Journal Articles


[J11] M. C. Mukkamala, F. Westerkamp, E. Laude, D. Cremers and P. Ochs,
Bregman Proximal Framework for Deep Linear Neural Networks,

[J12] M. Eisenberger, Z. Lähner and D. Cremers,
Divergence-Free Shape Correspondence by Deformation,

[J13] H Tjaden, U Schwancke, E Schömer and D Cremers,
A Region-based Gauss-Newton Approach to Real-Time Monocular Multiple
Object Tracking,

[J14] T. Frerix, M. Niesner and D. Cremers,
Homogeneous Linear Inequality Constraints for Neural Network Activations,

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

[J16] F. Pasa, V. Golkov, F. Pfeiffer, D. Cremers and D. Pfeiffer,
Efficient Deep Network Architectures for Fast Chest X-Ray Tuberculosis
Screening and Visualization,

[J17] J. Schuchardt, V. Golkov and D. Cremers,
Learning to Evolve,

[J18] L. D Libera, V. Golkov, Y. Zhu, A. Mielke and D. Cremers,
Deep Learning for 2D and 3D Rotatable Data: An Overview of Methods,

Augmented Autoencoders: Implicit 3D Orientation Learning for 6D Object
Detection,

[J20] J. Engel, V. Koltun and D. Cremers,
Direct Sparse Odometry,

[J21] N. Yang, R. Wang, X. Gao and D. Cremers,
Challenges in Monocular Visual Odometry: Photometric Calibration, Motion
Bias and Rolling Shutter Effect,
In IEEE Robotics and Automation Letters (RA-L) 38; Int. Conference on Intelligent Ro-

[J22] Y. Queau, B. Durix, T. Wu, D. Cremers, F. Lauze and J.-D. Durou,
LED-based Photometric Stereo: Modeling, Calibration and Numerical Solu-
ton,
All: 1

List of Publications

[J23] Y. Queau, J.-D. Durou and J.-F. Aujol,
Normal Integration: A Survey,

[J24] Y. Queau, J.-D. Durou and J.-F. Aujol,
Variational Methods for Normal Integration,

[J25] B Bringmann, D Cremers and F Krahmer,
The homotopy method revisited: Computing solution paths of L1-regularized
problems,

[J26] J. Melou, Y. Queau, J.-D. Durou, F. Castan and D. Cremers,
Variational Reflectance Estimation from Multi-view Images,

[J27] P. Bergmann, R. Wang and D. Cremers,
Online Photometric Calibration of Auto Exposure Video for Realtime Visual
Odometry and SLAM,
IEEE Robotics and Automation Letters (RA-L), 3: 627-634, April 2018, ICRA’18 Best
Vision Paper Award - Finalist.

[J28] E. Aljalbout, V. Golkov, Y. Siddiqui, M. Strobel and D. Cremers,
Clustering with Deep Learning: Taxonomy and New Methods,

[J29] N Mayer, E Ilg, P Fischer, C Hazirbas, D Cremers, A Dosovitskiy and T Brox,
What Makes Good Synthetic Training Data for Learning Disparity and Optical
Flow Estimation?,

Omnidirectional DSO: Direct Sparse Odometry with Fisheye Cameras,
IEEE Robotics and Automation Letters 38; Int. Conference on Intelligent Robots and

[J31] L. Ma, J. Stueckler, T. Wu and D. Cremers,
Detailed Dense Inference with Convolutional Neural Networks via Discrete
Wavelet Transform,
Aug 2018.

[J32] G. Kuschk, P. d’Angelo, D. Gaudrie, P. Reinartz and D. Cremers,
Spatially Regularized Fusion of Multiresolution Digital Surface Models,

[J33] D. Cremers, L. Leal-Taixe and R. Vidal,
Deep Learning for Computer Vision (Dagstuhl Seminar 17391),
Dagstuhl Reports, 7(9): 109-125, 2017.

[J34] Y. Kee, Y. Lee, M. Souiai, D. Cremers and J. Kim,
Sequential Convex Programming for Computing Information-Theoretic Min-
imal Partitions: Nonconvex Nonsmooth Optimization,
[J35] D Cremers,
Computer Vision für 3-D-Rekonstruktion - Vom Nischenthema zum Mainstream,

[J36] E. Rodola, L. Cosmo, M. M. Bronstein, A. Torsello and D. Cremers,
Partial Functional Correspondence,

[J37] L. Cosmo, E. Rodola, A. Albarelli, F. Memoli and D. Cremers,
Consistent Partial Matching of Shape Collections via Sparse Modeling,

[J38] Y. Queau, R. Mecca, J.-D. Durou and X. Descombes,
Photometric Stereo with Only Two Images: A Theoretical Study and Numerical Resolution,

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

[J40] M. Bähr, M. Breus, Y. Queau, A. S. Bouroujerdi and J.-D. Durou,
Fast and accurate surface normal integration on non-rectangular domains,

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

Tau Like Proteins Reduce Torque Generation in Microtubule Bundles,

[J43] E Rodola, M Möller and D Cremers,
Regularized Pointwise Map Recovery from Functional Correspondence,

[J44] J. Kukacka, V. Golkov and D. Cremers,
Regularization for Deep Learning: A Taxonomy,

[J45] J. Diebold, C. Nieuwenhuis and D. Cremers,
Midrange Geometric Interactions for Semantic Segmentation,

[J46] J. Duran, M. Möller, C. Sbert and D. Cremers,
Collaborative Total Variation: A General Framework for Vectorial TV Models,
M. Burger, G. Gilboa, M. Möller, L. Eckardt and D. Cremers, 
Spectral Decompositions Using One-Homogeneous Functionals, 

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

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

T. Tan, C. J. Hardy, L. Marinelli, A. Haase and M. I. Menzel, 
Bias and Precision Analysis of Diffusional Kurtosis Imaging for Different Ac-
quisition Schemes, 

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, 

O. Litany, E. Rodola, A. M. Bronstein, M. M. Bronstein and D. Cremers, 
Non-Rigid Puzzles, 
*Computer Graphics Forum*, 35(5): 135-143, 2016, Received the Best Paper Award at 
SGP 2016.

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

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

R. Mecca, Y. Queau, F. Logothetis and R. Cipolla, 
A Single-Lobe Photometric Stereo Approach for Heterogeneous Material, 

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

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

S. Madhogaria, P. M. Baggenstoss, M. Schikora, W. Koch and D. Cremers, 
Car detection by fusion of HOG and causal MRF, 
[J59] M. Klodt, K. Herzog, R. Töpfer and D. Cremers,
Field phenotyping of grapevine growth using dense stereo reconstruction,

[J60] M. Jaimez and J. Gonzalez-Jimenez,
Fast Visual Odometry for 3-D Range Sensors,

[J61] J. L. BC M. Jaimez and J. Gonzalez-Jimenez,
Efficient Reactive Navigation with Exact Collision Determination for 3D Robot Shapes,

[J62] 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,

[J64] D. Droeschel, M. Nieuwenhuisen, M. Beul, J. Stueckler, D. Holz and S. Behnke,
Multi-Layered Mapping and Navigation for Autonomous Micro Aerial Vehicles,

[J65] E. Rodola, A. Albarelli, D. Cremers and A. Torsello,
A Simple and Effective Relevance-based Point Sampling for 3D Shapes,

[J66] R. Mecca, E. Rodola and D. Cremers,
Realistic Photometric Stereo Using Partial Differential Irradiance Equation Ratios,

[J67] 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,

[J69] H Grimmett, R Triebel, R Paul and I Posner,
Introspective classification for robot perception,

[J70] Y. Kee, H. Lee, J. Yim, D. Cremers and J. Kim,
Entropy Minimization for Groupwise Planar Shape Co-alignment and its Applications,
All: 1

List of Publications

[J71] T. Whelan, L. Ma, E. Bondarev, P. de With and J. McDonald,
Incremental and Batch Planar Simplification of Dense Point Cloud Maps,

[J72] M. Möller, M. Benning, C. Schönlieb and D. Cremers,
Variational Depth From Focus Reconstruction,

[J73] B. Goldluecke, M. Aubry, K. Kolev and D. Cremers,
A Super-resolution Framework for High-Accuracy Multiview Reconstruction,

[J74] E. Strekalovskiy, A. Chambolle and D. Cremers,
Convex Relaxation of Vectorial Problems with Coupled Regularization,

[J75] J. Engel, J. Sturm and D. Cremers,
Scale-Aware Navigation of a Low-Cost Quadrocopter with a Monocular Camera,

[J76] E. Rodola, S. R Bulo and D. Cremers,
Robust Region Detection via Consensus Segmentation of Deformable Shapes,

[J77] M. Schadler, J. Stueckler and S. Behnke,
Rough Terrain Mapping and Navigation using a Continuously Rotating 2D Laser Scanner,

