model,

[J5] B. Goldhauce, E. Strekalovskiy and D. Cremers,
Tight Convex Relaxations for Vector-Valued Labeling,

[J6] F. Endres, J. Hess, J. Sturm, D. Cremers and W. Burgard,
3D Mapping with an RGB-D Camera,

[J7] Liu, Z., Beetz, M., Cremers, D., Gall, J., Li, W., Pangeric, D., Sturm, J., Tai and Y.-W.,
Introduction to the special issue on visual understanding and applications with RGB-D cameras,
[B1] J. Sturm,
Approaches to Probabilistic Model Learning for Mobile Manipulation Robots,
Springer 2013.

Special Issue: Energy Optimization Methods,
Springer 2013.

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

[BC2] M. Pelillo, S. Rota Bulo, A. Torsello, A. Albarelli and E. Rodola,
A Game-Theoretic Approach to Pairwise Clustering and Matching,

[C1] Bergbauer, Julia, Tari and Sibel,
Wimmelbild Analysis with Approximate Curvature Coding Distance Images,

[C2] Bergbauer, Julia, Tari and Sibel,
Top-down visual search in Wimmelbild,

[C3] F. Bergamasco, A. Albarelli, E. Rodola and A. Torsello,
Can a fully unconstrained imaging model be applied effectively to central cameras?,

[C4] M. Souiai, C. Nieuwenhuis, E. Strekalovskiy and D. Cremers,
Convex Optimization for Scene Understanding,
ICCV Workshop on Graphical Models for Scene Understanding, 2013.

[C5] J. Bergbauer, C. Nieuwenhuis, M. Souiai and D. Cremers,
Proximity Priors for Variational Semantic Segmentation and Recognition,
ICCV Workshop on Graphical Models for Scene Understanding, 2013.

Effects of Low-Rank Constraints, Line-Process Denoising, and q-Space Compressed Sensing on Diffusion MR Image Reconstruction and Kurtosis Tensor Estimation,

[C7] 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.
[C8] 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.

SNR-dependent Quality Assessment of Compressed-Sensing-Accelerated Diffusion Spectrum Imaging Using a Fiber Crossing Phantom, 

Phase Sensitive Reconstruction in Diffusion Spectrum Imaging Enabling Velocity Encoding and Unbiased Noise Distribution, 

Noise Reduction in Accelerated Diffusion Spectrum Imaging through Integration of SENSE Reconstruction into Joint Reconstruction in Combination with q-Space Compressed Sensing, 

[C12] C. Kerl, J. Sturm and D. Cremers, 
Robust Odometry Estimation for RGB-D Cameras, 
Int. Conf. on Robotics and Automation, May 2013, Best Vision Paper Award - Finalist.

[C13] 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.

Toward Automated Driving in Cities using Close-to-Market Sensors, 

Knowing When We Don’t Know: Introspective Classification for Mission-Critical Decision Making, 

[C16] D. Weikersdorfer, A. Schick and D. Cremers, 
Depth-adaptive Supervoxels for RGB-D Video Segmentation, 
[C17] R. Triebel, H. Grimmett and I. Posner,  
Confidence Boosting: Improving the Introspectiveness of a Boosted Classifier for Efficient Learning,  

Introspective Active Learning for Scalable Semantic Mapping,  

[C19] E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers,  
Real-Time Camera Tracking and 3D Reconstruction Using Signed Distance Functions,  

[C20] 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.

[C21] J. Sturm and W. Burgard,  
Learning Probabilistic Models for Mobile Manipulation Robots,  
*Proc. of the International Joint Conference on Artificial Intelligence (IJCAI), Track on Best papers in Sister Conferences*, 2013.

[C22] M. Souiai, E. Strekalovskiy, C. Nieuwenhuis and D. Cremers,  
A Co-occurrence Prior for Continuous Multi-Label Optimization,  

[C23] F. Stangl, M. Souiai and D. Cremers,  
Performance Evaluation of Narrow Band Methods for Variational Stereo,  
*35th German Conference on Pattern Recognition (GCPR)*, 2013.

[C24] T. Möllenhoff, C. Nieuwenhuis, E. Toeppe and D. Cremers,  
Efficient Convex Optimization for Minimal Partition Problems with Volume Constraints,  

[C25] C. Kerl, J. Sturm and D. Cremers,  
Dense Visual SLAM for RGB-D Cameras,  

[C26] T. Naseer, J. Sturm and D. Cremers,  
FollowMe: Person Following and Gesture Recognition with a Quadrocopter,  

[C27] 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.
[C28] 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.

[C29] 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.

[C30] 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.

[C31] E. Rodola, T. Harada, Y. Kuniyoshi and D. Cremers,  
Efficient Shape Matching using Vector Extrapolation,  

[C32] 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.

[C33] 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.

[C34] 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.

[C35] C. Nieuwenhuis, E. Strekalovskiy and D. Cremers,  
Proportion Priors for Image Sequence Segmentation,  
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

[C36] J. Stühmer, P. Schröder and D. Cremers,  
Tree Shape Priors with Connectivity Constraints using Convex Relaxation on General Graphs,  

[C37] 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.

[C38] 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.

[C39] 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.
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 IE-EE. Int. Conf. on Intelligent Robots and Systems (IROS), Nov. 2013.

R. Triebel, H. Grimmett, R. Paul and I. Posner,
Driven Learning for Driving: How Introspection Improves Semantic Mapping,
The International Symposium on Robotics Research (ISRR), 2013.

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

M. Schadler, J. Stueckler and S. Behnke,
Multi-resolution surfel mapping and real-time pose tracking using a continuously rotating 2D laser scanner,

J. Stueckler and S. Behnke,
Efficient Dense 3D Rigid-Body Motion Segmentation in RGB-D Video,

M. McElhone, J. Stueckler and S. Behnke,
Joint detection and pose tracking of multi-resolution surfel models in RGB-D,

T. Fiolka, J. Stueckler, D. A. Klein, D. Schulz and S. Behnke,
Distinctive 3D surface entropy features for place recognition.,

A. Berner, Jun Li, D. Holz, J. Stueckler, S. Behnke and R. Klein,
Combining contour and shape primitives for object detection and pose estimation of prefabricated parts,

J. Stueckler and S. Behnke,
Hierarchical Object Discovery and Dense Modelling From Motion Cues in RGB-D Video,

M. Nieuwenhuisen, D. Droeschel, D. Holz, J. Stueckler, A. Berner, Jun Li, R. Klein and S. Behnke,
Mobile bin picking with an anthropomorphic service robot,

L. Gorelick, F. R. Schmidt and Y. Boykov,
Fast Trust Region for Segmentation,
[C51] L. Ma, T. Whelan, E. Bondarev, P. H. N. de With and J. McDonald,
Planar simplification and texturing of dense point cloud maps,

[M1] R. Maier,
Out-of-Core Bundle Adjustment for 3D Workpiece Reconstruction,
Technische Universit"at M"unchen, Germany, September 2013.

