Journal Articles

[J1] V. Usenko, N. Demmel, D. Schubert, J. Stueckler and D. Cremers,
Visual-Inertial Mapping with Non-Linear Factor Recovery,

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

[J3] Rodola, Emanuele, Lähner, Zorah, Bronstein, Alex M., Bronstein, Michael M., Solomon and Justin,
Functional Maps Representation on Product Manifolds,

[J4] F. Pasa, V. Golkov, F. Pfeiffer, D. Cremers and D. Pfeiffer,
Efficient Deep Network Architectures for Fast Chest X-Ray Tuberculosis Screening and Visualization,

[J5] J. Schuchardt, V. Golkov and D. Cremers,
Learning to Evolve,

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

[J7] Haefner, B., Peng, S., Verma, A., Queau, Y., Cremers and D.,
Photometric Depth Super-Resolution,

[J8] Brahimi, M., Queau, Y., Haefner, B., Cremers and D.,
On well-posedness of uncalibrated photometric stereo under general lighting,

[J9] Laude, E., Ochs, P., Cremers and D.,
Bregman Proximal Mappings and Bregman-Moreau Envelopes under Relative Prox-Regularity,
2019.

[J10] Mahesh Chandra Mukkamala, Felix Westerkamp, Emanuel Laude, Daniel Cremers and Peter Ochs,
Bregman Proximal Framework for Deep Linear Neural Networks,

[J11] J. Engel, V. Koltun and D. Cremers,
Direct Sparse Odometry,
March 2018.
[J12] N. Yang, R. Wang, X. Gao and D. Cremers, 
Challenges in Monocular Visual Odometry: Photometric Calibration, Motion Bias and Rolling Shutter Effect, 

LED-based Photometric Stereo: Modeling, Calibration and Numerical Solution, 

[J14] Queau, Y., Durou, J.-D., Aujol and J.-F., 
Normal Integration: A Survey, 

[J15] Queau, Y., Durou, J.-D., Aujol and J.-F., 
Variational Methods for Normal Integration, 

[J16] Melou, J., Queau, Y., Durou, J.-D., Castan, F., Cremers and D., 
Variational Reflectance Estimation from Multi-view Images, 

[J17] P. Bergmann, R. Wang and D. Cremers, 
Online Photometric Calibration of Auto Exposure Video for Realtime Visual Odometry and SLAM, 

[J18] E. Aljalbout, V. Golkov, Y. Siddiqui, M. Strobel and D. Cremers, 
Clustering with Deep Learning: Taxonomy and New Methods, 

[J19] L. Ma,, J. Stueckler, T. Wu and D. Cremers, 
Detailed Dense Inference with Convolutional Neural Networks via Discrete Wavelet Transform, 
Aug 2018.

[J20] Tjaden, Henning, Schwancke, Ulrich, Schöner, Elmar, Cremers and Daniel, 
A Region-based Gauss-Newton Approach to Real-Time Monocular Multiple Object Tracking, 

[J21] Queau, Y., Mecca, R., Durou, J.-D., Descombes and X., 
Photometric Stereo with Only Two Images: A Theoretical Study and Numerical Resolution, 

[J22] V. Golkov, M. J. Skwark, A. Mirchev, G. Dikov, A. R. Geanes, J. Mendenhall, J. Meiler and D. Cremers, 
3D Deep Learning for Biological Function Prediction from Physical Fields, 
All: 1

List of Publications

[J23] Bähr, M., Breus, M., Queau, Y., Bouroujerdi, A. S., Durou and J.-D.,
Fast and accurate surface normal integration on non-rectangular domains,

[J24] Krieg, Michael, Stühmer, Jan, Cueva, Juan G, Fetter, Richard, Spilker, Kerri, Cremers,
Daniel, Shen, Kang, Dunn, Alex R, Goodman and Miriam B,
Tau Like Proteins Reduce Torque Generation in Microtubule Bundles,

[J25] J. Kukacka, V. Golkov and D. Cremers,
Regularization for Deep Learning: A Taxonomy,

[J26] L. Cosmo, E. Rodola, A. Albarelli, F. Memoli and D. Cremers,
Consistent Partial Matching of Shape Collections via Sparse Modeling,

[J27] D. Boscaini, J. Masci, E. Rodola, M. M. Bronstein and D. Cremers,
Anisotropic Diffusion Descriptors,

[J28] F. Bergamasco, A. Albarelli, L. Cosmo, E. Rodola and A. Torsello,
An Accurate and Robust Artificial Marker based on Cyclic Codes, 2016.

Bias and Precision Analysis of Diffusional Kurtosis Imaging for Different Acquisition Schemes, 2016.

[J30] 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,
35: 2016, Special Issue on Deep Learning.

[J31] O. Litany, E. Rodola, A. M. Bronstein, M. M. Bronstein and D. Cremers,
Non-Rigid Puzzles,

[J32] M. Strumia, F. R. Schmidt, C. Anastasopoulos, C. Granziera, G. Krueger and T. Brox,
White Matter MS-Lesion Segmentation Using a Geometric Brain Model,

[J33] Vestner, M., Litman, R., Bronstein, A., Rodola, E., Cremers and D.,
Bayesian Inference of Bijective Non-Rigid Shape Correspondence,

[J34] Mecca, R., Queau, Y., Logothetis, F., Cipolla and R.,
A Single-Lobe Photometric Stereo Approach for Heterogeneous Material,
J35] A. Albarelli, E. Rodola and A. Torsello,  
Fast and Accurate Surface Alignment through an Isometry-Enforcing Game,  

J36] J. Diebold, C. Nieuwenhuis and D. Cremers,  
Midrange Geometric Interactions for Semantic Segmentation,  
2015.

J37] J. Diebold, S. Tari and D. Cremers,  
The Role of Diffusion in Figure Hunt Games,  

J38] S. Madhogaria, P. M. Baggenstoss, M. Schikora, W. Koch and D. Cremers,  
Car detection by fusion of HOG and causal MRF,  

J39] M. Klodt, K. Herzog, R. Töpfer and D. Cremers,  
Field phenotyping of grapevine growth using dense stereo reconstruction,  

J40] M. Jaimez and J. Gonzalez-Jimenez,  
Fast Visual Odometry for 3-D Range Sensors,  

J41] J. Stueckler and S. Behnke,  
Efficient Dense Rigid-Body Motion Segmentation and Estimation in RGB-D Video,  
January 2015.

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

J43] D. Droeschel, M. Nieuwenhuisen, M. Beul, J. Stueckler, D. Holz and S. Behnke,  
Multi-Layered Mapping and Navigation for Autonomous Micro Aerial Vehicles,  

J44] E. Rodola, A. Albarelli, D. Cremers and A. Torsello,  
A Simple and Effective Relevance-based Point Sampling for 3D Shapes,  

J45] R. Mecca, E. Rodola and D. Cremers,  
Realistic Photometric Stereo Using Partial Differential Irradiance Equation Ratios,  

J46] T. Möllenhoff, E. Strekalovskiy, M. Möller and D. Cremers,  
The Primal-Dual Hybrid Gradient Method for Semiconvex Splittings,  

Cloud-based collaborative 3D mapping in real-time with low-cost robots,  
[J48] Hugo Grimmett, Rudolph Triebel, Rohan Paul and Ingmar Posner, 
Introspective classification for robot perception, 

[J49] T. Whelan, L. Ma, E. Bondarev, P. de With and J. McDonald, 
Incremental and Batch Planar Simplification of Dense Point Cloud Maps, 

[J50] B. Goldluecke, M. Aubry, K. Kolev and D. Cremers, 
A Super-resolution Framework for High-Accuracy Multiview Reconstruction, 

[J51] E. Strekalovskiy, A. Chambolle and D. Cremers, 
Convex Relaxation of Vectorial Problems with Coupled Regularization, 

[J52] J. Engel, J. Sturm and D. Cremers, 
Scale-Aware Navigation of a Low-Cost Quadrocopter with a Monocular Camera, 

[J53] E. Rodola, S. Rota Bulo and D. Cremers, 
Robust Region Detection via Consensus Segmentation of Deformable Shapes, 

[J54] M. Schadler, J. Stueckler and S. Behnke, 
Rough Terrain Mapping and Navigation using a Continuously Rotating 2D Laser Scanner, 

[J55] J. Stueckler, B. Waldvogel, H. Schulz and S. Behnke, 
Dense Real-Time Mapping of Object-Class Semantics from RGB-D Video, 
2014.