[J78] J. Stueckler, B. Waldvogel, H. Schulz and S. Behnke,
Dense Real-Time Mapping of Object-Class Semantics from RGB-D Video,

[J79] J. Stueckler and S. Behnke,
Multi-Resolution Surfel Maps for Efficient Dense 3D Modeling and Tracking,

[J80] E. Rodola, A. Albarelli, F. Bergamasco and A. Torsello,
A Scale Independent Selection Process for 3D Object Recognition in Cluttered Scenes,

[J81] A. Torsello, A. Albarelli and E. Rodola,
Stable and Fast Techniques for Unambiguous Compound Phase Coding,

[J82] C. Nieuwenhuis and D. Cremers,
Spatially Varying Color Distributions for Interactive Multi-Label Segmentation,
[J83] C. Nieuwenhuis, E. Toeppe and D. Cremers,
A Survey and Comparison of Discrete and Continuous Multi-label Optimization Approaches for the Potts Model,

[J84] B. Goldluecke, E. Strekalovskiy and D. Cremers,
Tight Convex Relaxations for Vector-Valued Labeling,

[J85] F. Endres, J. Hess, J. Sturm, D. Cremers and W. Burgard,
3D Mapping with an RGB-D Camera,

[J86] Z. Liu, M. Beetz, D. Cremers, J. Gall, W. Li, D. Pangeric, J. Sturm and Y.-W. Tai,
Introduction to the special issue on visual understanding and applications with RGB-D cameras,

[J87] A. Albarelli, E. Rodola and A. Torsello,
Imposing Semi-local Geometric Constraints for Accurate Correspondences Selection in Structure from Motion: a Game-Theoretic Perspective,

[J88] A. Chambolle, D. Cremers and T. Pock,
A Convex Approach to Minimal Partitions,

[J89] T. Schoenemann and D. Cremers,
A Coding Cost Framework for Super-resolution Motion Layer Decomposition,

[J90] T. Schoenemann, F. Kahl, S. Masnou and D. Cremers,
A linear framework for region-based image segmentation and inpainting involving curvature penalization,

[J91] D. Cremers,
Optimal Solutions for Semantic Image Decomposition,

[J92] S. Chen, D. Cremers and R. J. Radke,
Image segmentation with one shape prior - A template-based formulation,

[J93] B. Goldluecke, E. Strekalovskiy and D. Cremers,
The Natural Total Variation Which Arises from Geometric Measure Theory,

[J94] U. Schlickewei,
On the Andr´ e motive of certain irreducible symplectic varieties,
[J95] K. Kolev, T. Brox and D. Cremers,
Fast Joint Estimation of Silhouettes and Dense 3D Geometry from Multiple Images,

[J96] F. Endres, J. Hess, N. Engelhard, J. Sturm and W. Burgard,
Online-6D-SLAM für RGB-D-Sensoren,

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

[J98] D. Cremers and E. Strekalovskiy,
Total Cyclic Variation and Generalizations,

[J99] J. Stueckler, R. Steffens, D. Holz and S. Behnke,
Efficient 3D Object Perception and Grasp Planning for Mobile Manipulation in Domestic Environments,

[J100] J. Stueckler, R. Steffens, D. Holz and S. Behnke,
RoboCup@Home: Demonstrating Everyday Manipulation Skills in RoboCup@Home,

[J101] T. Windheuser, U. Schlickewei, F. R. Schmidt and D. Cremers,
Large-Scale Integer Linear Programming for Orientation-Preserving 3D Shape Matching,

[J102] D. Cremers and K. Kolev,
Multiview Stereo and Silhouette Consistency via Convex Functionals over Convex Domains,

[J103] A. Wedel, T. Brox, T. Vaudrey, C. Rabe, U. Franke and D. Cremers,
Stereoscopic Scene Flow Computation for 3D Motion Understanding,

[J104] T. Schoenenmann, S. Masnou and D. Cremers,
The Elastic Ratio: Introducing Curvature into Ratio-Based Globally Optimal Image Segmentation,

[J105] A. Sellent, M. Eisemann, B. Goldluecke, D. Cremers and M. Magnor,
Motion Field Estimation from Alternate Exposure Images,
[J106] 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.

A Probabilistic Framework for Learning Kinematic Models of Articulated Objects,
Journal on Artificial Intelligence Research (JAIR), 41: 477-626, August 2011.

[J109] J. Kybic and C. Nieuwenhuis,
Bootstrap Optical Flow and Uncertainty Measure,

[J110] T. Pock, D. Cremers, H. Bischof and A. Chambolle,
Global Solutions of Variational Models with Convex Regularization,

[J111] T. Schoenemann and D. Cremers,
A Combinatorial Solution for Model-based Image Segmentation and Real-time Tracking,

[J112] U. Schlickewei,
The Hodge conjecture for self-products of certain K3 surfaces,

[J113] U. Schlickewei,
Stability of tautological vector bundles on Hilbert squares of surfaces,

[J114] 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,

[J115] L. Spinello, R. Triebel and R. Siegwart,
Multiclass Multimodal Detection and Tracking in Urban Environments,

[J116] T. Brox and D. Cremers,
On local region models and a statistical interpretation of the piecewise smooth Mumford-Shah functional,

[J117] T. Brox, B. Rosenhahn, J. Gall and D. Cremers,
Combined region- and motion-based 3D tracking of rigid and articulated objects,
[J118] K. Kolev, M. Klodt, T. Brox and D. Cremers,  
Continuous Global Optimization in Multiview 3D Reconstruction,  

[J119] 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,  

[J120] U. Schlickewei,  
Hodge classes on self-products of K3 surfaces,  

[J121] E. Strekalovskiy,  
Folgen von Höhenfußpunktdreiecken und ihre Grenzpunkte,  

[J122] J. Sturm, C. Plagemann and W. Burgard,  
Body schema learning for robotic manipulators from visual self-perception,  

[J123] J. Sturm and A. Visser,  
An appearance-based visual compass for mobile robots,  

[J124] L. Carvalho, J. Stühmer, J. S. Bois, Y. Kalaidzidis, V. Lecaudrey and C. P. Heisenberg,  
Control of convergent yolk syncytial layer nuclear movement in zebrafish,  

[J125] T. Brox, O. Kleinschmidt and D. Cremers,  
Efficient Nonlocal Means for Denoising of Textural Patterns,  

[J126] D. Cremers,  
Nonlinear Dynamical Shape Priors for Level Set Segmentation,  

[J127] 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 $Ga_{1-x}Mn_xAs$ alloys,  

[J129] C. Michel, M. T. Elm, B. Goldhuecke, S. D. Baranovskii, P. Thomas, W. Heimbrect and P. J. Klar,  
Tailoring the magnetoresistance of MnAs/GaAs:Mn granular hybrid nanostructures,  
[J130] R. Kümmerle, R. Triebel, P. Pfaff and W. Burgard,
Monte Carlo localization in outdoor terrains using multilevel surface maps,

[J131] S. Behnke and J. Stueckler,
Hierarchical Reactive Control for Humanoid Soccer Robots,

[J132] T. Pock, M. Pock and H. Bischof,
Algorithmic Differentiation: Application to Variational Problems in Computer Vision,

[J133] B. Rosenhahn, T. Brox and J. Weickert,
Three-dimensional shape knowledge for joint image segmentation and pose tracking,

[J134] Y.-J. Kim, T. Brox, W. Feiden and J. Weickert,
Fully automated segmentation and morphometrical analysis of muscle fibre images,

[J135] D. Cremers,
Computer Lernen Sehen,

[J136] D. Cremers, M. Rousson and R. Deriche,
A review of statistical approaches to level set segmentation: integrating color, texture, motion and shape,

[J137] B. Goldluecke, I. Ihrke, C. Linz and M. Magnor,
Weighted Minimal Hypersurface Reconstruction,

Quantitative modeling of the annealing-induced changes of the magnetotransport in $Ga_{1-x}Mn_xAs$ alloys,

[J139] O. M Mozos, R. Triebel, P. Jensfelt, A. Rottmann and W. Burgard,
Supervised semantic labeling of places using information extracted from sensor data,

[J140] P. Pfaff, R. Triebel and W. Burgard,
An Efficient Extension to Elevation Maps for Outdoor Terrain Mapping and Loop Closing,
[J141] H. Andreasson, R. Triebel and A. Lilienthal,  
Non-iterative Vision-based Interpolation of 3D Laser Scans,  

[J142] T. Brox and J. Weickert,  
Level Set Segmentation with Multiple Regions,  

[J143] T. Brox and J. Weickert,  
A TV flow based local scale estimate and its application to texture discrimination,  

[J144] D. Cremers,  
Dynamical statistical shape priors for level set based tracking,  

[J145] D. Cremers, S. J. Osher and S. Soatto,  
Kernel density estimation and intrinsic alignment for shape priors in level set segmentation,  

[J146] D. Cremers, N. Sochen and C. Schnörr,  
A multiphase dynamic labeling model for variational recognition-driven image segmentation,  

[J147] S. Manay, D. Cremers, B.-W. Hong, A. Yezzi and S. Soatto,  
Integral invariants for shape matching,  

[J148] N. Papenberg, A. Bruhn, T. Brox, S. Didas and J. Weickert,  
Highly accurate optic flow computation with theoretically justified warping,  

[J149] T. Brox, J. Weickert, B. Burgeth and P. Mrazek,  
Nonlinear structure tensors,  

[J150] M. Breus, T. Brox, A. Bürgel, T. Sonar and J. Weickert,  
Numerical aspects of TV flow,  

[J151] 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, jan 2006.