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

[J1] A. Albarelli, E. Rodola and A. Torsello,
Imposing Semi-local Geometric Constraints for Accurate Correspondences Selection in Structure from Motion: a Game-Theoretic Perspective,

[J2] A. Chambolle, D. Cremers and T. Pock,
A Convex Approach to Minimal Partitions,

[J3] T. Schoenemann and D. Cremers,
A Coding Cost Framework for Super-resolution Motion Layer Decomposition,

[J4] T. Schoenemann, F. Kahl, S. Masnou and D. Cremers,
A linear framework for region-based image segmentation and inpainting involving curvature penalization,

[J5] D. Cremers,
Optimal Solutions for Semantic Image Decomposition,

Image segmentation with one shape prior - A template-based formulation,

[J7] B. Goldluecke, E. Strekalovskiy and D. Cremers,
The Natural Total Variation Which Arises from Geometric Measure Theory,

[J8] U. Schlickewei,
On the Andr"e motive of certain irreducible symplectic varieties,

[J9] 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,

[J11] D. Cremers and E. Strekalovskiy,
**Total Cyclic Variation and Generalizations**, 

[J12] J. Stueckler, R. Steffens, D. Holz and S. Behnke,
Efficient 3D Object Perception and Grasp Planning for Mobile Manipulation in Domestic Environments,

RoboCup@Home: Demonstrating Everyday Manipulation Skills in RoboCup@Home,

[BC1] Sturm, J., Plagemann, C., Burgard and W.,
Body Schema Learning,

[BC2] M. Schikora, W. Koch, R. L. Streit and D. Cremers,
A Sequential Monte Carlo Method for Multi-Target Tracking with the Intensity Filter,

[C1] E. Rodola, A.M. Bronstein, A. Albarelli, F. Bergamasco and A. Torsello,
A game-theoretic approach to deformable shape matching,

[C2] F. Endres, J. Hess, N. Engelhard, J. Sturm, D. Cremers and W. Burgard,
An Evaluation of the RGB-D SLAM System,

[C3] T. Ruehr, J. Sturm, D. Pangercic, M. Beetz and D. Cremers,
A Generalized Framework for Opening Doors and Drawers in Kitchen Environments,

[C4] Dominik Joho AND Gian Diego Tipaldi AND Nikolas Engelhard AND Cyrill Stachniss AND Wolfram Burgard,
Nonparametric Bayesian Models for Unsupervised Scene Analysis and Reconstruction,
[C5] M. Schikora, A. Gning, L. Mihaylova, D. Cremers, W. Koch and R. Streit, 
Box-Particle Intensity Filter, 

[C6] 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.

[C7] L. Zhang, J. Sturm, D. Cremers and D. Lee, 
Real-Time Human Motion Tracking using Multiple Depth Cameras, 

[C8] E. Strekalovskiy, C. Nieuwenhuis and D. Cremers, 
Nonmetric Priors for Continuous Multilabel Optimization, 

[C9] T. Windheuser, H. Ishikawa and D. Cremers, 
Generalized Roof Duality for Multi-Label Optimization: Optimal Lower Bounds and Persistency, 
European Conference on Computer Vision (ECCV), Firenze, Italy, October 2012.

[C10] T. Windheuser, H. Ishikawa and D. Cremers, 
QPBO [QPBO arugorizumu no tachika ni yoru hiretsu mojura enerug saishka], 
Meeting on Image Recognition and Understanding, Fukuoka, Japan, August 2012.

[C11] M. R. Oswald, E. Toeppe and D. Cremers, 
Fast and Globally Optimal Single View Reconstruction of Curved Objects, 
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Providence, Rhode Island, 534-541, June 2012.

[C12] 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, June 2012.

[C13] J. Engel, J. Sturm and D. Cremers, 
Camera-Based Navigation of a Low-Cost Quadrocopter, 

[C14] J. Sturm, N. Engelhard, F. Endres, W. Burgard and D. Cremers, 
A Benchmark for the Evaluation of RGB-D SLAM Systems, 

[C15] J. Engel, J. Sturm and D. Cremers, 
Accurate Figure Flying with a Quadrocopter Using Onboard Visual and Inertial Sensing, 

[C16] J. Sturm, W. Burgard and D. Cremers, 
Evaluating Egomotion and Structure-from-Motion Approaches Using the TUM RGB-D Benchmark, 
Evaluation of DSI Imaging with Compressed Sensing under the Presence of Different Noise Levels on a Diffusion Phantom, 

Comparison of Diffusion Kurtosis Tensor Estimation Methods in an Advanced Quality Assessment Framework, 

[C19] N. Ufer, M. Souiai and D. Cremers, 
Wehrli 2.0: An Algorithm for Tidying up Art, 

Semantic Categorization of Outdoor Scenes with Uncertainty Estimates using Multi-Class Gaussian Process Classification, 

Parsing Outdoor Scenes from Streamed 3D Laser Data Using Online Clustering and Incremental Belief Updates, 

[C22] U. Hubert, J. Stueckler and S. Behnke, 
Bayesian calibration of the hand-eye kinematics of an anthropomorphic robot, 
Proc. of the 12th IEEE-RAS Int. Conf. on Humanoid Robots (Humanoids), 618-624, November 2012.

[C23] J. Stueckler, N. Biresev and S. Behnke, 
Semantic mapping using object-class segmentation of RGB-D images, 
Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS), 3005-3010, October 2012.

[C24] J. Stueckler and S. Behnke, 
Integrating depth and color cues for dense multi-resolution scene mapping using RGB-D cameras, 
Proc. of the IEEE Int. Conf. on Multisensor Fusion and Integration for Intelligent Systems (MFI), 162-167, September 2012.

[C25] S. Muszynski, J. Stueckler and S. Behnke, 
Adjustable autonomy for mobile teleoperation of personal service robots, 
Proc. of the IEEE Int. Symp. on Robot and Human Interactive Communication, 933-940, September 2012.

[C26] T. Fiolka, J. Stueckler, D. A. Klein, D. Schulz and S. Behnke, 
SURE: Surface Entropy for Distinctive 3D Features, 
[C27] G. M. Garca, D. A. Klein, J. Stueckler, S. Frintrop and A. B. Cremers,
Adaptive Multi-cue 3D Tracking of Arbitrary Objects,

[C28] J. Stueckler and S. Behnke,

[C29] M. Nieuwenhuisen, J. Stueckler, A. Berner, R. Klein and S. Behnke,
Shape-Primitive Based Object Recognition and Grasping,

[C30] J. Kl, J. Stueckler and S. Behnke,
Efficient Mobile Robot Navigation using 3D Surfel Grid Maps,

[C31] J. Stueckler and S. Behnke,
Robust Real-Time Registration of RGB-D Images using Multi-Resolution Surfel Representations,

[C32] F. R. Schmidt and Y. Boykov,
Hausdorff Distance Constraint for Multi-Surface Segmentation,

[C33] L. Gorelick, F. R. Schmidt, Y. Boykov, A. Delong and A. Ward,
Segmentation with non-linear regional constraints via line-search cuts,

[PhD1] K. Kolev,
Convexity in Image-Based 3D Surface Reconstruction,
Department of Computer Science, Technical University Munich, Germany, January 2012.

[M1] M. Brandl,
Face recognition with wave kernel signatures using a depth camera,
Technical University of Munich, Germany, Aug. 2012.

[M2] C. Kerl,
Odometry from RGB-D Cameras for Autonomous Quadrocopters,
Technical University Munich, Germany, Nov. 2012.

[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,

[J6] S. Chitta, J. Sturm, M. Piccoli and W. Burgard,
Tactile Sensing for Mobile Manipulation,
*IEEE Transactions on Robotics (T-RO)*, 2011.

A Variational Approach to Vesicle Membrane Reconstruction from Fluorescence Imaging,

[J8] J. Sturm, C. Stachniss and W. Burgard,
A Probabilistic Framework for Learning Kinematic Models of Articulated Objects,
*Journal on Artificial Intelligence Research (JAIR)*, 41: 477-626, August 2011.