[J56] J. Stueckler and S. Behnke, 
Multi-Resolution Surfel Maps for Efficient Dense 3D Modeling and Tracking, 

[J57] E. Rodola, A. Albarelli, F. Bergamasco and A. Torsello, 
A Scale Independent Selection Process for 3D Object Recognition in Cluttered Scenes, 

[J58] A. Torsello, A. Albarelli and E. Rodola, 
Stable and Fast Techniques for Unambiguous Compound Phase Coding, 

[J59] C. Nieuwenhuis and D. Cremers, 
Spatially Varying Color Distributions for Interactive Multi-Label Segmentation, 

[J60] C. Nieuwenhuis, E. Toeppe and D. Cremers, 
A Survey and Comparison of Discrete and Continuous Multi-label Optimization Approaches for the Potts Model, 
[J61] B. Goldluecke, E. Strekalovskiy and D. Cremers,
Tight Convex Relaxations for Vector-Valued Labeling,

[J62] F. Endres, J. Hess, J. Sturm, D. Cremers and W. Burgard,
3D Mapping with an RGB-D Camera,

[J63] Liu, Z., Beetz, M., Cremers, D., Gall, J., Li, W., Pangercic, D., Sturm, J., Tai and Y.-W.,
Introduction to the special issue on visual understanding and applications with
RGB-D cameras,

[J64] A. Albarelli, E. Rodola and A. Torsello,
Imposing Semi-local Geometric Constraints for Accurate Correspondences Selection
in Structure from Motion: a Game-Theoretic Perspective,

[J65] A. Chambolle, D. Cremers and T. Pock,
A Convex Approach to Minimal Partitions,

[J66] T. Schoenemann and D. Cremers,
A Coding Cost Framework for Super-resolution Motion Layer Decomposition,

[J67] T. Schoenemann, F. Kahl, S. Masnou and D. Cremers,
A linear framework for region-based image segmentation and inpainting involving
curvature penalization,

[J68] D. Cremers,
Optimal Solutions for Semantic Image Decomposition,

[J69] S. Chen, D. Cremers and R. J. Radke,
Image segmentation with one shape prior - A template-based formulation,

[J70] B. Goldluecke, E. Strekalovskiy and D. Cremers,
The Natural Total Variation Which Arises from Geometric Measure Theory,

[J71] U. Schlickewei,
On the Andr´ e motive of certain irreducible symplectic varieties,

[J72] 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,

[J74] D. Cremers and E. Strekalovskiy,
Total Cyclic Variation and Generalizations,

[J75] J. Stueckler, R. Steffens, D. Holz and S. Behnke,
Efficient 3D Object Perception and Grasp Planning for Mobile Manipulation in Domestic Environments,

[J76] J. Stueckler, R. Steffens, D. Holz and S. Behnke,
RoboCup@Home: Demonstrating Everyday Manipulation Skills in RoboCup@Home,

[J77] T. Windheuser, U. Schlickewei, F. R. Schmidt and D. Cremers,
Large-Scale Integer Linear Programming for Orientation-Preserving 3D Shape Matching,

[J78] D. Cremers and K. Kolev,
Multiview Stereo and Silhouette Consistency via Convex Functionals over Convex Domains,

Stereoscopic Scene Flow Computation for 3D Motion Understanding,

[J80] T. Schoenemann, S. Masnou and D. Cremers,
The Elastic Ratio: Introducing Curvature into Ratio-Based Globally Optimal Image Segmentation,
20(9): 2565-2581, 2011.

[J81] A. Sellent, M. Eisemann, B. Goldluecke, D. Cremers and M. Magnor,
Motion Field Estimation from Alternate Exposure Images,

[J82] 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,
Pattern Recognition, 44: 2944-2958, 2011.
[J84] 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.

[J85] J. Kybic and C. Nieuwenhuis,  
Bootstrap Optical Flow and Uncertainty Measure,  

[J86] T. Pock, D. Cremers, H. Bischof and A. Chambolle,  
Global Solutions of Variational Models with Convex Regularization,  

[J87] T. Schoenemann and D. Cremers,  
A Combinatorial Solution for Model-based Image Segmentation and Real-time Tracking,  

[J88] U. Schlickewei,  
The Hodge conjecture for self-products of certain K3 surfaces,  

[J89] U. Schlickewei,  
Stability of tautological vector bundles on Hilbert squares of surfaces,  

[J90] Y. Arboleda-Estudillo, M. Krieg, J. Stühmer, N. A. Licata, D. J. Muller and C.-P. Heisenberg,  
Movement Directionality in Collective Migration of Germ Layer Progenitors,  

[J91] L. Spinello, R. Triebel and R. Siegwart,  
Multiclass Multimodal Detection and Tracking in Urban Environments,  

[J92] T. Brox and D. Cremers,  
On local region models and a statistical interpretation of the piecewise smooth Mumford-Shah functional,  

[J93] T. Brox, B. Rosenhahn, J. Gall and D. Cremers,  
Combined region- and motion-based 3D tracking of rigid and articulated objects,  

[J94] K. Kolev, M. Klodt, T. Brox and D. Cremers,  
Continuous Global Optimization in Multiview 3D Reconstruction,  

[J95] A. Wedel, C. Rabe, H. Badino, H. Loose, U. Franke and D. Cremers,  
B-Spline Modeling of Road Surfaces with an Application to Free Space Estimation,  
[J96] U. Schlickewei,
Hodge classes on self-products of K3 surfaces,

[J97] E. Strekalovskiy,
Folgen von Höhenfußpunktdreiecken und ihre Grenzpunkte,

[J98] J. Sturm, C. Plagemann and W. Burgard,
Body schema learning for robotic manipulators from visual self-perception,

[J99] J. Sturm, and A. Visser,
An appearance-based visual compass for mobile robots,

[J100] T. Brox, O. Kleinschmidt and D. Cremers,
Efficient Nonlocal Means for Denoising of Textural Patterns,

[J101] D. Cremers,
Nonlinear Dynamical Shape Priors for Level Set Segmentation,

[J102] 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,

[J103] C. Michel, M. T. Elm, S. D. Baranovskii, P. Thomas, W. Heimbroidt, B. Goldluecke and P. J. Klar,
Influence of non-random incorporation of Mn ions on the magnetotransport properties of $Ga_{1-x}Mn_xAs$ alloys,

[J104] C. Michel, M. T. Elm, B. Goldluecke, S. D. Baranovskii, P. Thomas, W. Heimbroidt and P. J. Klar,
Tailoring the magnetoresistance of MnAs/GaAs:Mn granular hybrid nanostructures,

[J105] R. Kümmerle, R. Triebel, P. Pfaff and W. Burgard,
Monte Carlo localization in outdoor terrains using multilevel surface maps,

[J106] S. Behnke and J. Stueckler,
Hierarchical Reactive Control for Humanoid Soccer Robots,

[J107] T. Pock, M. Pock and H. Bischof,
Algorithmic Differentiation: Application to Variational Problems in Computer Vision,
2007.
All: 1

List of Publications

[J108] B. Rosenhahn, T. Brox and J. Weickert,
Three-dimensional shape knowledge for joint image segmentation and pose tracking,

[J109] Y.-J. Kim, T. Brox, W. Feiden and J. Weickert,
Fully automated segmentation and morphometrical analysis of muscle fibre images,

[J110] D. Cremers,
Computer Lernen Sehen,

[J111] D. Cremers, M. Rousson and R. Deriche,
A review of statistical approaches to level set segmentation: integrating color, texture, motion and shape,

[J112] 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,

[J114] O. Martinez Mozos, R. Triebel, P. Jensfelt, A. Rottmann and W. Burgard,
Supervised semantic labeling of places using information extracted from sensor data,

[J115] P. Pfaff, R. Triebel and W. Burgard,
An Efficient Extension to Elevation Maps for Outdoor Terrain Mapping and Loop Closing,

[J116] H. Andreasson, R. Triebel and A. Lilienthal,
Non-iterative Vision-based Interpolation of 3D Laser Scans,

[J117] T. Brox and J. Weickert,
Level Set Segmentation with Multiple Regions,

[J118] T. Brox and J. Weickert,
A TV flow based local scale estimate and its application to texture discrimination,
17(5): 1053-1073, October 2006.

[J119] D. Cremers,
Dynamical statistical shape priors for level set based tracking,
[J120] D. Cremers, S. J. Osher and S. Soatto,
Kernel density estimation and intrinsic alignment for shape priors in level set segmentation,

[J121] D. Cremers, N. Sochen and C. Schnörr,
A multiphase dynamic labeling model for variational recognition-driven image segmentation,

[J122] S. Manay, D. Cremers, B.-W. Hong, A. Yezzi and S. Soatto,
Integral invariants for shape matching,

[J123] N. Papenberg, A. Bruhn, T. Brox, S. Didas and J. Weickert,
Highly accurate optic flow computation with theoretically justified warping,
67(2): 141-158, April 2006.

[J124] T. Brox, J. Weickert, B. Burgeth and P. Mrazek,
Nonlinear structure tensors,

[J125] M. Breus, T. Brox, A. Bürgel, T. Sonar and J. Weickert,
Numerical aspects of TV flow,

[J126] B. Rosenhahn, T. Brox, U. G. Kersting, A. W. Smith, J. Gurney and R. Klette,
A system for marker-less motion capture,
Künstliche Intelligenz, 45-51, January 2006.

[J127] C. Michel, S. D. Baranovskii, P. J. Klar, P. Thomas and B. Goldluecke,
Strong non-Arrhenius temperature dependence of the resistivity in the regime of traditional band transport,

[J128] G. Steidl, J. Weickert, T. Brox, P. Mrazek and M. Welk,
On the equivalence of soft wavelet shrinkage, total variation diffusion, total variation regularization, and SIDEs,

[J129] D. Cremers, T. Kohlberger and C. Schnörr,
Shape Statistics in Kernel Space for Variational Image Segmentation,
[J132] D. Cremers and C. Schnörr,
Statistical shape knowledge in variational motion segmentation,

[J133] J. Keuchel, C. Schnörr, C. Schellewald and D. Cremers,
Binary partitioning, perceptual grouping, and restoration with semidefinite programming,

[J134] D. Cremers and A. V. M. Herz,
Travelling waves of excitation in neural field models: Equivalence of rate descriptions and integrate-and-fire dynamics,

[J135] D. Cremers, F. Tischhäuser, J. Weickert and C. Schnörr,
Diffusion Snakes: Introducing statistical shape knowledge into the Mumford–Shah functional,

[J136] D. Cremers and A. Mielke,
Flow equations for the Héon-Heiles Hamiltonian,

Books

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

[B2] J. Sturm,
Approaches to Probabilistic Model Learning for Mobile Manipulation Robots,
Springer 2013.

[B3] Guest Editors: Y. Boykov, F. Kahl, V. Lempitsky and F. R. Schmidt,
Special Issue: Energy Optimization Methods,
Springer 2013.

[B4] A. Wedel and D. Cremers,
Stereoscopic Scene Flow for 3D Motion Analysis,
Springer 2011.

[B5] Y. Boykov, F. Kahl, V. Lempitsky and F. R. Schmidt (Editors),

Video Processing and Computational Video,
Springer 2010.