[J152] 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,  
All: 1

List of Publications

[J153] 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,

[J155] 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,

[J156] D. Cremers, T. Kohlberger and C. Schnörr,
Shape Statistics in Kernel Space for Variational Image Segmentation,

[J157] D. Cremers and C. Schnörr,
Statistical shape knowledge in variational motion segmentation,

[J158] J. Keuchel, C. Schnörr, C. Schellewald and D. Cremers,
Binary partitioning, perceptual grouping, and restoration with semidefinite programming,

[J159] D. Cremers and A. V. M. Herz,
Travelling waves of exitation in neural field models: Equivalence of rate descriptions and integrate-and-fire dynamics,

[J160] D. Cremers, F. Tischhäuser, J. Weickert and C. Schnörr,
Diffusion Snakes: Introducing statistical shape knowledge into the Mumford–Shah functional,

[J161] D. Cremers and A. Mielke,
Flow equations for the Hénon-Heiles Hamiltonian,

Books

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

[B2] J. Sturm,
*Approaches to Probabilistic Model Learning for Mobile Manipulation Robots*,
Springer 2013.
[B3] GE: 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] E: Y. Boykov, F. Kahl, V. Lempitsky and F. R. Schmidt,  
Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR),  
Springer 2011.

Video Processing and Computational Video,  
Springer 2010.

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

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

[B9] E: S.-C. Zhu, A. Yuille, D. Cremers and Y. Wang,  
Energy Minimization Methods for Computer Vision and Pattern Recognition (EMMCVPR),  

Book Chapters

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

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

Skeleton-Based Recognition of Shapes in Images via Longest Path Matching,  

[BC4] V. Golkov, J. M. Portegies, A. Golkov, R. Duits and D. Cremers,  
Holistic Image Reconstruction for Diffusion MRI,  
Computational Diffusion MRI, Munich, Germany, Springer, oct 2015, Book Chapter,  
and Oral Presentation at MICCAI 2015 Workshop on Computational Diffusion MRI.
Joint Super-Resolution Using Only One Anisotropic Low-Resolution Image per q-Space Coordinate,

[BC6] 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,

[BC8] J. Sturm, C. Plagemann and W. Burgard,
Body Schema Learning,

[BC9] M. Schikora, W. Koch, R. L. Streit and D. Cremers,
A Sequential Monte Carlo Method for Multi-Target Tracking with the Intensity Filter,

[BC10] D. Cremers, T. Pock, K. Kolev and A. Chambolle,
Convex Relaxation Techniques for Segmentation, Stereo and Multiview Reconstruction,

[BC11] D. Cremers,
Image Segmentation with Shape Priors: Explicit Versus Implicit Representations,

[BC12] A. Chambolle, V. Caselles, D. Cremers, M. Novaga and T. Pock,
An Introduction to Total Variation for Image Analysis,

[BC13] T. Brox, B. Rosenhahn and D. Cremers,
Contours, optic flow, and prior knowledge: cues for capturing 3D human motion in videos,

Tracking clothed people,

[BC15] D. Cremers and M. Rousson,
Efficient kernel density estimation of shape and intensity priors for level set segmentation,
All: 1

List of Publications

Adaptive structure tensors and their applications,

[BC17] D. Cremers and T. Kohlberger,
Probabilistic kernel PCA and its application to statistical shape modeling and inference,

[BC18] S. Manay, D. Cremers, B. W. Hong, A. Yezzi and S. Soatto,
Integral Invariants and Shape Matching,
Statistical analysis of shapes (modeling and simulation in science, engineering and technology), Birkhauser, 137-167, May 2006.

[BC19] 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?,

[BC22] M. Bergtholdt, D. Cremers and C. Schnörr,
Variational segmentation with shape priors,

Conference and Workshop Papers

[C1] L. Sang, B. Haefner and D. Cremers,
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] M. Eisenberger, Z. Lähner and D. Cremers,
Smooth Shells: Multi-Scale Shape Registration with Functional Maps,
IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2020, Oral Presentation.
[C4] M. Eisenberger and D. Cremers, 
Hamiltonian Dynamics for Real-World Shape Interpolation, 
European Conference on Computer Vision (ECCV), 2020, Spotlight Presentation.

[C5] S. Weiss, R. Maier, D. Cremers, R. Westermann and N. Thuerey, 
Correspondence-Free Material Reconstruction using Sparse Surface Constraints, 

[C6] C. Sommer, V. Usenko, D. Schubert, N. Demmel and D. Cremers, 
Efficient Derivative Computation for Cumulative B-Splines on Lie Groups, 

[C7] N. Yang, L. von Stumberg, R. Wang and D. Cremers, 
D3VO: Deep Depth, Deep Pose and Deep Uncertainty for Monocular Visual Odometry, 

[C8] A. Fontan-Villacampa, J. Civera and R. Triebel, 
Information-Driven Direct RGB-D Odometry, 

Multi-path Learning for Object Pose Estimation Across Domains, 

[C10] J. Wenger, H. Kjellström and R. Triebel, 
Non-Parametric Calibration for Classification, 
International Conference on Artificial Intelligence and Statistics (AISTATS), 2020.

Visual-Inertial Telepresence for Aerial Manipulation, 

[C12] Z. Ye, T. Möllenhoff, T. Wu and D. Cremers, 
Optimization of Graph Total Variation via Active-Set-based Combinatorial Reconditioning, 
International Conference on Artificial Intelligence and Statistics (AISTATS), 2020.

[C13] J Lee, M Humt, J Feng and R Triebel, 
Estimating Model Uncertainty of Neural Networks in Sparse Information Form, 

[C14] J Liu, I Chiotellis, R Triebel and D Cremers, 
Effective Version Space Reduction for Convolutional Neural Networks, 
European Conference on Machine Learning and Data Mining (ECML-PKDD), 2020.
[C15] M Denninger and R Triebel,
3D Scene Reconstruction from a Single Viewport,

[C16] J. Du, R. Wang and D. Cremers,
DH3D: Deep Hierarchical 3D Descriptors for Robust Large-Scale 6DoF Relocalization,
European Conference on Computer Vision (ECCV), 2020, Spotlight Presentation.

[C17] M Sewtz, T Bodenmüller and R Triebel,
Robust MUSIC-Based Sound Source Localization in Reverberant and Echoic Environments,

[C18] CL Gentil, M Vayugundla, R Giubilato, W Stürzl, TA. Vidal-Calleja and R Triebel,
Gaussian Process Gradient Maps for Loop-Closure Detection in Unstructured Planetary Environments,

[C19] C. Sommer, Y. Sun, E. Bylow and D. Cremers,
PrimiTect: Fast Continuous Hough Voting for Primitive Detection,

[C20] L. Koestler, N. Yang, R. Wang and D. Cremers,
Learning Monocular 3D Vehicle Detection without 3D Bounding Box Labels,

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

Shape Correspondence with Isometric and Non-Isometric Deformations,
Silvia Biasotti, Guillaume Lavoué and Remco C. Veltkamp(Eds.), 12th Eurographics Workshop on 3D Object Retrieval, 3DOR@Eurographics 2019, Genoa, Italy, May 5-6, 2019, Eurographics Association, 111-119, 2019.

[C23] B. Haefner, Y. Queau and D. Cremers,
Photometric Segmentation: Simultaneous Photometric Stereo and Masking,
International Conference on 3D Vision (3DV), Quebec City, Canada, September 2019, Spotlight Presentation.

[C24] B. Haefner, Z. Ye, M. Gao, T. Wu, Y. Queau and D. Cremers,
Variational Uncalibrated Photometric Stereo under General Lighting,
International Conference on Computer Vision (ICCV), Seoul, South Korea, October 2019.
All: 1

List of Publications

[C25] 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.