[J9] J. Kybic and C. Nieuwenhuis,
Bootstrap Optical Flow and Uncertainty Measure,

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

Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR),
Springer 2011.

[BC1] D. Cremers, T. Pock, K. Kolev and A. Chambolle,
Convex Relaxation Techniques for Segmentation, Stereo and Multiview Reconstruction,
D. Cremers,
*Image Segmentation with Shape Priors: Explicit Versus Implicit Representations*,

A. Torsello, E. Rodola and A. Albarelli,
*Multiview Registration via Graph Diffusion of Dual Quaternions*,
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2441-2448, 2011.

F. Bergamasco, A. Albarelli, E. Rodola and A. Torsello,
*RUNE-Tag: a High Accuracy Fiducial Marker with Strong Occlusion Resilience*,
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 113-120, 2011.

A. Albarelli, E. Rodola and A. Torsello,
*A Non-Cooperative Game for 3D Object Recognition in Cluttered Scenes*,

A. Torsello, E. Rodola and A. Albarelli,
*Sampling Relevant Points for Surface Registration*,

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.

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

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

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

B. Goldluecke and D. Cremers,
*Introducing Total Curvature for Image Processing*,
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

E. Strekalovskiy, B. Goldluecke and D. Cremers,
*Tight Convex Relaxations for Vector-Valued Labeling Problems*,
*IEEE International Conference on Computer Vision (ICCV)*, 2011.
[C11] 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.

[C12] E. Strekalovskiy and D. Cremers, 
Generalized Ordering Constraints for Multilabel Optimization, 
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C13] J. Hess, J. Sturm and W. Burgard, 
Learning the State Transition Model to Efficiently Clean Surfaces with Mobile Manipulation Robots, 
*Proc. of the Workshop on Manipulation under Uncertainty at the IEEE Int. Conf. on Robotics and Automation (ICRA)*, Shanghai, China, May 2011.

[C14] N. Engelhard, F. Endres, J. Hess, J. Sturm and W. Burgard, 
Real-time 3D visual SLAM with a hand-held camera, 

Towards a benchmark for RGB-D SLAM evaluation, 

[C16] C. Nieuwenhuis, E. Toeppe and D. Cremers, 
Space-Varying Color Distributions for Interactive Multiregion Segmentation: Discrete versus Continuous Approaches, 

[C17] M. Klodt and D. Cremers, 
A Convex Framework for Image Segmentation with Moment Constraints, 
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C18] 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.

[C19] 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.

Mobile Manipulation of Kitchen Containers, 
*Proc. of the IROS’11 Workshop on Results, Challenges and Lessons Learned in Advancing Robots with a Common Platform*, San Francisco, CA, USA, 2011.
[C21] M. Schikora, M. Oispuu, W. Koch and D. Cremers,
Multiple Source Localization Based on Biased Bearings Using the Intensity Filter - Approach and Experimental Results,
4th IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing, San Juan, Puerto Rico, December 2011.

[C22] 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.

[C23] 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.

[C24] M. Oispuu and M. Schikora,
Multiple Emitter Localization Using a Realistic Airborne Array Sensor,
14th International Conference on Information Fusion (FUSION), Chicago, IL, USA, July 2011.

[C25] 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.

[C26] E. Toeppe, M. R. Oswald, D. Cremers and C. Rother,
Silhouette-Based Variational Methods for Single View Reconstruction,

[C27] 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,

[C28] J. Shin, R. Triebel and R. Siegwart,
Unsupervised 3D Object Discovery and Categorization for Mobile Robots,

[C29] J. Maye, R. Triebel, L. Spinello and R. Siegwart,
Bayesian On-line Learning of Driving Behaviors,
Int. Conf. on Robotics and Automation, 2011.

[C30] B. Oehler, J. Stueckler, J. Welle, D. Schulz and S. Behnke,
Efficient Multi-resolution Plane Segmentation of 3D Point Clouds,
[C31] J. Stueckler and S. Behnke,
Following human guidance to cooperatively carry a large object,
Proc. of the 11th IEEE-RAS Int. Conf. on Humanoid Robots (Humanoids), 218-223, October 2011.

[C32] J. Stueckler, R. Steffens, D. Holz and S. Behnke,
Real-Time 3D Perception and Efficient Grasp Planning for Everyday Manipulation Tasks,
Proc. of the European Conf. on Mobile Robots (ECMR), 177-182, 2011.

[C33] J. Stueckler and S. Behnke,
Compliant Task-Space Control with Back-Drivable Servo Actuators,
Rfer, Thomas, Mayer, Norbert Michael, Savage, Jesus, Saranli and Uluc(Eds.), RoboCup,

[C34] D. Droeschel, J. Stueckler, D. Holz and S. Behnke,
Towards joint attention for a domestic service robot - person awareness and gesture recognition using Time-of-Flight cameras,
Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA), 1205-1210, May 2011.

[C35] J. Stueckler and S. Behnke,
Interest point detection in depth images through scale-space surface analysis,
Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA), 3568-3574, May 2011.

[C36] D. Droeschel, J. Stueckler and S. Behnke,
Learning to Interpret Pointing Gestures with a Time-of-flight Camera,

[C37] F. R. Schmidt, H. Ackermann and B. Rosenhahn,
Multilinear Model Estimation with L2-Regularization,

[C38] A. Delong, L. Gorelick, F. R. Schmidt, O. Veksler and Y. Boykov,
Interactive Segmentation with Super-Labels,

[PhD1] J. Sturm,
Approaches to Probabilistic Model Learning for Mobile Manipulation Robots,
University of Freiburg, Germany, May 2011, Received the Artificial Intelligence Dissertation Award 2011 (ECCAI) and the Wolfgang-Genter-Award 2011 (University of Freiburg); Finalist at the Georges-Giralt-Award 2012 (EURON); Selected for the Best Paper Track at IJCAI 2013.

[M1] J. Engel,
Autonomous Camera-Based Navigation of a Quadrocopter,
Technical University Munich, Germany, Dec. 2011, Distinguished with the SIEMENS award for best Master’s Thesis 2012.
[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,  

[J3] U. Schlickewei,  
The Hodge conjecture for self-products of certain K3 surfaces,  

[J4] U. Schlickewei,  
Stability of tautological vector bundles on Hilbert squares of surfaces,  

[J5] L. Spinello, R. Triebel and R. Siegwart,  
Multiclass Multimodal Detection and Tracking in Urban Environments,  

Video Processing and Computational Video,  
Springer 2010.  

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

[C1] A. Albarelli, E. Rodola and A. Torsello,  
Robust Camera Calibration using Inaccurate Targets,  

[C2] E. Rodola, A. Albarelli and A. Torsello,  
A Game-Theoretic Approach to Robust Selection of Multi-View Point Correspondence,  
20th International Conference on Pattern Recognition (ICPR), 57-60, 2010.  

[C3] A. Albarelli, E. Rodola, A. Cavallarin and A. Torsello,  
Robust Figure Extraction on Textured Background: a Game-Theoretic Approach,  

[C4] E. Rodola, A. Albarelli and A. Torsello,  
A Game-Theoretic Approach to the Enforcement of Global Consistency in Multi-View Feature Matching,  
[C5] A. Albarelli, E. Rodola and A. Torsello,
A Game-Theoretic Approach to Fine Surface Registration without Initial Motion Estimation,

[C6] A. Albarelli, E. Rodola and A. Torsello,
Robust Game-Theoretic Inlier Selection for Bundle Adjustment,
*5th International Symposium on 3D Data Processing, Visualization and Transmission (3DPVT)*, 2010, *Best Student Paper Award*.