[B7] D. Cremers, Y. Boykov, A. Blake and F. R. Schmidt (Editors),
Energy Minimization Methods for Computer Vision and Pattern Recognition (EMMCVPR),
Springer 2009.
All: 1  List of Publications

[B8] D. Cremers, B. Rosenhahn, A. L. Yuille and F. R. Schmidt (Editors),
Statistical and Geometrical Approaches to Visual Motion Analysis,
Springer 2009.

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

Book Chapters

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

C. Wenk,
Skeleton-Based Recognition of Shapes in Images via Longest Path Matching,
Research in Shape Modeling, Springer International Publishing, Association for Women in

[BC3] V. Golkov, J. M. Portegies, A. Golkov, R. Duits and D. Cremers,
Holistic Image Reconstruction for Diffusion MRI,
Computational Diffusion MRI, Munich, Germany, Springer, October 2015, Book Chapter,
and Oral Presentation at MICCAI 2015 Workshop on Computational Diffusion MRI.

Haase and D. Cremers,
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.

[BC5] M. Klodt, F. Steinbruecker and D. Cremers,
Moment Constraints in Convex Optimization for Segmentation and Tracking,

A Game-Theoretic Approach to Pairwise Clustering and Matching,

[BC7] Sturm, J., Plagemann, C., Burgard and W.,
Body Schema Learning,
Towards Service Robots for Everyday Environments, Springer Berlin/Heidelberg, 131-161,
2012.

[BC8] M. Schikora, W. Koch, R. L. Streit and D. Cremers,
A Sequential Monte Carlo Method for Multi-Target Tracking with the Intensity Filter,
[BC9] D. Cremers, T. Pock, K. Kolev and A. Chambolle,
Convex Relaxation Techniques for Segmentation, Stereo and Multiview Recon-
struction,

[BC10] D. Cremers,
Image Segmentation with Shape Priors: Explicit Versus Implicit Representa-
tions,

[BC11] A. Chambolle, V. Caselles, D. Cremers, M. Novaga and T. Pock,
An Introduction to Total Variation for Image Analysis,

[BC12] T. Brox, B. Rosenhahn and D. Cremers,
Contours, optic flow, and prior knowledge: cues for capturing 3D human mo-
tion in videos,

Tracking clothed people,

[BC14] D. Cremers and M. Rousson,
Efficient kernel density estimation of shape and intensity priors for level set seg-
mentation,
J. S. Suri and A. Farag(Eds.), Parametric and Geometric Deformable Models: An appli-

and P. Kornprobst,
Adaptive structure tensors and their applications,
J. Weickert and H. Hagen(Eds.), Visualization and Processing of Tensor Fields, Springer,
17-47, January 2006.

[BC16] D. Cremers and T. Kohlberger,
Probabilistic kernel PCA and its application to statistical shape modeling and in-
ference,
G. Camps-Valls et al.(Ed.), Kernel Methods in Bioengineering, Signal and Image Process-

[BC17] 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 tech-

[BC18] J. Weickert, A. Bruhn, T. Brox and N. Papenberg,
A survey on variational optic flow methods for small displacements,
O. Scherzer(Ed.), Mathematical Models for Registration and Applications to Medical Ima-

PDEs for tensor image processing,
J. Weickert and H. Hagen(Eds.), Visualization and Processing of Tensor Fields, Springer,
399-414, January 2006.
List of Publications

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

Conference and Workshop Papers

[C1] Sang, L., Haefner, B., Cremers and D.,
Inferring Super-Resolution Depth from a Moving Light-Source Enhanced RGB-D Sensor: A Variational Approach,
IEEE Winter Conference on Applications of Computer Vision (WACV), Colorado, USA, March 2020, Spotlight Presentation.

[C2] R. Wang, N. Yang, J. Stueckler and D. Cremers,
DirectShape: Photometric Alignment of Shape Priors for Visual Vehicle Pose and Shape Estimation,

[C3] 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.

[C4] P. Swazinna, V. Golkov, I. Lipp, E. Sgarlata, V. Tomassini, D. K. Jones and D. Cremers,
Negative-Unlabeled Learning for Diffusion MRI,
2019.

[C5] E. Bylow, R. Maier, F. Kahl and C. Olsson,
Combining Depth Fusion and Photometric Stereo for Fine-Detailed 3D Models,
Scandinavian Conference on Image Analysis (SCIA), Norrköping, Sweden, June 2019, Oral Presentation, received the SCIA 2019 Honourable Mention award.

[C6] E. Laude, T. Wu and D. Cremers,
Optimization of Inf-Convolution Regularized Nonconvex Composite Problems,
International Conference on Artificial Intelligence and Statistics (AISTATS), 2019.

[C7] T. Frerix and J. Bruna,
Approximating Orthogonal Matrices with Effective Givens Factorization,

[C8] M. Eisenberger, Z. Lähner and D. Cremers,
Divergence-Free Shape Correspondence by Deformation,

[C9] Haefner, B., Ye, Z., Gao, M., Wu, T., Queau, Y., Cremers and D.,
Variational Uncalibrated Photometric Stereo under General Lighting,
International Conference on Computer Vision (ICCV), Seoul, South Korea, October 2019.

[C10] Q. Khan, P. Wenzel, D. Cremers and L. Leal-Taixe,
Towards Generalizing Sensorimotor Control Across Weather Conditions,


[C23] P. Haeusser, J. Plapp, V. Golkov, E. Aljalbout and D. Cremers, 
**Associative Deep Clustering - Training a Classification Network with no Labels**, 
*Proc. of the German Conference on Pattern Recognition (GCPR)*, October 2018.

[C24] Nikolaus Mayer, Eddy Ilg, Philipp Fischer, Caner Hazirbas, Daniel Cremers, Alexey Dosovitskiy and Thomas Brox, 
**What Makes Good Synthetic Training Data for Learning Disparity and Optical Flow Estimation?**, 
September 2018.

[C25] T. Frerix, T. Möllenhoff, M. Moeller and D. Cremers, 
**Proximal Backpropagation**, 

**Discrete-Continuous ADMM for Transductive Inference in Higher-Order MRFs**, 
2018.

[C27] L. von Stumberg, V. Usenko and D. Cremers, 
**Direct Sparse Visual-Inertial Odometry using Dynamic Marginalization**, 
May 2018.

**The TUM VI Benchmark for Evaluating Visual-Inertial Odometry**, 
October 2018.

[C29] X. Gao, R. Wang, N. Demmel and D. Cremers, 
**LDSO: Direct Sparse Odometry with Loop Closure**, 
*iros*, October 2018.

[C30] Z. Lähner, D. Cremers and T. Tung, 
**DeepWrinkles: Accurate and Realistic Clothing Modeling**, 
September 2018, **Oral Presentation**.

[C31] D. Schubert, N. Demmel, V. Usenko, J. Stueckler and D. Cremers, 
**Direct Sparse Odometry With Rolling Shutter**, 
September 2018, **Oral Presentation**.

[C32] V. Usenko, N. Demmel and D. Cremers, 
**The Double Sphere Camera Model**, 

[C33] I. Chiotellis, F. Zimmermann, D. Cremers and R. Triebel, 
**Incremental Semi-Supervised Learning from Streams for Object Classification**, 

**6DoF Pose Estimation for Industrial Manipulation based on Synthetic Data**, 
[C35] C. Nissler, M. Durner, Z.-C. Marton and R. Triebel,
Simultaneous Calibration and Mapping,

[C36] 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.

[C37] Haefner, B., Queau, Y., Möllenhoff, T., Cremers and D.,
Fight ill-posedness with ill-posedness: Single-shot variational depth super-resolution from shading,

[C38] I. Grixa, P. Schulz, W. Stürzl and R. Triebel,
Appearance-Based Along-Route Localization for Planetary Missions,

Implicit 3D Orientation Learning for 6D Object Detection from RGB Images,
September 2018, *Best Paper Award*.

[C40] M. Denninger and R. Triebel,
Persistent Anytime Learning of Objects from Unseen Classes,

[C41] 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.

[C42] M. Jaimez, T. J. Cashman, A. Fitzgibbon, J. Gonzalez-Jimenez and D. Cremers,

[C43] L. Ma, J. Stueckler, C. Kerl and D. Cremers,
Multi-View Deep Learning for Consistent Semantic Mapping with RGB-D Cameras,
Vancouver, Canada, Sep 2017.

[C44] Vestner, M., Litman, R., Rodola, E., Bronstein, A., Cremers and D.,

[C45] M. Dzitsiuk, J. Sturm, R. Maier, L. Ma and D. Cremers,
De-noising, Stabilizing and Completing 3D Reconstructions On-the-go using Plane Priors,

[C46] L. von Stumberg, V. Usenko, J. Engel, J. Stueckler and D. Cremers,
From Monocular SLAM to Autonomous Drone Exploration,
[C47] Florian Walch, Caner Hazirbas, Laura Leal-Taixe, Torsten Sattler, Sebastian Hilsenbeck and Daniel Cremers, 

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

[C49] Queau, Y., Pizenberg, M., Durou, J.-D., Cremers and D., 
*Microgeometry capture and RGB albedo estimation by photometric stereo without demosaicing*, 

[C50] P. Haeusser, A. Mordvintsev and D. Cremers, 

[C51] V. Usenko, L. von Stumberg, A. Pangeric and D. Cremers, 
*Real-Time Trajectory Replanning for MAVs using Uniform B-splines and a 3D Circular Buffer*, 
Vancouver, Canada, Sep 2017.

[C52] Tim Meinhardt, Michael Moeller, Caner Hazirbas and Daniel Cremers, 

*One-Shot Video Object Segmentation*, 
Honolulu, USA, 2017.