[C26] P. Swazinna, V. Golkov, I. Lipp, E. Sgarlata, V. Tomassini, D. K. Jones and D. Cremers,
Negative-Unlabeled Learning for Diffusion MRI,

[C27] D. Schubert, N. Demmel, L. von Stumberg, V. Usenko and D. Cremers,
Rolling-Shutter Modelling for Visual-Inertial Odometry,

[C28] 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.

[C29] E. Laude, T. Wu and D. Cremers,
Optimization of Inf-Convolution Regularized Nonconvex Composite Problems,
*International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2019.

[C30] T. Möllenhoff and D. Cremers,
Lifting Vectorial Variational Problems: A Natural Formulation based on Geometric Measure Theory and Discrete Exterior Calculus,
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019, Oral Presentation.

[C31] T. Möllenhoff and D. Cremers,
Flat Metric Minimization with Applications in Generative Modeling,

[C32] T. Frerix and J. Bruna,
Approximating Orthogonal Matrices with Effective Givens Factorization,

[C33] Q. Khan, P. Wenzel, D. Cremers and L. Leal-Taixe,
Towards Generalizing Sensorimotor Control Across Weather Conditions,

[C34] E.Y. Puang, P. Lehner, Z.C. Marton, M. Durner, R. Triebel and A. Albu-Schäffer,
Visual Repetition Sampling for Robot Manipulation Planning,

[C35] M. Moeller, T. Möllenhoff and D. Cremers,
Controlling Neural Networks via Energy Dissipation,
*International Conference on Computer Vision (ICCV)*, Seoul, South Korea, 10 2019.

[C36] E. Jung, N. Yang and D. Cremers,
Multi-Frame GAN: Image Enhancement for Stereo Visual Odometry in Low Light,
*Conference on Robot Learning (CoRL)*, 2019, Full Oral Presentation.
[C37] S. Weiss, R. Maier, R. Westermann, D. Cremers and N. Thuerey,
Sparse Surface Constraints for Combining Physics-based Elasticity Simulation and Correspondence-Free Object Reconstruction,

[C38] P. Brechet, T. Wu, T. Möllenhoff and D. Cremers,
Informative GANs via Structured Regularization of Optimal Transport,

[C39] F. Steidle, W. Stürzl and R. Triebel,
Visual-inertial sensor fusion with a bio-inspired polarization compass for navigation of MAVs,

[C40] J. Feng, M. Durner, Z.-C. Marton, F. Balint-Benczedi and R. Triebel,
Introspective Robot Perception using Smoothed Predictions from Bayesian Neural Networks,

[C41] T. Yenamandra, F. Bernard, J. Wang, F. Mueller and C. Theobalt,
Convex Optimisation for Inverse Kinematics,

[C42] R. Henschel, L. Leal-Taixe, D. Cremers and B. Rosenhahn,
Fusion of Head and Full-Body Detectors for Multi-Object Tracking,

[C43] C. Sommer and D. Cremers,
Joint Representation of Primitive and Non-primitive Objects for 3D Vision,

[C44] C. Hazirbas, S. G. Soyer, M. C. Staab, L. Leal-Taixe and D. Cremers,
Deep Depth From Focus,
*Asian Conference on Computer Vision (ACCV)*, December 2018.

[C45] B. Haefner, Y. Queau, T. Möllenhoff and D. Cremers,
Fight ill-posedness with ill-posedness: Single-shot variational depth super-resolution from shading,
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018, Spotlight Presentation.

Discrete-Continuous ADMM for Transductive Inference in Higher-Order MRFs,
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018.
All: 1

List of Publications


[C57] L. von Stumberg, V. Usenko and D. Cremers,
Direct Sparse Visual-Inertial Odometry using Dynamic Marginalization,

[C58] D. Schubert, T. Goll, N. Demmel, V. Usenko, J. Stueckler and D. Cremers,
The TUM VI Benchmark for Evaluating Visual-Inertial Odometry,

[C59] X. Gao, R. Wang, N. Demmel and D. Cremers,
LDSO: Direct Sparse Odometry with Loop Closure,

[C60] Z. Lähner, D. Cremers and T. Tung,
DeepWrinkles: Accurate and Realistic Clothing Modeling,

[C61] N. Yang, R. Wang, J. Stueckler and D. Cremers,
Deep Virtual Stereo Odometry: Leveraging Deep Depth Prediction for Monocular Direct Sparse Odometry,

[C62] D. Schubert, N. Demmel, V. Usenko, J. Stueckler and D. Cremers,
Direct Sparse Odometry With Rolling Shutter,

[C63] V. Usenko, N. Demmel and D. Cremers,
The Double Sphere Camera Model,

[C64] M. Sundermeyer, Z. Marton, M. Durner, M. Brucker and R. Triebel,
Implicit 3D Orientation Learning for 6D Object Detection from RGB Images,
*European Conference on Computer Vision (ECCV)*, September 2018, Best Paper Award.

[C65] M. Denninger and R. Triebel,
Persistent Anytime Learning of Objects from Unseen Classes,

[C66] I. Grixa, P. Schulz, W. Stürzl and R. Triebel,
Appearance-Based Along-Route Localization for Planetary Missions,

[C67] I. Chiotellis, F. Zimmermann, D. Cremers and R. Triebel,
Incremental Semi-Supervised Learning from Streams for Object Classification,

[C68] V. Estellers, F. Schmidt and D. Cremers,
Robust Fitting of Subdivision Surfaces for Smooth Shape Analysis,
*Proc. of the Int. Conference on 3D Vision (3DV)*, September 2018, Received the Best Paper Award at 3DV 2018.
M. Brucker, M. Durner, Z.-C. Marton, F. Balint-Benczedi, M. Sundermeyer and R. Triebel,
*6DoF Pose Estimation for Industrial Manipulation based on Synthetic Data,*

C. Nissler, M. Durner, Z.-C. Marton and R. Triebel,
*Simultaneous Calibration and Mapping,*

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.

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

D. Bender, W. Koch and D. Cremers,
*Map-based drone homing using shortcuts,*

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

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.

M. Jaimez, T. J. Cashman, A. Fitzgibbon, J. Gonzalez-Jimenez and D. Cremers,
*An Efficient Background Term for 3D Reconstruction and Tracking with Smooth Subdivision Surface Models,*
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR),* 2017.

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

M. Vestner, R. Litman, E. Rodola, A. Bronstein and D. Cremers,
*Product Manifold Filter: Non-Rigid Shape Correspondence via Kernel Density Estimation in the Product Space,*
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR),* 2017.


[C90] Y. Queau, J. Melou, J.-D. Durou and D. Cremers, 
Dense Multi-view 3D-reconstruction Without Dense Correspondences, 

[C91] K. Kurach, S. Gelly, M. Jastrzebski, P. Haeusser, O. Teytaud, D. Vincent and O. Bousquet, 
Better Text Understanding Through Image-To-Text Transfer, 

[C92] P. Haeusser, T. Frerix, A. Mordvintsev and D. Cremers, 
Associative Domain Adaptation, 

[C93] Y. Queau, M. Pizenberg, D. Cremers and J.-D. Durou, 
Stereophotometrie microscopique sans demosaïquage, 
GRETSI, Juan-les-Pins, USA, 2017.

Efficient Deformable Shape Correspondence via Kernel Matching, 
International Conference on 3D Vision (3DV), Qingdao, China, October 2017, Oral Presentation.

[C95] R. Maier, R. Schaller and D. Cremers, 
Efficient Online Surface Correction for Real-time Large-Scale 3D Reconstruction, 
British Machine Vision Conference (BMVC), London, United Kingdom, September 2017.

[C96] J. Geiping, H. Dirks and D. Cremers, 
Multiframe Motion Coupling for Video Super Resolution, 

[C97] 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.

[C98] R. Maier, K. Kim, D. Cremers, J. Kautz and M. Niessner, 
Intrinsic3D: High-Quality 3D Reconstruction by Joint Appearance and Geometry Optimization with Spatially-Varying Lighting, 
International Conference on Computer Vision (ICCV), Venice, Italy, October 2017.

[C99] S. Peng, B. Haefner, Y. Queau and D. Cremers, 
Depth Super-Resolution Meets Uncalibrated Photometric Stereo, 
International Conference on Computer Vision Workshops (ICCVW), 2017, Oral Presentation at ICCV Workshop on Color and Photometry in Computer Vision.