[C7] A. Albarelli, E. Rodola and A. Torsello,
Loosely Distinctive Features for Robust Surface Alignment,

[C8] 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.

[C9] M. Schikora, D. Bender, D. Cremers and W. Koch,
Passive Multi-Object Localization and Tracking Using Bearing Data,

[C10] M. Schikora, D. Bender, W. Koch and D. Cremers,
Multi-target multi-sensor localization and tracking using passive antenna and optical sensors on UAVs,

[C11] 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, November 2010, *Received Honorable Mention Award*.

[C12] K. Kolev, T. Pock and D. Cremers,
Anisotropic Minimal Surfaces Integrating Photoconsistency and Normal Information for Multiview Stereo,
*European Conference on Computer Vision (ECCV)*, Heraklion, Greece, September 2010.

[C13] 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.

[C14] 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.

[C15] 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.
[C16] B. Goldluecke and D. Cremers,
Convex Relaxation for Multilabel Problems with Product Label Spaces,

[C17] C. Nieuwenhuis, D. Kondermann and C. Garbe,
Complex Motion Models for Simple Optical Flow Estimation,

[C18] C. Nieuwenhuis, B. Berkels, M. Rumpf and D. Cremers,
Interactive Motion Segmentation,

[C19] J. Sturm, K. Konolige, C. Stachniss and W. Burgard,
3D Pose Estimation, Tracking and Model Learning of Articulated Objects from Dense Depth Video using Projected Texture Stereo,

[C20] J. Sturm, K. Konolige, C. Stachniss and W. Burgard,
Vision-based Detection for Learning Articulation Models of Cabinet Doors and Drawers in Household Environments,

[C21] S. Chitta, M. Piccoli and J. Sturm,
Tactile Object Class and Internal State Recognition for Mobile Manipulation,

[C22] J. Sturm, A. Jain, C. Stachniss, C. C. Kemp and W. Burgard,
Operating Articulated Objects Based on Experience,

[C23] R. Kaestner, N. Engelhard, R. Triebel and R. Siegwart,
A Bayesian Approach to Learning 3D Representations of Dynamic Environments,

[C24] L. Spinello, R. Triebel, D. Vasquez, K. Arras and R Siegwart,
Exploiting Repetitive Object Patterns for Model Compression and Completion,

Segmentation and Unsupervised Part-based Discovery of Repetitive Objects,

[C26] L. Spinello, K. O. Arras, R. Triebel and R. Siegwart,
A Layered Approach to People Detection in 3D Range Data,
*special track on Physically Grounded AI of AAAI*, 2010.
[C27] J. Shin, R. Triebel and R. Siegwart,  
**Unsupervised Discovery of Repetitive Objects**,  
*Int. Conf. on Robotics and Automation*, 2010.

[C28] J. Maye, L. Spinello, R. Triebel and R. Siegwart,  
**Inferring the Semantics of Direction Signs in Public Places**,  
*Int. Conf. on Robotics and Automation*, 2010.

[C29] K. Grve, J. Stueckler and S. Behnke,  
**Improving imitated grasping motions through interactive expected deviation learning**,  
*Proc. of the 10th IEEE-RAS Int. Conf. on Humanoid Robots (Humanoids)*, 397-404, December 2010.

[C30] J. Stueckler and S. Behnke,  
**Combining depth and color cues for scale- and viewpoint-invariant object segmentation and recognition using Random Forests**,  
*Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS)*, 4566-4571, October 2010.

[C31] J. Stueckler and S. Behnke,  
**Improving People Awareness of Service Robots by Semantic Scene Knowledge**,  

[C32] D. Holz, R. Schnabel, D. Droeschel, J. Stueckler and S. Behnke,  
**Towards Semantic Scene Analysis with Time-of-flight Cameras**,  

[C33] H. Schulz, W. Liu, J. Stueckler and S. Behnke,  
**Utilizing the Structure of Field Lines for Efficient Soccer Robot Localization**,  

[C34] K. Grve, J. Stueckler and S. Behnke,  
**Learning Motion Skills from Expert Demonstrations and Own Experience using Gaussian Process Regression**,  

[C35] M. Nieuwenhuisen, J. Stueckler and S. Behnke,  
**Intuitive Multimodal Interaction for Domestic Service Robots**,  

[C36] M. Nieuwenhuisen, J. Stueckler and S. Behnke,  
**Improving indoor navigation of autonomous robots by an explicit representation of doors**,  
*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 4895-4901, May 2010.

[C37] D. Droeschel, D. Holz, J. Stueckler and S. Behnke,  
**Using Time-of-Flight cameras with active gaze control for 3D collision avoidance**,  
*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 4035-4040, May 2010.
Computer Vision Group Munich  List of Publications

[M1] M. Souiai,  
Newton Methods for Total Variation Minimization,  
Computer Vision Group, TU Munich, Germany, June 2010.

[M2] J. Stühmer,  
Ein Variationsansatz zur Schätzung von dichten Tiefenkarten im Kontext des Structure-from-Motion,  
TU Dresden, Germany, July 2010.

[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,  

[J5] U. Schlickewei,  
Hodge classes on self-products of K3 surfaces,  

[J6] E. Strekalovskiy,  
Folgen von Höhenfußpunktdreiecken und ihre Grenzpunkte,  

[J7] J. Sturm, C. Plagemann and W. Burgard,  
Body schema learning for robotic manipulators from visual self-perception,  

[J8] J. Sturm, and A. Visser,  
An appearance-based visual compass for mobile robots,  

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

Statistical and Geometrical Approaches to Visual Motion Analysis,  
Springer 2009.
[C1] A. Albarelli, E. Rodola, S. Rota Bulo and A. Torsello, 
Fast 3D surface reconstruction by unambiguous compound phase coding, 

[C2] 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.

[C3] 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.

[C4] 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, June 2009, Received a CVPR Doctoral Spotlight Award.

[C5] T. Pock, A. Chambolle, H. Bischof and D. Cremers, 
A Convex Relaxation Approach for Computing Minimal Partitions, 

[C6] K. Kolev and D. Cremers, 
Continuous Ratio Optimization via Convex Relaxation with Applications to Multiview 3D Reconstruction, 

[C7] A. Wedel, C. Rabe, A. Meissner, U. Franke and D. Cremers, 
Detection and Segmentation of Independently Moving Objects from Dense Scene Flow, 

[C8] 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.

[C9] B. Goldluecke and D. Cremers, 
Superresolution Texture Maps for Multiview Reconstruction, 
IEEE International Conference on Computer Vision (ICCV), Kyoto, Japan, 2009.

[C10] A. Sellent, M. Eisemann, B. Goldluecke, T. Pock, D. Cremers and M. Magnor, 
Variational Optical Flow from Alternate Exposure Images, 

[C11] T. Pock, D. Cremers, H. Bischof and A. Chambolle, 
An Algorithm for Minimizing the Piecewise Smooth Mumford-Shah Functional, 
IEEE International Conference on Computer Vision (ICCV), Kyoto, Japan, 2009.
[C12] A. Wedel, D. Cremers, T. Pock and H. Bischof, 
Structure- and Motion-adaptive Regularization for High Accuracy Optic Flow, 

[C13] T. Schoenemann, F. Kahl and D. Cremers, 
Curvature Regularity for Region-based Image Segmentation and Inpainting: 
A Linear Programming Relaxation, 

[C14] T. Windheuser, T. Schoenemann and D. Cremers, 
Beyond Connecting the Dots: A Polynomial-time Algorithm for Segmentation 
and Boundary Estimation with Imprecise User Input, 

[C15] F. Steinbruecker, T. Pock and D. Cremers, 
Large Displacement Optical Flow Computation without Warping, 

[C16] 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.