[C54] Queau, Y., Melou, J., Durou, J.-D., Cremers and D., 
*Dense Multi-view 3D-reconstruction Without Dense Correspondences*, 

[C55] K. Kurach, S. Gelly, M. Jastrzebski, P. Haeusser, O. Teytaud, D. Vincent and O. Bousquet, 
*Better Text Understanding Through Image-To-Text Transfer*, 

[C56] P. Haeusser, T. Frerix, A. Mordvintsev and D. Cremers, 

*Efficient Deformable Shape Correspondence via Kernel Matching*, 
All: 1

List of Publications

[C58] V. Golyanik, K. Kim, R. Maier, M. Niessner, D. Stricker and J. Kautz,
Multiframe Scene Flow with Piecewise Rigid Motion,
International Conference on 3D Vision (3DV), Qingdao, China, October 2017, Spotlight Presentation.

[C59] T. Möllenhoff and D. Cremers,
Sublabel-Accurate Discretization of Nonconvex Free-Discontinuity Problems,
International Conference on Computer Vision (ICCV), Venice, Italy, October 2017.

[C60] Christian Nissler, Zoltan-Csaba Marton, Hannes Kisner, Ulrike Thomas and Rudolph Triebel,
A Method for Hand-Eye and Camera-to-Camera Calibration for Limited Fields of View,
2017.

[C61] Tick Son Wang, Zoltan-Csaba Marton, Manuel Brucker and Rudolph Triebel,
How Robots Learn to Classify New Objects Trained from Small Data Sets,
Conference on Robot Learning (CoRL), 2017.

[C62] Maximilian Durner, Simon Kriegel, Sebastian Riedel, Manuel Brucker, Zoltan-Csaba Marton, Ferenc Balint-Benczedi and Rudolph Triebel,
Experience-based Optimization of Robotic Perception,
International Conference on Advanced Robotics (ICAR), 2017.

[C63] Queau, Y., Melou, J., Castan, F., Cremers, D., Durou and J.-D.,
A Variational Approach to Shape-from-shading Under Natural Illumination,

[C64] F. Bernard, F. R. Schmidt, J. Thunberg and D. Cremers,
A Combinatorial Solution to Non-Rigid 3D Shape-to-Image Matching,

[C65] A. Kasyanov, F. Engelmann, J. Stueckler and B. Leibe,
Keyframe-Based Visual-Inertial Online SLAM with Relocalization,

[C66] F. Engelmann, J. Stueckler and B. Leibe,
SAMP: Shape and Motion Priors for 4D Vehicle Reconstruction,

[C67] Peng, S., Haefner, B., Queau, Y., Cremers and D.,
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.

[C68] N.Mayer, E.Ilg, P.Haeusser, 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.

[C69] V. Golkov, T. Sprenger, J. I. Sperl, M. I. Menzel, M. Czisch, P. Sämann and D. Cremers,
Model-Free Novelty-Based Diffusion MRI,
Prague, Czech Republic, April 2016.


[C83] D. Kochanov, A. Osep, J. Stueckler and B. Leibe,
Scene Flow Propagation for Semantic Mapping and Object Discovery in Dynamic Street Scenes,

[C84] F. Engelmann, J. Stueckler and B. Leibe,
Joint Object Pose Estimation and Shape Reconstruction in Urban Street Scenes Using 3D Shape Priors,
Proc. of the German Conference on Pattern Recognition (GCPR), 2016.

[C85] M. Moeller, J. Diebold, G. Gilboa and D. Cremers,
Learning Nonlinear Spectral Filters for Color Image Reconstruction,
2015.

[C86] J. Diebold, N. Demmel, C. Hazirbas, M. Möller and D. Cremers,
Interactive Multi-label Segmentation of RGB-D Images,
2015.

[C87] C. Hazirbas, J. Diebold and D. Cremers,
Optimizing the Relevance-Redundancy Tradeoff for Efficient Semantic Segmentation,
2015.

[C88] A. Kanezaki, E. Rodola and T. Harada,
RGB-D [Graph matching gakushuu wo mochiita RGB-D gazou kara no buttai kenshutsu] - Learning graph matching for object detection from RGB-D images,
20 - Robotics Symposia (RS), Karuizawa, Japan, March 2015.

[C89] T. Möllenhoff, E. Strekalovskiy, M. Möller and D. Cremers,
Low Rank Priors for Color Image Regularization,
2015.

[C90] 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.

[C91] J. Stühmer and D. Cremers,
A Fast Projection Method for Connectivity Constraints in Image Segmentation,
X.-C. Tai, E. Bae, T. F. Chan and M. Lysaker(Eds.), , 2015.

[C92] R. Mecca, E. Rodola and D. Cremers,
Analysis of Surface Parametrizations for Modern Photometric Stereo Modeling,
International Conference on Quality Control by Artificial Vision (QCAV), 2015.

[C93] 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,
2015.

[C94] D. Mund, R. Triebel and D. Cremers,
Active Online Confidence Boosting for Efficient Object Classification,


[C106] M. Jaimez, M. Souiai, J. Stueckler, J. Gonzalez-Jimenez and D. Cremers,
Motion Cooperation: Smooth Piece-Wise Rigid Scene Flow from RGB-D Images,

[C107] E. Rodola, M. Moeller and D. Cremers,
Point-wise Map Recovery and Refinement from Functional Correspondence,
Aachen, Germany, 2015, Received the Best Paper Award.

[C108] C. Kerl, J. Stueckler and D. Cremers,
Dense Continuous-Time Tracking and Mapping with Rolling Shutter RGB-D Cameras,
Santiago, Chile, 2015.

[C109] M. Souiai, M. R. Oswald, Y. Kee, J. Kim, M. Pollefeys and D. Cremers,
Entropy Minimization for Convex Relaxation Approaches,
Santiago, Chile, 2015.

[C110] 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.

[C111] N. Nagaraja, F. R. Schmidt and T. Brox,
Video Segmentation with Just a Few Strokes,
Santiago, Chile, Dec 2015.

Model-Based Tracking at 300Hz using Raw Time-of-Flight Observations,
Santiago, Chile, 2015.

Novel Acquisition Scheme for Diffusion Kurtosis Imaging Based on Compressed-Sensing Accelerated DSI Yielding Superior Image Quality, 2014.

Total Variation-Regularized Compressed Sensing Reconstruction for Multi-Shell Diffusion Kurtosis Imaging, 2014.


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[C121] Y. Kee, M. Souiai, D. Cremers and J. Kim, Sequential Convex Relaxation for Mutual-Information-Based Unsupervised Figure-Ground Segmentation, 2014.


[C127] 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.


[C130] C. Nieuwenhuis, S. Hawe, M. Kleinsteuber and D. Cremers,
Co-Sparse Textural Similarity for Interactive Segmentation,
2014.

[C131] M. R. Oswald, J. Stühmer and D. Cremers,
Generalized Connectivity Constraints for Spatio-temporal 3D Reconstruction,

[C132] E. Strekalovskiy and D. Cremers,
Real-Time Minimization of the Piecewise Smooth Mumford-Shah Functional,

[C133] A. Kanezaki, E. Rodola and T. Harada,
RGB-D [RGB-D gazou kara no buttai kenshutsu ni okeru taiou tenshugou ruijido no gakushuu],

[C134] A. Kanezaki, E. Rodola, D. Cremers and T. Harada,
[Taiou tenshugou ruijido gakushuu wo mochiita goutai-higoutai buttai kenshutsu],

[C135] 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.

[C136] O. Dunkley, J. Engel, J. Sturm and D. Cremers,
Visual-Inertial Navigation for a Camera-Equipped 25g Nano-Quadrotor,

[C137] 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.

[C138] S. Debnath, S. S. Baishya, R. Triebel, V. Dutt and D. Cremers,
Environment-adaptive Learning: How Clustering Helps to Obtain Good Training Data,

[C139] 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.

[C140] 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.

[C141] 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.
All: 1

List of Publications

[C142] J. Stueckler and S. Behnke,
Adaptive Tool-Use Strategies for Anthropomorphic Service Robots,
Proc. of the 14th IEEE-RAS International Conference on Humanoid Robots (Humanoids),
to appear, November 2014.

[C143] D. Droeschel, J. Stueckler and S. Behnke,
Local Multi-Resolution Surfel Grids for MAV Motion Estimation and 3D Mapping,
Proc. of the 13th International Conference on Intelligent Autonomous Systems (IAS),

[C144] 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.

[C145] J. Stueckler and S. Behnke,
Efficient deformable registration of multi-resolution surfel maps for object manipulation skill transfer,

[C146] 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.

[C147] M. Schwarz, J. Stueckler and S. Behnke,
Mobile Teleoperation Interfaces with Adjustable Autonomy for Personal Service Robots,

[C148] F. R. Schmidt, T. Windheuser, U. Schlickewei and D. Cremers,
Dense Elastic 3D Shape Matching,

[C149] Bergbauer, Julia, Tari and Sibel,
Wimmelbild Analysis with Approximate Curvature Coding Distance Images,

[C150] Bergbauer, Julia, Tari and Sibel,
Top-down visual search in Wimmelbild,

[C151] F. Bergamasco, A. Albarelli, E. Rodola and A. Torsello,
Can a fully unconstrained imaging model be applied effectively to central cameras?,
2013.
[C152] M. Souiai, C. Nieuwenhuis, E. Strekalovskiy and D. Cremers, 
Convex Optimization for Scene Understanding, 
ICCV Workshop on Graphical Models for Scene Understanding, 2013.

[C153] 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.

[C154] V. Golkov, T. Sprenger, A. Menini, M.I. Menzel, D. Cremers and J.I. Sperl, 
Effects of Low-Rank Constraints, Line-Process Denoising, and q-Space Compressed Sensing on Diffusion MR Image Reconstruction and Kurtosis Tensor Estimation, 
2013, Oral Presentation.