[C100] R. Wang, M. Schwörer and D. Cremers, 
Stereo DSO: Large-Scale Direct Sparse Visual Odometry with Stereo Cameras, 
International Conference on Computer Vision (ICCV), Venice, Italy, October 2017.
[C101] T. Möllenhoff and D. Cremers, 
Sublabel-Accurate Discretization of Nonconvex Free-Discontinuity Problems, 

[C102] M Ullrich, H Ali, M Durner, ZC Marton and R Triebel, 
Selecting CNN Features for Online Learning of 3D Objects, 

[C103] C Nissler, ZC Marton, H Kisner, U Thomas and R Triebel, 
A Method for Hand-Eye and Camera-to-Camera Calibration for Limited Fields of View, 

[C104] TS Wang, ZC Marton, M Brucker and R Triebel, 
How Robots Learn to Classify New Objects Trained from Small Data Sets, 
*Conference on Robot Learning (CoRL)*, 2017.

[C105] M Durner, S Kriegel, S Riedel, M Brucker, ZC Marton, F Balint-Benczedi and R Triebel, 
Experience-based Optimization of Robotic Perception, 

[C106] Y. Queau, J. Melou, F. Castan, D. Cremers and J.-D. Durou, 
A Variational Approach to Shape-from-shading Under Natural Illumination, 

[C107] F. Bernard, F. R. Schmidt, J. Thunberg and D. Cremers, 
A Combinatorial Solution to Non-Rigid 3D Shape-to-Image Matching, 

[C108] Y. Kuznietsov, J. Stueckler and B. Leibe, 
Semi-Supervised Deep Learning for Monocular Depth Map Prediction, 

[C109] A. Kasyanov, F. Engelmann, J. Stueckler and B. Leibe, 
Keyframe-Based Visual-Inertial Online SLAM with Relocalization, 

[C110] F. Engelmann, J. Stueckler and B. Leibe, 
SAMP: Shape and Motion Priors for 4D Vehicle Reconstruction, 

[C111] L. Cosmo, A. Albarelli, F. Bergamasco, A. Torsello, E. Rodola and D. Cremers, 
A game-theoretical approach for joint matching of multiple feature throughout unordered images, 

[C112] M. Jaimez, J. G. Monroy and J. Gonzalez-Jimenez, 
Planar Odometry from a Radial Laser Scanner. A Range Flow-based Approach, 
*Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 4479-4485, 2016.
[C113] N. Mayer, E. Ilg, P. Häusser, P. Fischer, D. Cremers, A. Dosovitskiy and T. Brox, 
A Large Dataset to Train Convolutional Networks for Disparity, Optical Flow, 
and Scene Flow Estimation, 
2016 IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2016, Las 

[C114] V. Golkov, T. Sprenger, J. I. Sperl, M. I. Menzel, M. Czisch, P. Sämann and D. Cremers, 
Model-Free Novelty-Based Diffusion MRI, 
IEEE International Symposium on Biomedical Imaging (ISBI), Prague, Czech Republic, 
apr 2016.

[C115] V. Golkov, M. J. Skwark, A. Golkov, A. Dosovitskiy, T. Brox, J. Meiler and D. Cremers, 
Protein Contact Prediction from Amino Acid Co-Evolution Using Convolutional 
Networks for Graph-Valued Images, 
Annual Conference on Neural Information Processing Systems (NIPS), Barcelona, Spain, 
dec 2016, Oral Presentation (acceptance rate: under 2%).

[C116] Z. Lähner, E. Rodola, F. R. Schmidt, M. M. Bronstein and D. Cremers, 
Efficient Globally Optimal 2D-to-3D Deformable Shape Matching, 
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), May 2016.

[C117] V. Usenko, J. Engel, J. Stueckler and D. Cremers, 
Direct Visual-Inertial Odometry with Stereo Cameras, 
International Conference on Robotics and Automation (ICRA), May 2016.

[C118] A. Narr, R. Triebel and D. Cremers, 
Stream-based Active Learning for Efficient and Adaptive Classification of 3D 
Objects, 
International Conference on Robotics and Automation (ICRA), May 2016.

[C119] Z. Lähner, E. Rodola, M. M. Bronstein, D. Cremers, O. Burghard, L. Cosmo, A. Dieck- 
mann, R. Klein and Y. Sahillioglu, 
SHREC16: Matching of Deformable Shapes with Topological Noise, 
Proc. of Eurographics Workshop on 3D Object Retrieval (3DOR), May 2016.

[C120] L. Cosmo, E. Rodola, M. M. Bronstein, A. Torsello, D. Cremers and Y. Sahillioglu, 
SHREC16: Partial Matching of Deformable Shapes, 
Proc. of Eurographics Workshop on 3D Object Retrieval (3DOR), May 2016.

[C121] T. Möllenhoff, E. Laude, M. Moeller, J. Lellmann and D. Cremers, 
Sublabel-Accurate Relaxation of Nonconvex Energies, 
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016, Oral Pre- 
sentation, Received the Best Paper Honorable Mention Award at CVPR 2016.

[C122] L. Ma, C. Kerl, J. Stueckler and D. Cremers, 
CPA-SLAM: Consistent Plane-Model Alignment for Direct RGB-D SLAM, 
International Conference on Robotics and Automation (ICRA), May 2016.

[C123] J. Engel, V. Usenko and D. Cremers, 
A Photometrically Calibrated Benchmark For Monocular Visual Odometry, 

[C124] J. Engel, V. Koltun and D. Cremers, 
Direct Sparse Odometry, 
[C125] E. Laude, T. Möllenhoff, M. Moeller, J. Lellmann and D. Cremers, 
Sublabel-Accurate Convex Relaxation of Vectorial Multilabel Energies, 
*European Conference on Computer Vision (ECCV)*, October 2016.

[C126] D. Bender, D. Cremers and W. Koch, 
A position free boresight calibration for INS-camera systems, 

[C127] 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.

[C128] T. Windheuser and D. Cremers, 
A Convex Solution to Spatially-Regularized Correspondence Problems, 
*European Conference on Computer Vision (ECCV)*, October 2016.

[C129] S. Sharifzadeh, I. Chiotellis, R. Triebel and D. Cremers, 
Learning to Drive using Inverse Reinforcement Learning and Deep Q-Networks, 
*NIPS Workshops*, December 2016.

[C130] D. Bender, F. Rouatbi, M. Schikora, D. Cremers and W. Koch, 
Scaling the world of monocular SLAM with INS-measurements for UAS navigation, 

[C131] D. Klostermann, A. Osep, J. Stueckler and B. Leibe, 
Unsupervised Learning of Shape-Motion Patterns for Objects in Urban Street Scenes, 

[C132] D. Kochanov, A. Osep, J. Stueckler and B. Leibe, 
Scene Flow Propagation for Semantic Mapping and Object Discovery in Dynamic Street Scenes, 

[C133] F. Engelmann, J. Stueckler and B. Leibe, 
Joint Object Pose Estimation and Shape Reconstruction in Urban Street Scenes Using 3D Shape Priors, 

[C134] 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.

[C135] J. Diebold, N. Demmel, C. Hazirbas, M. Möller and D. Cremers, 
Interactive Multi-label Segmentation of RGB-D Images, 
*Scale Space and Variational Methods in Computer Vision (SSVM)*, june 2015.
[C136] C. Hazirbas, J. Diebold and D. Cremers,
Optimizing the Relevance-Redundancy Tradeoff for Efficient Semantic Segmentation,
*Scale Space and Variational Methods in Computer Vision (SSVM)*, June 2015, Oral Presentation.

[C137] 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,
*Robots Symposia (RS)*, Karuizawa, Japan, March 2015.

[C138] T. Möllenhoff, E. Strekalovskiy, M. Möller and D. Cremers,
Low Rank Priors for Color Image Regularization,

[C139] 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.

[C140] J. Stühmer and D. Cremers,
A Fast Projection Method for Connectivity Constraints in Image Segmentation,

[C141] 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.

[C142] 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.

[C143] D. Mund, R. Triebel and D. Cremers,
Active Online Confidence Boosting for Efficient Object Classification,

Using Diffusion and Structural MRI for the Automated Segmentation of Multiple Sclerosis Lesions,

Robustness of Phase Sensitive Reconstruction in Diffusion Spectrum Imaging,


[C156] M. Jaimez, M. Souiai, J. Stueckler, J. Gonzalez-Jimenez and D. Cremers, 
Motion Cooperation: Smooth Piece-Wise Rigid Scene Flow from RGB-D Images, 

[C157] 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.

[C158] 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.

[C159] 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.

[C160] 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.

[C161] 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.

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

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, 
[C166] V. Golkov, M.I. Menzel, T. Sprenger, A. Haase, D. Cremers and J.I. Sperl,
Semi-Joint Reconstruction for Diffusion MRI Denoising Imposing Similarity
of Edges in Similar Diffusion-Weighted Images,
International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting,
2014.

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

[C168] D. B. AD. CJ. C D. Weikersdorfer,
Event-based 3D SLAM with a depth-augmented dynamic vision sensor,

[C169] F. Steinbruecker, J. Sturm and D. Cremers,
Volumetric 3D Mapping in Real-Time on a CPU,
International Conference on Robotics and Automation (ICRA), Hongkong, China, 2014.