[C17] B. Berkels, C. Nieuwenhuis, C. Garbe and M. Rumpf, 
Reconstructing Optical Flow Fields by Motion Inpainting, 

[C18] C. Eppner, J. Sturm, M. Bennewitz, C. Stachniss and W. Burgard, 
Imitation Learning with Generalized Task Descriptions, 
*Int. Conf. on Robotics and Automation*, Kobe, Japan, May 2009.

[C19] H. Schulz, L. Ott, J. Sturm and W. Burgard, 
Learning Kinematics from Direct Self-Observation Using Nearest-Neighbor Methods, 
*Proc. of the German Workshop on Robotics*, June 2009.

Towards Understanding Articulated Objects, 

Learning Kinematic Models for Articulated Objects, 
*Proc. of the International Joint Conference on Artificial Intelligence (IJCAI)*, July 2009.

[C22] D. Meyer-Delius, J. Sturm and W. Burgard, 
Regression-Based Online Situation Recognition for Vehicular Traffic Scenarios, 

[C23] A. Schneider, J. Sturm, C. Stachniss, M. Reisert, H. Burkhardt and W. Burgard, 
Object Identification with Tactile Sensors Using Bag-of-Features, 
[C24] F. Steinbruecker, T. Pock and D. Cremers,
Advanced Data Terms for Variational Optic Flow Estimation,

[C25] M. Schikora and B. Romba,
A Framework for Multiple Radar and Multiple 2D/3D Camera Fusion,
4th IEEE ISIF Workshop on Sensor Data Fusion: Trends, Solutions, Applications (SDF),
Luebeck, Germany, October 2009.

[C26] M. Schikora,
Global Optimal Multiple Object Detection using the Fusion of Shape and Color Information,
7th International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR), Bonn, Germany, August 2009.

[C27] M. Schikora, M. Hge, E. Ruthotto and K. Wild,
A Convex Formulation for Color Image Segmentation in the Context of Passive Emitter Localization,
12th International Conference on Information Fusion (FUSION), Seattle, WA, USA, July 2009.

[C28] L. Spinello, A. Macho, R. Triebel and R. Siegwart,
Detecting Pedestrians at Very Small Scales,

[C29] L. Spinello, R. Triebel and R. Siegwart,
Multiclass Multimodal Detection and Tracking in Urban Environments,
Proc. of Field and Service Robotics (FSR), 2009.

Medial Features for Superpixel Segmentation,

[C31] J. Stueckler and S. Behnke,
Integrating indoor mobility, object manipulation, and intuitive interaction for domestic service tasks,
Proc. of the IEEE-RAS Int. Conf. on Humanoid Robots (Humanoids), 506-513, December 2009.

[C32] J. Stueckler, M. Schreiber and S. Behnke,
Dynamaid, an Anthropomorphic Robot for Research on Domestic Service Applications,

[PhD1] C. Nieuwenhuis,
Restoration and Prostprocessing of Optical Flows,
Faculty of Mathematics and Computer Science, Heidelberg University, Germany, July 2009.
[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, 

Influence of non-random incorporation of Mn ions on the magnetotransport properties of Ga$_1-x$Mn$_x$As alloys, 

Tailoring the magnetoresistance of MnAs/GaAs:Mn granular hybrid nanostructures, 

Monte Carlo localization in outdoor terrains using multilevel surface maps, 

[J7] S. Behnke and J. Stueckler, 
Hierarchical Reactive Control for Humanoid Soccer Robots, 

[C1] T. Schoenemann, F. R. Schmidt and D. Cremers, 
Image Segmentation with Elastic Shape Priors via Global Geodesics in Product Spaces, 

[C2] M. Unger, T. Pock, D. Cremers and H. Bischof, 
TVSeg - Interactive Total Variation Based Image Segmentation, 

[C3] T. Pock, T. Schoenemann, G. Graber, H. Bischof and D. Cremers, 
A Convex Formulation of Continuous Multi-Label Problems, 

[C4] W. Trobin, T. Pock, D. Cremers and H. Bischof, 
Continuous Energy Minimization via Repeated Binary Fusion, 

[C5] K. Kolev and D. Cremers, 
Integration of Multiview Stereo and Silhouettes via Convex Functionals on Convex Domains, 
**Efficient Dense Scene Flow from Sparse or Dense Stereo Data,**

[C7] A. Wedel, T. Pock, J. Braun, U. Franke and D. Cremers, 
**Duality TV-L1 Flow with Fundamental Matrix Prior,**

[C8] M. Klodt, T. Schoenemann, K. Kolev, M. Schikora and D. Cremers, 
**An Experimental Comparison of Discrete and Continuous Shape Optimization Methods,**

[C9] M. Grabner, T. Pock and Tobias Gross, 
**Automatic Differentiation for GPU-Accelerated 2D/3D Registration,**
*5th International Conference on Automatic Differentiation*, 2008.

[C10] M. Unger, T. Pock and H. Bischof, 
**Continuous Globally Optimal Image Segmentation with Local Constraints,**

[C11] T. Pock, M. Unger, D. Cremers and H. Bischof, 
**Fast and Exact Solution of Total Variation Models on the GPU,**

[C12] A. Wedel, T. Pock, C. Zach, D. Cremers and H. Bischof, 
**An Improved Algorithm for TV-L1 Optical Flow,**

[C13] W. Trobin, T. Pock, D. Cremers and H. Bischof, 
**An Unbiased Second-Order Prior for High-Accuracy Motion Estimation,**

[C14] 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,**

[C16] T. Schoenemann and D. Cremers, 
**Matching Non-rigidly Deformable Shapes Across Images: A Globally Optimal Solution,**

[C17] T. Schoenemann and D. Cremers, 
**Globally Optimal Shape-based Tracking in Real-time,**
[C18] T. Schoenemann and D. Cremers,  
High Resolution Motion Layer Decomposition using Dual-space Graph Cuts,  

[C19] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,  
Modeling and Tracking Line-Constrained Mechanical Systems,  

[C20] 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, August 2008.

[C21] C. Nieuwenhuis, R. Mester and C. Garbe,  
A Statistical Confidence Measure for Optical Flows,  

[C22] B. Andres, C. Nieuwenhuis, D. Kondermann, U. Köthe, R. Hamprecht and C. Garbe,  
On Errors-In-Variables Regression with Arbitrary Covariance and its Application to Optical Flow Estimation,  
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Anchorage, Alaska, 1-6, June 2008.