[C155] 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, 
2013, Certificate of Merit Award.

[C156] 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.

[C157] V. Golkov, M.I. Menzel, T. Sprenger, A. Menini, D. Cremers and J.I. Sperl, 
Corrected Joint SENSE Reconstruction, Low-Rank Constraints, and Compressed-Sensing-Accelerated Diffusion Spectrum Imaging in Denoising and Kurtosis Tensor Estimation, 
ISMRM Workshop on Diffusion as a Probe of Neural Tissue Microstructure, 2013.

SNR-dependent Quality Assessment of Compressed-Sensing-Accelerated Diffusion Spectrum Imaging Using a Fiber Crossing Phantom, 
2013.

Phase Sensitive Reconstruction in Diffusion Spectrum Imaging Enabling Velocity Encoding and Unbiased Noise Distribution, 
2013.

Noise Reduction in Accelerated Diffusion Spectrum Imaging through Integration of SENSE Reconstruction into Joint Reconstruction in Combination with q-Space Compressed Sensing, 
2013.

[C161] C. Kerl, J. Sturm and D. Cremers, 
Robust Odometry Estimation for RGB-D Cameras, 
May 2013, Best Vision Paper Award - Finalist.
All: 1

List of Publications

[C162] E. Toeppe, C. Nieuwenhuis and D. Cremers,
Volume Constraints for Single View Reconstruction,
Portland, USA, 2013.

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

[C164] H. Grimmett, R. Paul, R. Triebel and I. Posner,
Knowing When We Don't Know: Introspective Classification for Mission-Critical Decision Making,

[C165] D. Weikersdorfer, A. Schick and D. Cremers,

[C166] 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,

[C168] E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers,
Real-Time Camera Tracking and 3D Reconstruction Using Signed Distance Functions,

[C169] 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.

[C170] 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.

[C171] M. Souiai, E. Strekalovskiy, C. Nieuwenhuis and D. Cremers,

[C172] F. Stangl, M. Souiai and D. Cremers,
Performance Evaluation of Narrow Band Methods for Variational Stereo,
35th German Conference on Pattern Recognition (GCPR), 2013.
[C173] T. Möllenhoff, C. Nieuwenhuis, E. Toeppe and D. Cremers,
Efficient Convex Optimization for Minimal Partition Problems with Volume
Constraints,
2013.

[C174] C. Kerl, J. Sturm and D. Cremers,
Dense Visual SLAM for RGB-D Cameras,

[C175] T. Naseer, J. Sturm and D. Cremers,
FollowMe: Person Following and Gesture Recognition with a Quadrocopter,

[C176] 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.

[C177] 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.

[C178] 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.

[C179] 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.

[C180] E. Rodola, T. Harada, Y. Kuniyoshi and D. Cremers,
Efficient Shape Matching using Vector Extrapolation,
2013.

[C181] J. Engel, J. Sturm and D. Cremers,
Semi-Dense Visual Odometry for a Monocular Camera,
Sydney, Australia, December 2013.

[C182] E. Rodola, A. Torsello, T. Harada, Y. Kuniyoshi and D. Cremers,
Elastic Net Constraints for Shape Matching,
Sydney, Australia, December 2013.

[C183] J. Lellmann, E. Strekalovskiy, S. Koetter and D. Cremers,
Total Variation Regularization for Functions with Values in a Manifold,
Sydney, Australia, December 2013.

[C184] C. Nieuwenhuis, E. Strekalovskiy and D. Cremers,
Proportion Priors for Image Sequence Segmentation,
Sydney, Australia, December 2013.
[C185] J. Stühmer, P. Schröder and D. Cremers,
*Tree Shape Priors with Connectivity Constraints using Convex Relaxation on General Graphs*,
Sydney, Australia, December 2013, **Oral Presentation**.

[C186] 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.

[C187] 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.

[C188] F. Steinbruecker, C. Kerl, J. Sturm and D. Cremers,
*Large-Scale Multi-Resolution Surface Reconstruction from RGB-D Sequences*,
Sydney, Australia, 2013.

[C189] 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.

[C190] R. Triebel, H. Grimmert, R. Paul and I. Posner,
*Driven Learning for Driving: How Introspection Improves Semantic Mapping*,
The International Symposium on Robotics Research (ISRR), 2013.

[C191] D. Cremers, E. Rodola and T. Windheuser,
*Relaxations for Minimizing Metric Distortion and Elastic Energies for 3D Shape Matching*,

[C192] M. Schadler, J. Stueckler and S. Behnke,
*Multi-resolution surfel mapping and real-time pose tracking using a continuously rotating 2D laser scanner*,

[C193] J. Stueckler and S. Behnke,
*Efficient Dense 3D Rigid-Body Motion Segmentation in RGB-D Video*,

[C194] M. McElhone, J. Stueckler and S. Behnke,
*Joint detection and pose tracking of multi-resolution surfel models in RGB-D*,

[C195] T. Fiolka, J. Stueckler, D. A. Klein, D. Schulz and S. Behnke,
*Distinctive 3D surface entropy features for place recognition*,


[C207] L. Zhang, J. Sturm, D. Cremers and D. Lee,
Real-Time Human Motion Tracking using Multiple Depth Cameras,

[C208] E. Strekalovskiy, C. Nieuwenhuis and D. Cremers,
Nonmetric Priors for Continuous Multilabel Optimization,
Firenze, Italy, Springer, October 2012.

[C209] T. Windheuser, H. Ishikawa and D. Cremers,
Generalized Roof Duality for Multi-Label Optimization: Optimal Lower Bounds and Persistency,
Firenze, Italy, October 2012.

[C210] T. Windheuser, H. Ishikawa and D. Cremers,
QPBO [QPBO arugorizumu no tachika ni yoru hiretsu mojura enerugi saishoka],
Meeting on Image Recognition and Understanding, Fukuoka, Japan, August 2012.

[C211] M. R. Oswald, E. Toeppe and D. Cremers,
Fast and Globally Optimal Single View Reconstruction of Curved Objects,
Providence, Rhode Island, 534-541, June 2012.

[C212] E. Strekalovskiy, A. Chambolle and D. Cremers,
A Convex Representation for the Vectorial Mumford-Shah Functional,
Providence, Rhode Island, June 2012.

[C213] J. Engel, J. Sturm and D. Cremers,
Camera-Based Navigation of a Low-Cost Quadrocopter,

[C214] J. Sturm, N. Engelhard, F. Endres, W. Burgard and D. Cremers,
A Benchmark for the Evaluation of RGB-D SLAM Systems,

[C215] J. Engel, J. Sturm and D. Cremers,
Accurate Figure Flying with a Quadrocopter Using Onboard Visual and Inertial Sensing,

[C216] 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,
2012.
Comparison of Diffusion Kurtosis Tensor Estimation Methods in an Advanced Quality Assessment Framework,
2012.

[C219] 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,

[C221] R. Triebel, R. Paul, D. Rus and P. Newman,
Parsing Outdoor Scenes from Streamed 3D Laser Data Using Online Clustering and Incremental Belief Updates,

[C222] 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.

[C223] 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.

[C224] 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.

[C225] 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.

[C226] T. Fiolka, J. Stueckler, D. A. Klein, D. Schulz and S. Behnke,
SURE: Surface Entropy for Distinctive 3D Features,

[C227] G. M. Garcia, D. A. Klein, J. Stueckler, S. Frintrop and A. B. Cremers,
Adaptive Multi-cue 3D Tracking of Arbitrary Objects,

[C228] J. Stueckler and S. Behnke,
Model Learning and Real-Time Tracking Using Multi-Resolution Surfel Maps,
2012.
[C229] M. Nieuwenhuisen, J. Stueckler, A. Berner, R. Klein and S. Behnke, 
Shape-Primitive Based Object Recognition and Grasping,

[C230] J. Kläs, J. Stueckler and S. Behnke, 
Efficient Mobile Robot Navigation using 3D Surfel Grid Maps,

[C231] J. Stueckler and S. Behnke, 
Robust Real-Time Registration of RGB-D Images using Multi-Resolution Surfel Representations,

[C232] V. Usenko, F. Seidel, Z. Marton, D. Pangeric and M. Beetz, 
Furniture Classification using WWW CAD Models,

[C233] F. R. Schmidt and Y. Boykov, 
Hausdorff Distance Constraint for Multi-Surface Segmentation,

[C234] L. Gorelick, F. R. Schmidt, Y. Boykov, A. Delong and A. Ward, 
Segmentation with non-linear regional constraints via line-search cuts,

[C235] A. Torsello, E. Rodola and A. Albarelli, 
Multiview Registration via Graph Diffusion of Dual Quaternions, 
2441-2448, 2011.

[C236] F. Bergamasco, A. Albarelli, E. Rodola and A. Torsello, 
RUNE-Tag: a High Accuracy Fiducial Marker with Strong Occlusion Resilience, 
113-120, 2011.

[C237] A. Albarelli, E. Rodola and A. Torsello, 
A Non-Cooperative Game for 3D Object Recognition in Cluttered Scenes, 
International Conference on 3D Imaging, Modeling, Processing, Visualization and Transmission (3DIMPVT), 252-259, 2011.

[C238] A. Torsello, E. Rodola and A. Albarelli, 
Sampling Relevant Points for Surface Registration, 
International Conference on 3D Imaging, Modeling, Processing, Visualization and Transmission (3DIMPVT), 290-295, 2011.

[C239] T. Windheuser, U. Schlickewei, F. R. Schmidt and D. Cremers, 
Geometrically Consistent Elastic Matching of 3D Shapes: A Linear Programming Solution, 
2011.