[C170] E. Rodola, S. R Bulo, T. Windheuser, M. Vestner and D. Cremers,
Dense Non-Rigid Shape Correspondence Using Random Forests,

[C171] Y. Kee, M. Souiai, D. Cremers and J. Kim,
Sequential Convex Relaxation for Mutual-Information-Based Unsupervised
Figure-Ground Segmentation,

[C172] H. Alvarez, L.M. Paz, J. Sturm and D. Cremers,
Collision Avoidance for Quadrotors with a Monocular Camera,

[C173] J. Engel, T. Schöps and D. Cremers,
LSD-SLAM: Large-Scale Direct Monocular SLAM,
European Conference on Computer Vision (ECCV), September 2014, Oral Presentation.

[C174] 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.

[C175] 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.

[C176] 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.

[C177] R. Maier, J. Sturm and D. Cremers,
Submap-based Bundle Adjustment for 3D Reconstruction from RGB-D Data,
German Conference on Pattern Recognition (GCPR), Münster, Germany, September 2014, Oral
Presentation.
[C178] T. Gurdan, M. R. Oswald, D. Gurdan and D. Cremers, 
Spatial and Temporal Interpolation of Multi-View Image Sequences, 
*German Conference on Pattern Recognition (GCPR)*, Münster, Germany, Vol. 36, sep 2014.

[C179] M. R. Oswald and D. Cremers, 
Surface Normal Integration for Convex Space-time Multi-view Reconstruction, 

[C180] C. Nieuwenhuis, S. Hawe, M. Kleinsteuber and D. Cremers, 
Co-Sparse Textural Similarity for Interactive Segmentation, 

[C181] M. R. Oswald, J. Stühmer and D. Cremers, 
Generalized Connectivity Constraints for Spatio-temporal 3D Reconstruction, 

[C182] E. Strekalovskiy and D. Cremers, 
Real-Time Minimization of the Piecewise Smooth Mumford-Shah Functional, 

[C183] A. Kanezaki, E. Rodola and T. Harada, 
RGB-D [RGB-D gazou kara no buttai kenshutsu ni okeru taiou tenshuugou ruijido no gakushuu], 

[C184] A. Kanezaki, E. Rodola, D. Cremers and T. Harada, 
[Taiou tenshuugou ruijido gakushuu wo mochiita goutai-higoutai buttai kenshutsu], 

[C185] 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.

[C186] O. Dunkley, J. Engel, J. Sturm and D. Cremers, 
Visual-Inertial Navigation for a Camera-Equipped 25g Nano-Quadrotor, 

[C187] 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.

[C188] S. Debnath, S. S. Baishya, R. Triebel, V. Dutt and D. Cremers, 
Environment-adaptive Learning: How Clustering Helps to Obtain Good Training Data, 

[C189] A. Kanezaki, E. Rodola, D. Cremers and T. Harada, 
Learning Similarities for Rigid and Non-Rigid Object Detection, 
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.

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

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

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

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, jun 2014.

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

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.

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

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

J. Bergbauer and S Tari,
**Wimmelbild Analysis with Approximate Curvature Coding Distance Images,**
A. Kuijper, K. Bredies, T. Pock and H. Bischof(Eds.), *Scale Space and Variational Methods in Computer Vision,* Schloss Seggau, Leibnitz, Austria, Springer, Lecture Notes in Computer Science, Vol. 7893, 489-500, june 2013, **Oral Presentation.**
All: 1

List of Publications

[C200] J Bergbauer and S Tari,
Top-down visual search in Wimmelbild,

[C201] F. Bergamasco, A. Albarelli, E. Rodola and A. Torsello,
Can a fully unconstrained imaging model be applied effectively to central cameras?,

[C202] M. Souiai, C. Nieuwenhuis, E. Strekalovskiy and D. Cremers,
Convex Optimization for Scene Understanding,
ICCV Workshop on Graphical Models for Scene Understanding, 2013.

[C203] 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.

[C204] 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,

[C205] 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.

[C206] 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.

[C207] 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,

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,

[C211] C. Kerl, J. Sturm and D. Cremers,
Robust Odometry Estimation for RGB-D Cameras,

[C212] 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,

[C214] H. Grimmett, R. Paul, R. Triebel and I. Posner,
Knowing When We Don’t Know: Introspective Classification for Mission-Critical Decision Making,

[C215] A. SD. C D. Weikersdorfer,
Depth-adative Supervoxels for RGB-D Video Segmentation,

[C216] 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,

[C218] E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers,
Real-Time Camera Tracking and 3D Reconstruction Using Signed Distance Functions,

[C219] 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.
All: 1

List of Publications

[C220] 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.

[C221] M. Souiai, E. Strekalovskiy, C. Nieuwenhuis and D. Cremers,
A Co-occurrence Prior for Continuous Multi-Label Optimization,
Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCV-
PR), 2013.

[C222] F. Stangl, M. Souiai and D. Cremers,
Performance Evaluation of Narrow Band Methods for Variational Stereo,
35th German Conference on Pattern Recognition (GCPR), 2013.

[C223] T. Möllenhoff, C. Nieuwenhuis, E. Toeppe and D. Cremers,
Efficient Convex Optimization for Minimal Partition Problems with Volume
Constraints,
Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCV-
PR), 2013.

[C224] C. Kerl, J. Sturm and D. Cremers,
Dense Visual SLAM for RGB-D Cameras,

[C225] T. Naseer, J. Sturm and D. Cremers,
FollowMe: Person Following and Gesture Recognition with a Quadrocopter,

[C226] 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.

[C227] 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.

[C228] 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.

[C229] 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.

[C230] E. Rodola, T. Harada, Y. Kuniyoshi and D. Cremers,
Efficient Shape Matching using Vector Extrapolation,

[C231] 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.


[C243] J. Stueckler and S. Behnke,
Efficient Dense 3D Rigid-Body Motion Segmentation in RGB-D Video,

[C244] M. McElhone, J. Stueckler and S. Behnke,
Joint detection and pose tracking of multi-resolution surfel models in RGB-D,

[C245] T. Fiolka, J. Stueckler, D. A. Klein, D. Schulz and S. Behnke,
Distinctive 3D surface entropy features for place recognition,

[C246] A. Berner, J Li, D. Holz, J. Stueckler, S. Behnke and R. Klein,
Combining contour and shape primitives for object detection and pose estimation of prefabricated parts,

[C247] J. Stueckler and S. Behnke,
Hierarchical Object Discovery and Dense Modelling From Motion Cues in RGB-D Video,

[C248] M. Nieuwenhuisen, D. Droeschel, D. Holz, J. Stueckler, A. Berner, J Li, R. Klein and S. Behnke,
Mobile bin picking with an anthropomorphic service robot,

[C249] L. Gorelick, F. R. Schmidt and Y. Boykov,
Fast Trust Region for Segmentation,

[C250] L. Ma, T. Whelan, E. Bondarev, P. H. N. de With and J. McDonald,
Planar simplification and texturing of dense point cloud maps,

[C251] E. Rodola, A.M. Bronstein, A. Albarelli, F. Bergamasco and A. Torsello,
A game-theoretic approach to deformable shape matching,

[C252] F. Endres, J. Hess, N. Engelhard, J. Sturm, D. Cremers and W. Burgard,
An Evaluation of the RGB-D SLAM System,

[C253] T. Ruehr, J. Sturm, D. Pangeric, M. Beetz and D. Cremers,
A Generalized Framework for Opening Doors and Drawers in Kitchen Environments,
[C254] D Joho, GD Tipaldi, N Engelhard, C Stachniss and W Burgard, 
Nonparametric Bayesian Models for Unsupervised Scene Analysis and Recon-
struction, 

[C255] M. Schikora, A. Gning, L. Mihaylova, D. Cremers, W. Koch and R. Streit, 
Box-Particle Intensity Filter, 

[C256] 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.

[C257] L. Zhang, J. Sturm, D. Cremers and D. Lee, 
Real-Time Human Motion Tracking using Multiple Depth Cameras, 

[C258] E. Strekalovskiy, C. Nieuwenhuis and D. Cremers, 
Nonmetric Priors for Continuous Multilabel Optimization, 

[C259] 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, oct 2012.

[C260] T. Windheuser, H. Ishikawa and D. Cremers, 
QPBO [QPBO arugorizumu no tachika ni yoru hiretsu mojura enerugi saisho-
ka], 
Meeting on Image Recognition and Understanding, Fukuoka, Japan, aug 2012.

[C261] 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, jun 2012.

[C262] E. Strekalovskiy, A. Chambolle and D. Cremers, 
A Convex Representation for the Vectorial Mumford-Shah Functional, 
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Providence, 
Rhode Island, jun 2012.