[C23] C. Nieuwenhuis, D. Kondermann and C. Garbe,  
Postprocessing of Optical Flows via Surface Measures and Motion Inpainting,  

[C24] J. Sturm, C. Plagemann and W. Burgard,  
Unsupervised Body Scheme Learning through Self-Perception,  

[C25] J. Sturm, C. Plagemann and W. Burgard,  
Adaptive Body Scheme Models for Robust Robotic Manipulation,  

[C26] J. Sturm, C. Plagemann and W. Burgard,  
Body Scheme Learning and Life-Long Adaptation for Robotic Manipulation,  

[C27] Kondermann, D., Nieuwenhuys, C., Berthe, A., Kertzschker, U., Garbe and C.,  
Motion Estimation Based on a Temporal Model of Fluid Flows,  

[C28] L. Spinello, R. Triebel and R. Siegwart,  
Multimodal Detection and Tracking of Pedestrians in Urban Environments with Explicit Ground Plane Extraction,  
[C29] L. Spinello, R. Triebel and R. Siegwart,
Multimodal People Detection and Tracking in Crowded Scenes,

[C30] J. Stueckler, H. Schulz and S. Behnke,
In-lane Localization in Road Networks using Curbs Detected in Omnidirectional Height Images,

[C31] J. Stueckler and S. Behnke,
Orthogonal wall correction for visual motion estimation,
Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA), 1-6, May 2008.

[PhD1] T. Schoenemann,
Combinatorial Solutions for Shape Optimization in Computer Vision,
Department of Computer Science, University of Bonn, Germany, 2008.

[M1] E. Toeppe,
Shape Matching mittels Graph Cuts,
University of Bonn, 2008, Awarded Best Master Thesis of the Year (Bonn Society for Computer Science).

[M2] M. R. Oswald,
Reliability Estimation Methods and their Efficient Implementation,
Universidad Tecnica Federico Santa Maria, Valparaiso, Chile, June 2008.

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

[J1] T. Pock, M. Pock and H. Bischof,
Algorithmic Differentiation: Application to Variational Problems in Computer Vision,

[J2] B. Rosenhahn, T. Brox and J. Weickert,
Three-dimensional shape knowledge for joint image segmentation and pose tracking,

[J3] Y.-J. Kim, T. Brox, W. Feiden and J. Weickert,
Fully automated segmentation and morphometrical analysis of muscle fibre images,
[J4] D. Cremers,  
*Computer Lernen Sehen*,  

[J5] D. Cremers, M. Rousson and R. Deriche,  
A review of statistical approaches to level set segmentation: integrating color, texture, motion and shape,  

[J6] B. Goldluecke, I. Ihrke, C. Linz and M. Magnor,  
Weighted Minimal Hypersurface Reconstruction,  

Quantitative modeling of the annealing-induced changes of the magnetotransport in Ga$_{1-x}$Mn$_x$As alloys,  

Supervised semantic labeling of places using information extracted from sensor data,  

[J9] P. Pfaff, R. Triebel and W. Burgard,  
An Efficient Extension to Elevation Maps for Outdoor Terrain Mapping and Loop Closing,  

[J10] H. Andreasson, R. Triebel and A. Lilienthal,  
Non-iterative Vision-based Interpolation of 3D Laser Scans,  

Energy Minimization Methods for Computer Vision and Pattern Recognition (EMMCVPR),  

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

Tracking clothed people,  

[BC3] D. Cremers and M. Rousson,  
Efficient kernel density estimation of shape and intensity priors for level set segmentation,  
[C1] Thomas Pock, Markus Grabner and Horst Bischof,
Real-time Computation of Variational Methods on Graphics Hardware,

[C2] C. Zach, T. Pock and H. Bischof,
A Duality Based Approach for Realtime TV-L1 Optical Flow,

[C3] T. Pock, M. Urschler, C. Zach, R. Beichel and H. Bischof,
A Duality Based Algorithm for TV-L1-Optical-Flow Image Registration,

[C4] C. Zach, T. Pock and H. Bischof,
A Globally Optimal Algorithm for Robust TV-L1 Range Image Integration,

[C5] T. Pock, C. Zach and H. Bischof,
Mumford-Shah Meets Stereo: Integration of Weak Depth Hypotheses,

[C6] S. Frintrop, M. Klodt and E. Rome,
A Real-time Visual Attention System Using Integral Images,
5th International Conference on Computer Vision Systems (ICVS 2007), Bielefeld, Germany, March 2007.

[C7] S. May, M. Klodt, E. Rome and R. Breithaupt,
GPU-accelerated Affordance Cueing based on Visual Attention,

[C8] K. Kolev, M. Klodt, T. Brox and D. Cremers,
Propagated Photoconsistency and Convexity in Variational Multiview 3D Reconstruction,

[C9] K. Kolev, M. Klodt, T. Brox, S. Esedoglu and D. Cremers,
Continuous Global Optimization in Multiview 3D Reconstruction,

[C10] T. Brox, B. Rosenhahn, D. Cremers and H.-P. Seidel,
Nonparametric density estimation with adaptive anisotropic kernels for human motion tracking,

[C11] 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, October 2007.
[C12] T. Schoenemann and D. Cremers,  
Introducing Curvature into Globally Optimal Image Segmentation: Minimum Ratio Cycles on Product Graphs,  

[C13] F. R. Schmidt, Dirk Farin and D. Cremers,  
Fast Matching of Planar Shapes in Sub-cubic Runtime,  

[C14] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov,  
Intrinsic Mean for Semimetrical Shape Retrieval via Graph Cuts,  

[C15] A. Wedel and U. Franke,  
Monocular Video Serves RADAR-based Emergency Braking,  
*Intelligent Vehicles*, Istanbul, Turkey, June 2007.

[C16] A. Wedel, T. Schoenemann, T. Brox and D. Cremers,  
WarpCut - Fast obstacle segmentation in monocular video,  

Occlusion Modeling by Tracking Multiple Objects,  

[C18] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,  
Online smoothing for markerless motion capture,  

[C19] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov,  
Efficient Shape Matching via Graph Cuts,  

[C20] B. Rosenhahn, T. Brox and H.-P. Seidel,  
Scaled motion dynamics for markerless motion capture,  

[C21] D. Cremers,  
Nonlinear Dynamical Shape Priors for Level Set Segmentation,  

[C22] T. Brox and D. Cremers,  
On the Statistical Interpretation of the Piecewise Smooth Mumford-Shah Functional,  
[C23] T. Brox and D. Cremers,  
Iterated Nonlocal Means for Texture Restoration,  

[C24] C. Schmaltz, B. Rosenhahn, T. Brox, D. Cremers, J. Weickert, L. Wietzke and G. Sommer,  
Region-based Pose Tracking,  

[C25] D. Cremers, O. Fluck, M. Rousson and S. Aharon,  
A probabilistic level set formulation for interactive organ segmentation,  

[C26] C. Nieuwenhuis, D. Kondermann, B. Jähne and C. Garbe,  
An Adaptive Confidence Measure for Optical Flows Based on Linear Subspace Projections,  

[C27] C. Nieuwenhuis, D. Kondermann and M. Yan,  
Blood vessel classification into arteries and veins in retinal images,  

[C28] R. Triebel, . Martinez Mozos and W. Burgard,  
Collective Classification for Labeling of Places and Objects in 2D and 3D Range Data,  

[C29] R. Kummerle, P. Pfaff, R. Triebel and W. Burgard,  
Active Monte Carlo Localization in Outdoor Terrains using Multi-Level Surface Maps,  
Fachgesprche Autonome Mobile Systeme (AMS), 2007.

[C30] R. Triebel and W. Burgard,  
Recovering the Shape of Objects in 3D Point Clouds with Partial Occlusions,  

[C31] R. Kummerle, R. Triebel, P. Pfaff, and W. Burgard,  
Monte Carlo Localization in Outdoor Terrains using Multi-Level Surface Maps,  

[C32] P. Pfaff, R. Triebel, C. Stachniss, P. Lamon, W. Burgard and R. Siegwart,  
Towards Mapping of Cities,  
Int. Conf. on Robotics and Automation, 2007.