[C240] M. Aubry, U. Schlickewei and D. Cremers, 
Pose-Consistent 3D Shape Segmentation Based on a Quantum Mechanical Feature Descriptor, 
Frankfurt, Germany, Springer, 2011.
[C241] T. Schoenemann, S. Masnou and D. Cremers,
On a linear programming approach to the discrete Willmore boundary value
problem and generalizations,

[C242] E. Strekalovskiy and D. Cremers,
Total Variation for Cyclic Structures: Convex Relaxation and Efficient Mini-
mization,

[C243] B. Goldluecke and D. Cremers,
Introducing Total Curvature for Image Processing,
2011.

[C244] E. Strekalovskiy, B. Goldluecke and D. Cremers,
Tight Convex Relaxations for Vector-Valued Labeling Problems,
2011.

[C245] M. Aubry, K. Kolev, B. Goldluecke and D. Cremers,
Decoupling Photometry and Geometry in Dense Variational Camera Calibra-
tion,
2011.

[C246] E. Strekalovskiy and D. Cremers,
Generalized Ordering Constraints for Multilabel Optimization,
2011.

[C247] 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.

[C248] N. Engelhard, F. Endres, J. Hess, J. Sturm and W. Burgard,
Real-time 3D visual SLAM with a hand-held camera,
*Proc. of the RGB-D Workshop on 3D Perception in Robotics at the European Robotics

and R. Siegwart,
Towards a benchmark for RGB-D SLAM evaluation,
*Proc. of the RGB-D Workshop on Advanced Reasoning with Depth Cameras at Robotics:
Science and Systems Conf. (RSS)*, Los Angeles, USA, June 2011.

[C250] C. Nieuwenhuis, E. Toeppe and D. Cremers,
Space-Varying Color Distributions for Interactive Multiregion Segmentation:
Discrete versus Continuous Approaches,
177-190, 2011.

[C251] M. Klodt and D. Cremers,
A Convex Framework for Image Segmentation with Moment Constraints,
2011.
All: 1  List of Publications

[C252] 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.

[C253] 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.

[C255] M. Schikora, M. Oispuu, W. Koch and D. Cremers,
**Multiple Source Localization Based on Biased Bearings Using the Intensity Filter - Approach and Experimental Results**, 

[C256] 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.

[C257] 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.

[C258] 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.

[C259] M. Schikora, W. Koch and D. Cremers,
**Multi-object tracking via high accuracy optical flow and finite set statistics**, 

[C260] E. Toeppe, M. R. Oswald, D. Cremers and C. Rother,
**Silhouette-Based Variational Methods for Single View Reconstruction**, 
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,

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

J. Maye, R. Triebel, L. Spinello and R. Siegwart,
Bayesian On-line Learning of Driving Behaviors,
2011.

B. Oehler, J. Stueckler, J. Welle, D. Schulz and S. Behnke,
Efficient Multi-resolution Plane Segmentation of 3D Point Clouds,

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.

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.

J. Stueckler and S. Behnke,
Compliant Task-Space Control with Back-Drivable Servo Actuators,

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.

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.

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

F. R. Schmidt, H. Ackermann and B. Rosenhahn,
Multilinear Model Estimation with L2-Regularization,
All: 1

List of Publications

[C272] A. Delong, L. Gorelick, F. R. Schmidt, O. Veksler and Y. Boykov,
Interactive Segmentation with Super-Labels,

[C273] A. Albarelli, E. Rodola and A. Torsello,
Robust Camera Calibration using Inaccurate Targets,
2010.

[C274] 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.

[C275] A. Albarelli, E. Rodola, A. Cavallarin and A. Torsello,
Robust Figure Extraction on Textured Background: a Game-Theoretic Approach,

[C276] E. Rodola, A. Albarelli and A. Torsello,
A Game-Theoretic Approach to the Enforcement of Global Consistency in Multi-View Feature Matching,

[C277] A. Albarelli, E. Rodola and A. Torsello,
A Game-Theoretic Approach to Fine Surface Registration without Initial Motion Estimation,

[C278] 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.

[C279] A. Albarelli, E. Rodola and A. Torsello,
Loosely Distinctive Features for Robust Surface Alignment,
519-532, 2010.

[C280] 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.

[C281] M. Schikora, D. Bender, D. Cremers and W. Koch,
Passive Multi-Object Localization and Tracking Using Bearing Data,

[C282] M. Schikora, D. Bender, W. Koch and D. Cremers,
Multi-target multi-sensor localization and tracking using passive antenna and optical sensors on UAVs,
[C283] E. Toeppe, M. R. Oswald, D. Cremers and C. Rother, Image-based 3D Modeling via Cheeger Sets, Queenstown, New Zealand, 53-64, November 2010, Received Honorable Mention Award.


[C294] R. Kaestner, N. Engelhard, R. Triebel and R. Siegwart,
**A Bayesian Approach to Learning 3D Representations of Dynamic Environments,**

[C295] L. Spinello, R. Triebel, D. Vasquez, K. Arras and R Siegwart,
**Exploiting Repetitive Object Patterns for Model Compression and Completion,**
*European Conference on Computer Vision,* 2010.

[C296] R. Triebel, J. Shin and R. Siegwart,
**Segmentation and Unsupervised Part-based Discovery of Repetitive Objects,**

[C297] 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.

[C298] J. Shin, R. Triebel and R. Siegwart,
**Unsupervised Discovery of Repetitive Objects,**
2010.

[C299] J. Maye, L. Spinello, R. Triebel and R. Siegwart,
**Inferring the Semantics of Direction Signs in Public Places,**
2010.

[C300] K. Gräve, 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.

[C301] 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.

[C302] J. Stueckler and S. Behnke,
**Improving People Awareness of Service Robots by Semantic Scene Knowledge,**

[C303] D. Holz, R. Schnabel, D. Droeschel, J. Stueckler and S. Behnke,
**Towards Semantic Scene Analysis with Time-of-flight Cameras,**

[C304] H. Schulz, W. Liu, J. Stueckler and S. Behnke,
**Utilizing the Structure of Field Lines for Efficient Soccer Robot Localization,**
K. Gräve, J. Stueckler and S. Behnke,
Learning Motion Skills from Expert Demonstrations and Own Experience using Gaussian Process Regression,

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

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.

D. Droeschel, D. Holz, J. Stueckler and S. Behnke,
Using Time-of-Flight cameras with active gaze control for 3D collision avoidance,

Mösenlechner, Lorenz, Demmel, Nikolaus, Beetz and Michael,
Becoming action-aware through reasoning about logged plan execution traces, 2231-2236, 2010.

A. Albarelli, E. Rodola, S. Rota Bulo and A. Torsello,
Fast 3D surface reconstruction by unambiguous compound phase coding,

M. R. Oswald, E. Toeppe, K. Kolev and D. Cremers,
Non-Parametric Single View Reconstruction of Curved Objects using Convex Optimization,
Jena, Germany, 171-180, September 2009, Received a DAGM Paper Award.

F. R. Schmidt and D. Cremers,
A Closed-Form Solution for Image Sequence Segmentation with Dynamical Shape Priors,
Jena, Germany, September 2009.

F. R. Schmidt, E. Toeppe and D. Cremers,
Efficient Planar Graph Cuts with Applications in Computer Vision,
Miami, Florida, 351-356, June 2009, Received a CVPR Doctoral Spotlight Award.

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

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

B. Goldluecke and D. Cremers,
A Superresolution Framework for High-Accuracy Multiview Reconstruction,
Jena, Germany, 2009, Received DAGM Best Paper Award.
[C317] B. Goldluecke and D. Cremers,  
Superresolution Texture Maps for Multiview Reconstruction,  
Kyoto, Japan, 2009.

[C318] A. Sellent, M. Eisemann, B. Goldluecke, T. Pock, D. Cremers and M. Magnor,  
Variational Optical Flow from Alternate Exposure Images,  
135-143, 2009.

[C319] T. Pock, D. Cremers, H. Bischof and A. Chambolle,  
An Algorithm for Minimizing the Piecewise Smooth Mumford-Shah Functional,  
Kyoto, Japan, 2009.

[C320] A. Wedel, D. Cremers, T. Pock and H. Bischof,  
Structure- and Motion-adaptive Regularization for High Accuracy Optic Flow,  
Kyoto, Japan, 2009.

[C321] T. Schoenemann, F. Kahl and D. Cremers,  
Curvature Regularity for Region-based Image Segmentation and Inpainting:  
A Linear Programming Relaxation,  
Kyoto, Japan, 2009.

[C322] T. Windheuser, T. Schoenemann and D. Cremers,  
Beyond Connecting the Dots: A Polynomial-time Algorithm for Segmentation and Boundary Estimation with Imprecise User Input,  
Kyoto, Japan, 2009.

[C323] F. Steinbruecker, T. Pock and D. Cremers,  
Large Displacement Optical Flow Computation without Warping,  
Kyoto, Japan, 2009.

[C324] D. Mitzel, T. Pock, T. Schoenemann and D. Cremers,  
Video Super Resolution using Duality Based TV-L1 Optical Flow,  
Jena, Germany, 2009.

[C325] B. Berkels, C. Nieuwenhuis, C. Garbe and M. Rumpf,  
Reconstructing Optical Flow Fields by Motion Inpainting,  

[C326] C. Eppner, J. Sturm, M. Bennewitz, C. Stachniss and W. Burgard,  
Imitation Learning with Generalized Task Descriptions,  
Kobe, Japan, May 2009.

[C327] H. Schulz, L. Ott, J. Sturm and W. Burgard,  
Learning Kinematics from Direct Self-Observation Using Nearest-Neighbor Methods,  

[C328] J. Sturm, C. Stachniss, V. Pradeep, C. Plagemann, K. Konolige and W. Burgard,  
Towards Understanding Articulated Objects,  
Learning Kinematic Models for Articulated Objects, 
Proc. of the International Joint Conference on Artificial Intelligence (IJCAI), July 2009.