[C263] J. Engel, J. Sturm and D. Cremers, 
Camera-Based Navigation of a Low-Cost Quadrocopter, 

[C264] J. Sturm, N. Engelhard, F. Endres, W. Burgard and D. Cremers, 
A Benchmark for the Evaluation of RGB-D SLAM Systems, 

[C265] J. Engel, J. Sturm and D. Cremers, 
Accurate Figure Flying with a Quadrocopter Using Onboard Visual and Iner-
tial Sensing, 
Proc. of the Workshop on Visual Control of Mobile Robots (ViCoMoR) at the IEEE/RJS 
[C266] 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,

[C269] 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,

[C272] 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, nov 2012.

[C273] J. Stueckler, N. Biresev and S. Behnke,
Semantic mapping using object-class segmentation of RGB-D images,

[C274] 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, sep 2012.
All: 1

List of Publications

[C275] 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, sep 2012.

[C276] T. Fiolka, J. Stueckler, D. A. Klein, D. Schulz and S. Behnke,
SURE: Surface Entropy for Distinctive 3D Features,

[C277] G. M. Garcia, D. A. Klein, J. Stueckler, S. Frintrop and A. B. Cremers,
Adaptive Multi-cue 3D Tracking of Arbitrary Objects,

[C278] J. Stueckler and S. Behnke,

[C279] M. Nieuwenhuisen, J. Stueckler, A. Berner, R. Klein and S. Behnke,
Shape-Primitive Based Object Recognition and Grasping,

[C280] J. Kläss, J. Stueckler and S. Behnke,
Efficient Mobile Robot Navigation using 3D Surfel Grid Maps,

[C281] J. Stueckler and S. Behnke,
Robust Real-Time Registration of RGB-D Images using Multi-Resolution Surfel Representations,

[C282] V. Usenko, F. Seidel, Z. Marton, D. Pangercic and M. Beetz,
Furniture Classification using WWW CAD Models,

[C283] F. R. Schmidt and Y. Boykov,
Hausdorff Distance Constraint for Multi-Surface Segmentation,

[C284] L. Gorelick, F. R. Schmidt, Y. Boykov, A. Delong and A. Ward,
Segmentation with non-linear regional constraints via line-search cuts,

[C285] A. Torsello, E. Rodola and A. Albarelli,
Multiview Registration via Graph Diffusion of Dual Quaternions,

[C286] F. Bergamasco, A. Albarelli, E. Rodola and A. Torsello,
RUNE-Tag: a High Accuracy Fiducial Marker with Strong Occlusion Resilience,
[C287] A. Albarelli, E. Rodola and A. Torsello, 
A Non-Cooperative Game for 3D Object Recognition in Cluttered Scenes, 

[C288] A. Torsello, E. Rodola and A. Albarelli, 
Sampling Relevant Points for Surface Registration, 

[C289] 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.

[C290] M. Aubry, U. Schlickewei and D. Cremers, 
Pose-Consistent 3D Shape Segmentation Based on a Quantum Mechanical Feature Descriptor, 

[C291] T. Schoenemann, S. Masnou and D. Cremers, 
On a linear programming approach to the discrete Willmore boundary value problem and generalizations, 

[C292] E. Strekalovskiy and D. Cremers, 
Total Variation for Cyclic Structures: Convex Relaxation and Efficient Minimization, 

[C293] B. Goldluecke and D. Cremers, 
Introducing Total Curvature for Image Processing, 
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C294] E. Strekalovskiy, B. Goldluecke and D. Cremers, 
Tight Convex Relaxations for Vector-Valued Labeling Problems, 
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C295] 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.

[C296] E. Strekalovskiy and D. Cremers, 
Generalized Ordering Constraints for Multilabel Optimization, 
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C297] 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.
[C298] 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,

[C300] C. Nieuwenhuis, E. Toeppe and D. Cremers,
Space-Varying Color Distributions for Interactive Multiregion Segmentation: Discrete versus Continuous Approaches,

[C301] M. Klodt and D. Cremers,
A Convex Framework for Image Segmentation with Moment Constraints,
IEEE International Conference on Computer Vision (ICCV), 2011.

[C302] 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.

[C303] 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.

[C305] M. Schikora, M.Oispuu, W. Koch and D. Cremers,
Multiple Source Localization Based on Biased Bearings Using the Intensity Filter - Approach and Experimental Results,

[C306] 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.

[C307] 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.
[C308] 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.

[C309] 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.

[C310] E. Toeppe, M. R. Oswald, D. Cremers and C. Rother,
Silhouette-Based Variational Methods for Single View Reconstruction,

[C311] 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,

[C312] J. Shin, R. Triebel and R. Siegwart,
Unsupervised 3D Object Discovery and Categorization for Mobile Robots,

[C313] J. Maye, R. Triebel, L. Spinello and R. Siegwart,
Bayesian On-line Learning of Driving Behaviors,

[C314] B. Oehler, J. Stueckler, J. Welle, D. Schulz and S. Behnke,
Efficient Multi-resolution Plane Segmentation of 3D Point Clouds,

[C315] J. Stueckler and S. Behnke,
Following human guidance to cooperatively carry a large object,

[C316] 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.

[C317] J. Stueckler and S. Behnke,
Compliant Task-Space Control with Back-Drivable Servo Actuators,

[C318] 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.
[C319] 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.

[C320] D. Droeschel, J. Stueckler and S. Behnke,
Learning to Interpret Pointing Gestures with a Time-of-flight Camera,

[C321] F. R. Schmidt, H. Ackermann and B. Rosenhahn,
Multilinear Model Estimation with L2-Regularization,

[C322] A. Delong, L. Gorelick, F. R. Schmidt, O. Veksler and Y. Boykov,
Interactive Segmentation with Super-Labels,

[C323] A. Albarelli, E. Rodola and A. Torsello,
Robust Camera Calibration using Inaccurate Targets,

[C324] 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.

[C325] A. Albarelli, E. Rodola, A. Cavallarin and A. Torsello,
Robust Figure Extraction on Textured Background: a Game-Theoretic Approach,

[C326] E. Rodola, A. Albarelli and A. Torsello,
A Game-Theoretic Approach to the Enforcement of Global Consistency in Multi-View Feature Matching,

[C327] A. Albarelli, E. Rodola and A. Torsello,
A Game-Theoretic Approach to Fine Surface Registration without Initial Motion Estimation,

[C328] 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.

[C329] A. Albarelli, E. Rodola and A. Torsello,
Loosely Distinctive Features for Robust Surface Alignment,
[C330] 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.

[C331] M. Schikora, D. Bender, D. Cremers and W. Koch, 
Passive Multi-Object Localization and Tracking Using Bearing Data, 

[C332] M. Schikora, D. Bender, W. Koch and D. Cremers, 
Multi-target multi-sensor localization and tracking using passive antenna and optical sensors on UAVs, 

[C333] E. Toeppe, M. R. Oswald, D. Cremers and C. Rother, 
Image-based 3D Modeling via Cheeger Sets, 
Asian Conference on Computer Vision, Queenstown, New Zealand, 53-64, nov 2010, Received Honorable Mention Award.

[C334] 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.

[C335] 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.

[C336] B. Goldluecke and D. Cremers, 
An Approach to Vectorial Total Variation based on Geometric Measure Theory, 

[C337] B. Goldluecke and D. Cremers, 
Convex Relaxation for Multilabel Problems with Product Label Spaces, 

[C338] C. Nieuwenhuis and D. Kondermann, 
Complex Motion Models for Simple Optical Flow Estimation, 

[C339] C. Nieuwenhuis, B. Berkels and M. Rumpf, 
Interactive Motion Segmentation, 

[C340] 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, 
All: 1

List of Publications

[C341] J. Sturm, K. Konolige, C. Stachniss and W. Burgard,
Vision-based Detection for Learning Articulation Models of Cabinet Doors and Drawers in Household Environments,

[C342] S. Chitta, M. Piccoli and J. Sturm,
Tactile Object Class and Internal State Recognition for Mobile Manipulation,

[C343] J. Sturm, A. Jain, C. Stachniss, C. C. Kemp and W. Burgard,
Operating Articulated Objects Based on Experience,

[C344] R. Kaestner, N. Engelhard, R. Triebel and R. Siegwart,
A Bayesian Approach to Learning 3D Representations of Dynamic Environments,

[C345] L. Spinello, R. Triebel, D. Vasquez, K. Arras and R Siegwart,
Exploiting Repetitive Object Patterns for Model Compression and Completion,

[C346] R. Triebel, J. Shin and R. Siegwart,
Segmentation and Unsupervised Part-based Discovery of Repetitive Objects,

[C347] 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.