[C33] R. Triebel, R. Schmidt, . Martinez Mozos and W. Burgard,  
Instance-based AMN Classification for Improved Object Recognition in 2D and 3D Laser Range Data,  
[C34] S. Behnke, J. Stueckler, M. Schreiber, H. Schulz, M. Bhnert and K. Meier,
Hierarchical reactive control for a team of humanoid soccer robots,
Proc. of the IEEE-RAS Int. Conf. on Humanoid Robots (Humanoids), 622-629, November 2007.

[M1] M. R. Oswald,
Concurrent Stereo Reconstruction,
Technische Universität Dresden, Germany, June 2007.

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

[J1] T. Brox and J. Weickert,
Level Set Segmentation with Multiple Regions,

[J2] T. Brox and J. Weickert,
A TV flow based local scale estimate and its application to texture discrimination,

[J3] D. Cremers,
Dynamical statistical shape priors for level set based tracking,

[J4] D. Cremers, S. J. Osher and S. Soatto,
Kernel density estimation and intrinsic alignment for shape priors in level set segmentation,

[J5] D. Cremers, N. Sochen and C. Schnörr,
A multiphase dynamic labeling model for variational recognition-driven image segmentation,

[J6] S. Manay, D. Cremers, B.-W. Hong, A. Yezzi and S. Soatto,
Integral invariants for shape matching,

[J7] N. Papenberg, A. Bruhn, T. Brox, S. Didas and J. Weickert,
Highly accurate optic flow computation with theoretically justified warping,

[J8] T. Brox, J. Weickert, B. Burgeth and P. Mrázek,
Nonlinear structure tensors,
[J9] M. Breuß, T. Brox, A. Bürgel, T. Sonar and J. Weickert,  
**Numerical aspects of TV flow,**  

**A system for marker-less motion capture,**  
*Künstliche Intelligenz*, 45-51, January 2006.

**Strong non-Arrhenius temperature dependence of the resistivity in the regime of traditional band transport,**  

**Adaptive structure tensors and their applications,**  

[BC2] D. Cremers and T. Kohlberger,  
**Probabilistic kernel PCA and its application to statistical shape modeling and inference,**  

[BC3] S. Manay, D. Cremers, B. W. Hong, A. Yezzi and S. Soatto,  
**Integral Invariants and Shape Matching,**  

[BC4] J. Weickert, A. Bruhn, T. Brox and N. Papenberg,  
**A survey on variational optic flow methods for small displacements,**  

**PDEs for tensor image processing,**  

**Diffusion filters and wavelets: What can they learn from each other?**  

[C1] T. Pock and H. Bischof,  
**A Probabilistic Multiphase Model for Variational Image Segmentation,**  
*Pattern Recognition (Proc. DAGM)*, Berlin, Germany, 71-80, September 2006.
Learning for multi-view 3D tracking in the context of particle filters,

[C3] F. R. Schmidt, M. Clausen and D. Cremers,
Shape Matching by Variational Computation of Geodesics on a Manifold,

[C4] T. Schoenemann and D. Cremers,
Near Real-time Motion Segmentation using Graph Cuts,

[C5] T. Brox, B. Rosenhahn, U. Kersting and D. Cremers,
Nonparametric density estimation for human pose tracking,

[C6] K. Kolev, T. Brox and D. Cremers,
Robust variational segmentation of 3D objects from multiple views,

[C7] A. Wedel, U. Franke, J. Klappstein, T. Brox and D. Cremers,
Realtime depth estimation and obstacle detection from monocular video,

[C8] Y. Boykov, V. Kolmogorov, D. Cremers and A. Delong,
An integral solution to surface evolution PDEs via Geo-Cuts,

[C9] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,
A comparison of shape matching methods for contour based pose estimation,

[C10] T. Brox, A. Bruhn and J. Weickert,
Variational motion segmentation with level sets,

[C11] 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,
[C12] T. Brox, Y.-J. Kim, J. Weickert and W. Feiden, 
Fully-automated analysis of muscle fiber images with combined region and 
edge based active contours, 

[C13] D. Cremers and L. Grady, 
Statistical priors for combinatorial optimization: efficient solutions via Graph 
Cuts, 

[C14] D. Cremers, C. Guetter and C. Xu, 
Nonparametric priors on the space of joint intensity distributions for non-rigid 
multi-modal image registration, 

[C15] O. Fluck, S. Aharon, D. Cremers and M. Rousson, 
_GPU histogram computation_, 
_ACM SIGGRAPH posters and demos_, 2006.

[C16] T. Kohlberger, D. Cremers, M. Rousson and R. Ramaraj, 
4D shape priors for level set segmentation of the left myocardium in SPECT 
sequences, 

[C17] C. Nieuwenhuis and M. Yan, 
Knowledge Based Image Enhancement Using Neural Networks, 

[C18] D. A. van Soest, M. de Greef, J. Sturm and A. Visser, 
Autonomous Color Learning in an Artificial Environment, 

[C19] J. Sturm, P. van Rossum and A. Visser, 
Panoramic Localization in the 4-Legged League, 

[C20] A. Visser, J. Sturm and F.C.A. Groen, 
Robot companion localization at home and in the office, 

[C21] A. Visser, P. van Rossum, J. Westra, J. Sturm, D. A. van Soest and M. de Greef, 
Dutch AIBO Team at RoboCup 2006, 

[C22] R. Triebel, P. Pfaff and W. Burgard, 
Multi-Level Surface Maps for Outdoor Terrain Mapping and Loop Closing, 
[C23] R. Triebel, K. Kersting and W. Burgard,
Robust 3D Scan Point Classification using Associative Markov Networks,
*Int. Conf. on Robotics and Automation*, 2006.

[C24] H. Andreasson, R. Triebel and A. Lilienthal,
Vision-based Interpolation of 3D Laser Scans,

See, walk, and kick: Humanoid robots start to play soccer,
*Proc. of the IEEE-RAS Int. Conf. on Humanoid Robots (Humanoids)*, 497-503, December 2006.

[PhD1] B. Goldluecke,
Multi-Camera Reconstruction and Rendering for Free-viewpoint Video,
Max-Planck-Institute for Computer Science, Saarbrücken, Germany, July 2006.

[M1] A. Wedel,
Detektion stationaerer Hindernisse in monokularen Bildsequenzen,
Computer Vision Group, University of Bonn, Germany, April 2006.

[M2] J. Sturm,
An appearance-based Visual Compass for Mobile Robots,
University of Amsterdam, the Netherlands, Dec. 2006.

[R1] A. Visser, J. Sturm, P. van Rossum, J. Westra and T. Bink,
Dutch Aibo Team: Technical Report RoboCup 2006,

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

Spin-dependent localization effects in GaAs:Mn/MnAs granular paramagnetic-ferromagnetic hybrids at low temperatures,

[BC1] M. Bergtholdt, D. Cremers and C. Schnörr,
Variational segmentation with shape priors,
[C1] M. Breuß, T. Brox, T. Sonar and J. Weickert,
*Stabilised nonlinear inverse diffusion for approximating hyperbolic PDEs*,
R. Kimmel, N. Sochen and J. Weickert (Eds.), *Scale Space and PDE Methods in Computer Vision*, Hofgeismar, Germany, Springer, LNCS, 536-547, April 2005.