[C330] D. Meyer-Delius, J. Sturm and W. Burgard, 
Regression-Based Online Situation Recognition for Vehicular Traffic Scenarios, 

[C331] A. Schneider, J. Sturm, C. Stachniss, M. Reisert, H. Burkhardt and W. Burgard, 
Object Identification with Tactile Sensors Using Bag-of-Features, 

[C332] F. Steinbruecker, T. Pock and D. Cremers, 
Advanced Data Terms for Variational Optic Flow Estimation, 
Braunschweig, Germany, 2009.

[C333] 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.

[C334] 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.

[C335] M. Schikora, M. Häge, 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.

[C336] L. Spinello, A. Macho, R. Triebel and R. Siegwart, 
Detecting Pedestrians at Very Small Scales, 

[C337] L. Spinello, R. Triebel and R. Siegwart, 
Multiclass Multimodal Detection and Tracking in Urban Environments, 
Proc. of Field and Service Robotics (FSR), 2009.

[C338] D. Engel, L. Spinello, R. Triebel, C. Curio, R. Siegwart and H. Bülthoff, 
Medial Features for Superpixel Segmentation, 

[C339] 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.

[C340] J. Stueckler, M. Schreiber and S. Behnke, 
Dynamaid, an Anthropomorphic Robot for Research on Domestic Service Applications, 
[C341] T. Schoenemann, F. R. Schmidt and D. Cremers,
Image Segmentation with Elastic Shape Priors via Global Geodesics in Product Spaces,

[C342] T. Pock, T. Schoenemann, G. Graber, H. Bischof and D. Cremers,
A Convex Formulation of Continuous Multi-Label Problems,
Marseille, France, October 2008.

[C343] A. Wedel, C. Rabe, T. Vaudrey, T. Brox, U. Franke and D. Cremers,
Efficient Dense Scene Flow from Sparse or Dense Stereo Data,
Marseille, France, October 2008.

[C344] A. Wedel, T. Pock, J. Braun, U. Franke and D. Cremers,
Duality TV-L1 Flow with Fundamental Matrix Prior,

[C345] 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.

[C346] A. Wedel, T. Pock, C. Zach, D. Cremers and H. Bischof,
An Improved Algorithm for TV-L1 Optical Flow,

[C347] W. Trobin, T. Pock, D. Cremers and H. Bischof,
An Unbiased Second-Order Prior for High-Accuracy Motion Estimation,
Munich, Germany, Springer, , June 2008.

Markerless Motion Capture of Man-Machine Interaction,
Anchorage, Alaska, June 2008.

[C349] T. Schoenemann and D. Cremers,
Matching Non-rigidly Deformable Shapes Across Images: A Globally Optimal Solution,
Anchorage, Alaska, June 2008.

[C350] T. Schoenemann and D. Cremers,
Globally Optimal Shape-based Tracking in Real-time,
Anchorage, Alaska, June 2008.

[C351] T. Schoenemann and D. Cremers,
High Resolution Motion Layer Decomposition using Dual-space Graph Cuts,
Anchorage, Alaska, June 2008.

[C352] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,
Modeling and Tracking Line-Constrained Mechanical Systems,

[C353] 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.
C. Nieuwenhuis, R. Mester and C. Garbe,
A Statistical Confidence Measure for Optical Flows,
Marseille, France, 290-301, October 2008.

B. Andres, C. Nieuwenhuis, D. Kondermann, U. Köthe and R. Hamprecht,
On Errors-In-Variables Regression with Arbitrary Covariance and its Application to Optical Flow Estimation,
Anchorage, Alaska, 1-6, June 2008.

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

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

J. Sturm, C. Plagemann and W. Burgard,
Adaptive Body Scheme Models for Robust Robotic Manipulation,
Robotics: Science and Systems Conference (RSS), Zurich, Switzerland, June 2008.

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

Kondermann, D., Nieuwenhuis, C., Berthe, A., Kertzscher, U., Garbe and C.,
Motion Estimation Based on a Temporal Model of Fluid Flows,

L. Spinello, R. Triebel and R. Siegwart,
Multimodal Detection and Tracking of Pedestrians in Urban Environments with Explicit Ground Plane Extraction,

L. Spinello, R. Triebel and R. Siegwart,
Multimodal People Detection and Tracking in Crowded Scenes,

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

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.

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.
All: 1

List of Publications

[C366] S. May, M. Klodt, E. Rome and R. Breithaupt,
GPU-accelerated Affordance Cueing based on Visual Attention,

[C367] K. Kolev, M. Klodt, T. Brox and D. Cremers,
Propagated Photoconsistency and Convexity in Variational Multiview 3D Reconstruction,

[C368] K. Kolev, M. Klodt, T. Brox, S. Esedoglu and D. Cremers,
Continuous Global Optimization in Multiview 3D Reconstruction,

[C369] T. Brox, B. Rosenhahn, D. Cremers and H.-P. Seidel,
Nonparametric density estimation with adaptive anisotropic kernels for human motion tracking,

[C370] T. Schoenemann and D. Cremers,
Globally Optimal Image Segmentation with an Elastic Shape Prior,
Rio de Janeiro, Brazil, October 2007.

[C371] T. Schoenemann and D. Cremers,
Introducing Curvature into Globally Optimal Image Segmentation: Minimum Ratio Cycles on Product Graphs,
Rio de Janeiro, Brazil, October 2007.

[C372] F. R. Schmidt, Dirk Farin and D. Cremers,
Fast Matching of Planar Shapes in Sub-cubic Runtime,
Rio de Janeiro, Brazil, October 2007.

[C373] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov,
Intrinsic Mean for Semimetric Shape Retrieval via Graph Cuts,

[C374] A. Wedel and U. Franke,
Monocular Video Serves RADAR-based Emergency Braking,
*Intelligent Vehicles*, Istanbul, Turkey, June 2007.

[C375] A. Wedel, T. Schoenemann, T. Brox and D. Cremers,
WarpCut - Fast obstacle segmentation in monocular video,

[C376] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,
Online smoothing for markerless motion capture,

[C377] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov,
Efficient Shape Matching via Graph Cuts,
[C378] B. Rosenhahn, T. Brox and H.-P. Seidel,  
Scaled motion dynamics for markerless motion capture,  
2007.

[C379] D. Cremers,  
Nonlinear Dynamical Shape Priors for Level Set Segmentation,  
2007.

[C380] T. Brox and D. Cremers,  
On the Statistical Interpretation of the Piecewise Smooth Mumford-Shah Functional,  

[C381] C. Schmaltz, B. Rosenhahn, T. Brox, D. Cremers, J. Weickert, L. Wietzke and G. Sommer,  
Region-based Pose Tracking,  

[C382] D. Cremers, O. Fluck, M. Rousson and S. Aharon,  
A probabilistic level set formulation for interactive organ segmentation,  

[C383] C. Nieuwenhuis, D. Kondermann and B. Jähne,  
An Adaptive Confidence Measure for Optical Flows Based on Linear Subspace Projections,  

[C384] C. Nieuwenhuis, D. Kondermann and M. Yan,  
Blood vessel classification into arteries and veins in retinal images,  

[C385] R. Triebel, O. Martinez Mozos and W. Burgard,  
Collective Classification for Labeling of Places and Objects in 2D and 3D Range Data,  

[C386] R. Kümmerle, P. Pfaff, R. Triebel and W. Burgard,  
Active Monte Carlo Localization in Outdoor Terrains using Multi-Level Surface Maps,  
Fachgespräche Autonome Mobile Systeme (AMS), 2007.

[C387] R. Triebel and W. Burgard,  
Recovering the Shape of Objects in 3D Point Clouds with Partial Occlusions,  

[C388] R. Kümmerle, R. Triebel, P. Pfaff, and W. Burgard,  
Monte Carlo Localization in Outdoor Terrains using Multi-Level Surface Maps,  

[C389] P. Pfaff, R. Triebel, C. Stachniss, P. Lamon, W. Burgard and R. Siegwart,  
Towards Mapping of Cities,  
2007.


[C401] 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,

[C402] D. Cremers and L. Grady,
Statistical priors for combinatorial optimization: efficient solutions via Graph Cuts,

[C403] D. Cremers, C. Guetter and C. Xu,
Nonparametric priors on the space of joint intensity distributions for non-rigid multi-modal image registration,

[C404] O. Fluck, S. Aharon, D. Cremers and M. Rousson,
GPU histogram computation,
2006.

[C405] T. Kohlberger, D. Cremers, M. Rousson and R. Ramaraj,
4D shape priors for level set segmentation of the left myocardium in SPECT sequences,
, Vol. 4190, 92-100, October 2006.

[C406] C. Nieuwenhuis and M. Yan,
Knowledge Based Image Enhancement Using Neural Networks,

[C407] D. A. van Soest, M. de Greef, J. Sturm and A. Visser,
Autonomous Color Learning in an Artificial Environment,

[C408] J. Sturm, P. van Rossum and A. Visser,
Panoramic Localization in the 4-Legged League,

[C409] A. Visser, J. Sturm and F.C.A. Groen,
Robot companion localization at home and in the office,

[C410] A. Visser, P. van Rossum, J. Westra, J. Sturm, D. A. van Soest and M. de Greef,
Dutch AIBO Team at RoboCup 2006,

[C411] R. Triebel, P. Pfaff and W. Burgard,
Multi-Level Surface Maps for Outdoor Terrain Mapping and Loop Closing,
All: 1

List of Publications

[C412] R. Triebel, K. Kersting and W. Burgard,  
Robust 3D Scan Point Classification using Associative Markov Networks,  
2006.

[C413] 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.