[C2] T. Brox, B. Rosenhahn and J. Weickert,
*Three-dimensional shape knowledge for joint image segmentation and pose estimation*,

[C3] D. Cremers and G. Funka-Lea,
*Dynamical statistical shape priors for level set based tracking*,

[C4] S. Manay, D. Cremers, A. J. Yezzi and S. Soatto,
*One-shot integral invariant shape priors for variational segmentation*,

[C5] B. Rosenhahn, U. Kersting, D. Smith, J. Gurney, T. Brox and R. Klette,
*A system for marker-less human motion estimation*,

[C6] M. Rousson and D. Cremers,
*Efficient kernel density estimation of shape and intensity priors for level set segmentation*,

[C7] M. Welk, D. Theis, T. Brox and J. Weickert,
*PDE based deconvolution with forward-backward diffusivities and diffusion tensors*,

[C8] B. Goldluecke and M. Magnor,
*Spacetime-Continous Geometry Meshes from Multi-View Video Sequences*,

[C9] I. Ihrke, B. Goldluecke and M. Magnor,
*Reconstructing the Geometry of Flowing Water*,

*Dutch AIBO Team at RoboCup 2005*,
[C11] H. Andreasson, R. Triebel and W. Burgard,
Improving Plane Extraction from 3D Data by Fusing Laser Data and Vision,

[C12] R. Triebel and W. Burgard,
Improving Simultaneous Localization and Mapping in 3D Using Global Constraints,
Proc. of the Twentieth National Conference on Artificial Intelligence (AAAI), 2005.

[C13] R. Triebel, W. Burgard and F. Dellaert,
Using Hierarchical EM to Extract Planes from 3D Range Scans,
Int. Conf. on Robotics and Automation, 2005.

[PhD1] T. Brox,
From pixels to regions: partial differential equations in image analysis,
Faculty of Mathematics and Computer Science, Saarland University, Germany, April 2005.

[R1] T. Brox, M. Rousson, R. Deriche and J. Weickert,
Colour, texture, and motion in level set based segmentation and tracking,
Technical report 147, Dept. of Mathematics, Saarland University, Saarbrücken, Germany, August 2005.

[R2] B. Rosenhahn, U. Kersting, L. He, A. Smith, T. Brox, R. Klette and H. P. Seidel,
A silhouette based human motion tracking system,

[R3] J. Sturm, A. Visser and N. Wijngaards,
Dutch Aibo Team: Technical Report RoboCup 2005,

[J1] G. Steidl, J. Weickert, T. Brox, P. Mrázek and M. Welk,
On the equivalence of soft wavelet shrinkage, total variation diffusion, total variation regularization, and SIDEs,

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

[C2] T. Brox, A. Bruhn, N. Papenberg and J. Weickert,
High accuracy optical flow estimation based on a theory for warping,
[C3] T. Brox and J. Weickert,  
A TV flow based local scale measure for texture discrimination,  

[C4] T. Brox and J. Weickert,  
Level set based segmentation of multiple objects,  

[C5] D. Cremers, S. J. Osher and S. Soatto,  
Kernel density estimation and intrinsic alignment for knowledge-driven segmentation: Teaching level sets to walk,  

[C6] D. Cremers, N. Sochen and C. Schnörr,  
Multiphase dynamic labeling for variational recognition-driven image segmentation,  

[C7] H. Jin, D. Cremers, A. Yezzi and S. Soatto,  
Shedding light on stereoscopic segmentation,  

[C8] M. Magnor and B. Goldluecke,  
Spacetime-coherent Geometry Reconstruction from Multiple Video Streams,  

[C9] B. Goldluecke and M. Magnor,  
Weighted Minimal Hypersurfaces and Their Applications in Computer Vision,  

[C10] B. Goldluecke and M. Magnor,  
Space-Time Isosurface Evolution for Temporally Coherent 3D Reconstruction,  

First steps towards a robotic system for flexible volumetric mapping of indoor environments,  

[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,

[C1] T. Brox, M. Rousson, R. Deriche and J. Weickert,
Unsupervised segmentation incorporating colour, texture, and motion,

[C2] T. Brox, M. Welk, G. Steidl and J. Weickert,
Equivalence results for TV diffusion and TV regularisation,

[C3] D. Cremers,
A variational framework for image segmentation combining motion estimation and shape regularization,

[C4] D. Cremers,
A multiphase level set framework for variational motion segmentation,

[C5] D. Cremers and S. Soatto,
A pseudo-distance for shape priors in level set segmentation,

[C6] D. Cremers and S. Soatto,
Variational space-time motion segmentation,

[C7] D. Cremers, N. Sochen and C. Schnörr,
Towards Recognition-based Variational Segmentation Using Shape Priors and Dynamic Labeling,

[C8] D. Cremers and A. L. Yuille,
A generative model based approach to motion segmentation,
[C9] G. Doretto, D. Cremers, P. Favaro and S. Soatto,
Dynamic texture segmentation,

[C10] M. Rousson, T. Brox and R. Deriche,
Active unsupervised texture segmentation on a diffusion based feature space,

[C11] B. Goldluecke and M. Magnor,
Joint 3D Reconstruction and Background Separation in Multiple Views using Graph Cuts,

[C12] B. Goldluecke and M. Magnor,
Real-time Microfacet Billboardng for Free-viewpoint Video Rendering,

[C13] B. Goldluecke and M. Magnor,
Real-time, Free-viewpoint Video Rendering from Volumetric Geometry,

[C14] C. Petz, B. Goldluecke and M. Magnor,
Hardware-accelerated Autostereogram Rendering for Interactive 3D Visualization,

A system for volumetric robotic mapping of underground mines,

[C16] D. Hhnel, R. Triebel, W. Burgard and S. Thrun,
Map Building with Mobile Robots in Dynamic Environments,

[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,
[C1] T. Brox and J. Weickert, 
**Nonlinear matrix diffusion for optic flow estimation,**

[C2] J. Keuchel, C. Schnoerr, C. Schellewald and D. Cremers, 
**Unsupervised Image Partitioning with Semidefinite Programming,**

[C3] D. Cremers, T. Kohlberger and C. Schnörr, 
**Nonlinear shape statistics in Mumford–Shah based segmentation,**

[C4] D. Cremers and C. Schnörr, 
**Motion Competition: variational integration of motion segmentation and shape regularization,**

[C5] 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.

[C6] J. Weickert and T. Brox, 
**Diffusion and regularization of vector- and matrix-valued images,**

[C7] B. Goldluecke, M. Magnor and B. Wilburn, 
**Hardware-accelerated Dynamic Light Field Rendering,**

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

[M1] T. Brox, 
**Smoothing of matrix-valued data,**
Department of Mathematics and Computer Science, University of Mannheim, Germany, May 2002.
[C1] T. Brox, D. Farin and P. H. N. de With,
Multi-stage region merging for image segmentation,

[C2] D. Cremers, T. Kohlberger and C. Schnörr,
Nonlinear shape statistics via kernel spaces,

[C3] J. Keuchel, C. Schellewald, D. Cremers and C. Schnörr,
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.

[C4] 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.

[M1] B. Goldluecke,
Nichtkonforme Finite Elemente und Kollokation für elliptische Randwertprobleme,

[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,

[R1] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Diffusion Snakes using statistical shape knowledge,

[J1] D. Cremers and A. Mielke,
Flow equations for the Héon-Heiles Hamiltonian,