[C415] M. Breus, T. Brox, T. Sonar and J. Weickert,  
Stabilised nonlinear inverse diffusion for approximating hyperbolic PDEs,  

[C416] T. Brox, B. Rosenhahn and J. Weickert,  
Three-dimensional shape knowledge for joint image segmentation and pose estimation,  

[C417] D. Cremers and G. Funka-Lea,  
Dynamical statistical shape priors for level set based tracking,  

[C418] S. Manay, D. Cremers, A. J. Yezzi and S. Soatto,  
One-shot integral invariant shape priors for variational segmentation,  

[C419] B. Rosenhahn, U. Kersting, D. Smith, J. Gurney, T. Brox and R. Klette,  
A system for marker-less human motion estimation,  

[C420] M. Rousson and D. Cremers,  
Efficient kernel density estimation of shape and intensity priors for level set segmentation,  

[C421] M. Welk, D. Theis, T. Brox and J. Weickert,  
PDE based deconvolution with forward-backward diffusivities and diffusion tensors,  

[C422] B. Goldluecke and M. Magnor,  
Spacetime-Continuous Geometry Meshes from Multi-View Video Sequences,  
[C423] I. Ihrke, B. Goldluecke and M. Magnor, 
Reconstructing the Geometry of Flowing Water, 

[C424] N. Wijngaards, F. Dignum, P. Jonker, T. de Ridder, A. Visser, S. Leijnen and J. Sturm, 
Dutch AIBO Team at RoboCup 2005, 

[C425] H. Andreasson, R. Triebel and W. Burgard, 
Improving Plane Extraction from 3D Data by Fusing Laser Data and Vision, 

[C426] 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.

[C427] R. Triebel, W. Burgard and F. Dellaert, 
Using Hierarchical EM to Extract Planes from 3D Range Scans, 2005.

[C428] T. Brox, A. Bruhn, N. Papenberg and J. Weickert, 
High accuracy optical flow estimation based on a theory for warping, 

[C429] T. Brox and J. Weickert, 
A TV flow based local scale measure for texture discrimination, 

[C430] T. Brox and J. Weickert, 
Level set based segmentation of multiple objects, 

[C431] D. Cremers, S. J. Osher and S. Soatto, 
Kernel density estimation and intrinsic alignment for knowledge-driven segmentation: Teaching level sets to walk, 

[C432] D. Cremers, N. Sochen and C. Schnörr, 
Multiphase dynamic labeling for variational recognition-driven image segmentation, 

[C433] H. Jin, D. Cremers, A. Yezzi and S. Soatto, 
Shedding light on stereoscopic segmentation, 

[C434] M. Magnor and B. Goldluecke, 
Spacetime-coherent Geometry Reconstruction from Multiple Video Streams, 
[C435] B. Goldluecke and M. Magnor, 

[C436] B. Goldluecke and M. Magnor, 

[C437] R. Triebel, B. Frank, J. Meyer and W. Burgard, 
First steps towards a robotic system for flexible volumetric mapping of indoor environments, 

[C438] T. Brox, M. Rousson, R. Deriche and J. Weickert, 
Unsupervised segmentation incorporating colour, texture, and motion, 

[C439] T. Brox, M. Welk, G. Steidl and J. Weickert, 
Equivalence results for TV diffusion and TV regularisation, 

[C440] D. Cremers, 
A variational framework for image segmentation combining motion estimation and shape regularization, 

[C441] D. Cremers, 
A multiphase level set framework for variational motion segmentation, 

[C442] D. Cremers and S. Soatto, 
A pseudo-distance for shape priors in level set segmentation, 

[C443] D. Cremers and S. Soatto, 
Variational space-time motion segmentation, 

[C444] D. Cremers, N. Sochen and C. Schnörr, 
Towards Recognition-based Variational Segmentation Using Shape Priors and Dynamic Labeling, 

[C445] D. Cremers and A. L. Yuille, 
A generative model based approach to motion segmentation, 
[C446] G. Doretto, D. Cremers, P. Favaro and S. Soatto, 
**Dynamic texture segmentation**, 

[C447] M. Rousson, T. Brox and R. Deriche, 
**Active unsupervised texture segmentation on a diffusion based feature space**, 

[C448] B. Goldluecke and M. Magnor, 
**Joint 3D Reconstruction and Background Separation in Multiple Views using Graph Cuts**, 

[C449] B. Goldluecke and M. Magnor, 
**Real-time Microfacet Billboarding for Free-viewpoint Video Rendering**, 

[C450] B. Goldluecke and M. Magnor, 
**Real-time, Free-viewpoint Video Rendering from Volumetric Geometry**, 

[C451] C. Petz, B. Goldluecke and M. Magnor, 
**Hardware-accelerated Autostereogram Rendering for Interactive 3D Visualization**, 

**A system for volumetric robotic mapping of underground mines**, 

[C453] D. Hähnel, R. Triebel, W. Burgard and S. Thrun, 
**Map Building with Mobile Robots in Dynamic Environments**, 

[C454] T. Brox and J. Weickert, 
**Nonlinear matrix diffusion for optic flow estimation**, 

[C455] J. Keuchel, C. Schnörr, C. Schellewald and D. Cremers, 
**Unsupervised Image Partitioning with Semidefinite Programmifng**, 

[C456] D. Cremers, T. Kohlberger and C. Schnörr, 
**Nonlinear shape statistics in Mumford–Shah based segmentation**, 

[C457] D. Cremers and C. Schnörr, 
**Motion Competition: variational integration of motion segmentation and shape regularization**, 
All: 1

List of Publications

[C458] 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.

[C459] J. Weickert and T. Brox,
Diffusion and regularization of vector- and matrix-valued images,

[C460] B. Goldluecke, M. Magnor and B. Wilburn,

[C461] T. Brox, D. Furin and P. H. N. de With,
Multi-stage region merging for image segmentation,

[C462] D. Cremers, T. Kohlberger and C. Schnörr,
Nonlinear shape statistics via kernel spaces,

[C463] 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, , Vol. 2191, 353-360, Sept. 2001, Received a DAGM Paper Award.

[C464] 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.

[C465] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Learning of translation invariant shape knowledge for steering diffusion snakes,

[C466] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Diffusion Snakes using statistical shape knowledge,

PhDThesis

[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.
List of Publications

[PhD2] K. Kolev,
Convexity in Image-Based 3D Surface Reconstruction,
Department of Computer Science, Technical University Munich, Germany, January 2012.

[PhD3] 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.

[PhD4] C. Nieuwenhuis,
Restoration and Prostprocessing of Optical Flows,
Faculty of Mathematics and Computer Science, Heidelberg University, Germany, July 2009.

[PhD5] T. Schoenemann,
Combinatorial Solutions for Shape Optimization in Computer Vision,
Department of Computer Science, University of Bonn, Germany, 2008.

[PhD6] B. Goldluecke,
Multi-Camera Reconstruction and Rendering for Free-viewpoint Video,
Max-Planck-Institute for Computer Science, Saarbrücken, Germany, July 2006.

[PhD7] T. Brox,
From pixels to regions: partial differential equations in image analysis,
Faculty of Mathematics and Computer Science, Saarland University, Germany, April 2005.

[PhD8] D. Cremers,
Statistical shape knowledge in variational image segmentation,
Department of Mathematics and Computer Science, University of Mannheim, Germany, 2002.

MastersThesis

[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.
[M6] R. Maier,  
Out-of-Core Bundle Adjustment for 3D Workpiece Reconstruction,  
Technische Universität München, Germany, September 2013.

[M7] M. Brandl,  
Face recognition with wave kernel signatures using a depth camera,  
Technical University of Munich, Germany, Aug. 2012.

[M8] C. Kerl,  
Odometry from RGB-D Cameras for Autonomous Quadrocopters,  
Technical University Munich, Germany, Nov. 2012.

[M9] 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.

[M10] M. Souiai,  
Newton Methods for Total Variation Minimization,  
Computer Vision Group, TU Munich, Germany, June 2010.

[M11] J. Stühmer,  
Ein Variationsansatz zur Schätzung von dichten Tiefenkarten im Kontext des Structure-from-Motion,  
TU Dresden, Germany, July 2010.

[M12] E. Toeppe,  
Shape Matching mittels Graph Cuts,  
University of Bonn, 2008, Awarded Best Master Thesis of the Year (Bonn Society for Computer Science).

[M13] M. R. Oswald,  
Reliability Estimation Methods and their Efficient Implementation,  
Universidad Tecnica Federico Santa Maria, Valparaiso, Chile, June 2008.

[M14] M. R. Oswald,  
Concurrent Stereo Reconstruction,  
Technische Universität Dresden, Germany, June 2007.

[M15] A. Wedel,  
Detektion stationärer Hindernisse in monokularen Bildsequenzen,  
Computer Vision Group, University of Bonn, Germany, April 2006.

[M16] J. Sturm,  
An appearance-based Visual Compass for Mobile Robots,  
University of Amsterdam, the Netherlands, Dec. 2006.

[M17] T. Brox,  
Smoothing of matrix-valued data,  
Department of Mathematics and Computer Science, University of Mannheim, Germany, May 2002.

[M18] B. Goldluecke,  
Nichtkonforme Finite Elemente und Kollokation für elliptische Randwertprobleme,  
List of Publications

Technical Reports

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

[R2] A. Chambolle, D. Cremers and T. Pock,
A Convex Approach for Computing Minimal Partitions,

[R3] T. Brox, O. Kleinschmidt and D. Cremers,
Iterated and Efficient Nonlocal Means for Denoising of Textural Patterns,

[R4] A. Visser, J. Sturm, P. van Rossum, J. Westra and T. Bink,
Dutch Aibo Team: Technical Report RoboCup 2006,

[R5] 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.

[R6] B. Rosenhahn, U. Kersting, L. He, A. Smith, T. Brox, R. Klette and H. P. Seidel,
A silhouette based human motion tracking system,

[R7] J. Sturm, A. Visser and N. Wijngaards,
Dutch Aibo Team: Technical Report RoboCup 2005,

[R8] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Diffusion Snakes using statistical shape knowledge,