[C348] J. Shin, R. Triebel and R. Siegwart,
Unsupervised Discovery of Repetitive Objects,

[C349] J. Maye, L. Spinello, R. Triebel and R. Siegwart,
Inferring the Semantics of Direction Signs in Public Places,

[C350] 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, dec 2010.

[C351] J. Stueckler and S. Behnke,
Combining depth and color cues for scale- and viewpoint-invariant object segmentation and recognition using Random Forests,
J. Stueckler and S. Behnke,

D. Holz, R. Schnabel, D. Droeschel, J. Stueckler and S. Behnke,

H. Schulz, W. Liu, J. Stueckler and S. Behnke,

K. Gräve, J. Stueckler and S. Behnke,

M. Nieuwenhuisen, J. Stueckler and S. Behnke,

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**, *Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA)*, 4035-4040, may 2010.

I. Mösenlechner, N Demmel and M Beetz,

A. Albarelli, E. Rodola, S. R Bulo and A. Torsello,

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.

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

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, 
*Pattern Recognition (Proc. DAGM)*, Jena, Germany, 2009, Received DAGM Best Paper Award.

B. Goldluecke and D. Cremers, 
Superresolution Texture Maps for Multiview Reconstruction, 

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

T. Pock, D. Cremers, H. Bischof and A. Chambolle, 
An Algorithm for Minimizing the Piecewise Smooth Mumford-Shah Functional, 

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

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

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

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

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.
All: 1

List of Publications


[C387] L. Spinello, R. Triebel and R. Siegwart, 
**Multiclass Multimodal Detection and Tracking in Urban Environments**, 
*Proc. of Field and Service Robotics (FSR)*, 2009.

[C388] D. Engel, L. Spinello, R. Triebel, C. Curio, R. Siegwart and H. Bülthoff, 
**Medial Features for Superpixel Segmentation**, 

[C389] 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, dec 2009.

[C390] J. Stueckler, M. Schreiber and S. Behnke, 
**Dynamaid, an Anthropomorphic Robot for Research on Domestic Service Applications**, 

[C391] T. Schoenemann, F. R. Schmidt and D. Cremers, 
**Image Segmentation with Elastic Shape Priors via Global Geodesics in Product Spaces**, 

[C392] T. Pock, T. Schoenemann, G. Graber, H. Bischof and D. Cremers, 
**A Convex Formulation of Continuous Multi-Label Problems**, 

[C393] A. Wedel, C. Rabe, T. Vaudrey, T. Brox, U. Franke and D. Cremers, 
**Efficient Dense Scene Flow from Sparse or Dense Stereo Data**, 

[C394] A. Wedel, T. Pock, J. Braun, U. Franke and D. Cremers, 
**Duality TV-L1 Flow with Fundamental Matrix Prior**, 

[C395] M. Klodt, T. Schoenemann, K. Kolev, M. Schikora and D. Cremers, 
**An Experimental Comparison of Discrete and Continuous Shape Optimization Methods**, 

[C396] A. Wedel, T. Pock, C. Zach, D. Cremers and H. Bischof, 
**An Improved Algorithm for TV-L1 Optical Flow**, 

[C397] W. Trobin, T. Pock, D. Cremers and H. Bischof, 
**An Unbiased Second-Order Prior for High-Accuracy Motion Estimation**, 

[C398] D. Cremers, F. R. Schmidt and F. Barthel, 
**Shape Priors in Variational Image Segmentation: Convexity, Lipschitz Continuity and Globally Optimal Solutions**, 
[C399] B. Rosenhahn, C. Schmaltz, T. Brox, J. Weickert, D. Cremers and H.-P. Seidel, Markerless Motion Capture of Man-Machine Interaction, 

[C400] T. Schoenemann and D. Cremers, Matching Non-rigidly Deformable Shapes Across Images: A Globally Optimal Solution, 

[C401] T. Schoenemann and D. Cremers, Globally Optimal Shape-based Tracking in Real-time, 

[C402] T. Schoenemann and D. Cremers, High Resolution Motion Layer Decomposition using Dual-space Graph Cuts, 


[C404] O. Kleinschmidt, T. Brox and D. Cremers, Nonlocal texture filtering with efficient tree structures and invariant patch similarity measures, 
Int. Workshop on Local and Nonlocal Approximation, Lausanne, Switzerland, aug 2008.

[C405] C. Nieuwenhuis, R. Mester and C. Garbe, A Statistical Confidence Measure for Optical Flows, 
European Conference on Computer Vision (ECCV), Marseille, France, 290-301, October 2008.


[C410] J. Sturm, C. Plagemann and W. Burgard,
Body Scheme Learning and Life-Long Adaptation for Robotic Manipulation,

[C411] D. Kondermann, C. Nieuwenhuis, A. Berthe, U. Kertzscher and C. Garbe,
Motion Estimation Based on a Temporal Model of Fluid Flows,

[C412] L. Spinello, R. Triebel and R. Siegwart,
Multimodal Detection and Tracking of Pedestrians in Urban Environments with Explicit Ground Plane Extraction,

[C413] L. Spinello, R. Triebel and R. Siegwart,
Multimodal People Detection and Tracking in Crowded Scenes,

[C414] J. Stueckler, H. Schulz and S. Behnke,
In-lane Localization in Road Networks using Curbs Detected in Omnidirectional Height Images,

[C415] 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.

[C416] 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.

[C417] S. May, M. Klodt, E. Rome and R. Breithaupt,
GPU-accelerated Affordance Cueing based on Visual Attention,

[C418] K. Kolev, M. Klodt, T. Brox and D. Cremers,
Propagated Photoconsistency and Convexity in Variational Multiview 3D Reconstruction,

[C419] K. Kolev, M. Klodt, T. Brox, S. Esedoglu and D. Cremers,
Continuous Global Optimization in Multiview 3D Reconstruction,

[C420] T. Brox, B. Rosenhahn, D. Cremers and H.-P. Seidel,
Nonparametric density estimation with adaptive anisotropic kernels for human motion tracking,
[C421] T. Schoenemann and D. Cremers, 
Globally Optimal Image Segmentation with an Elastic Shape Prior, 

[C422] T. Schoenemann and D. Cremers, 
Introducing Curvature into Globally Optimal Image Segmentation: Minimum Ratio Cycles on Product Graphs, 

[C423] F. R. Schmidt, D Farin and D. Cremers, 
Fast Matching of Planar Shapes in Sub-cubic Runtime, 

[C424] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov, 
Intrinsic Mean for Semimetrical Shape Retrieval via Graph Cuts, 

[C425] A. Wedel and U. Franke, 
Monocular Video Serves RADAR-based Emergency Braking, 

[C426] A. Wedel, T. Schoenemann, T. Brox and D. Cremers, 
WarpCut - Fast obstacle segmentation in monocular video, 

[C427] C. Schmaltz, B. Rosenhahn, T. Brox, D. Cremers, J. Weickert, L. Wietzke and G. Sommer, 
Occlusion Modeling by Tracking Multiple Objects, 

[C428] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel, 
Online smoothing for markerless motion capture, 

[C429] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov, 
Efficient Shape Matching via Graph Cuts, 

[C430] B. Rosenhahn, T. Brox and H.-P. Seidel, 
Scaled motion dynamics for markerless motion capture, 

[C431] D. Cremers, 
Nonlinear Dynamical Shape Priors for Level Set Segmentation, 

[C432] T. Brox and D. Cremers, 
On the Statistical Interpretation of the Piecewise Smooth Mumford-Shah Functional, 

56
[C433] T. Brox and D. Cremers,  
Iterated Nonlocal Means for Texture Restoration,  

[C434] C. Schmaltz, B. Rosenhahn, T. Brox, D. Cremers, J. Weickert, L. Wietzke and G. Sommer,  
Region-based Pose Tracking,  

[C435] D. Cremers, O. Fluck, M. Rousson and S. Aharon,  
A probabilistic level set formulation for interactive organ segmentation,  

[C436] C. Nieuwenhuis, D. Kondermann and B. Jähne,  
An Adaptive Confidence Measure for Optical Flows Based on Linear Subspace Projections,  

[C437] C. Nieuwenhuis, D. Kondermann and M. Yan,  
Blood vessel classification into arteries and veins in retinal images,  

[C438] R. Triebel, O. M Mozos and W. Burgard,  
Collective Classification for Labeling of Places and Objects in 2D and 3D Range Data,  

[C439] R. Kümmerele, 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.

[C440] R. Triebel and W. Burgard,  
Recovering the Shape of Objects in 3D Point Clouds with Partial Occlusions,  

[C441] R. TP. P R. Kümmerele and W. Burgard,  
Monte Carlo Localization in Outdoor Terrains using Multi-Level Surface Maps,  

[C442] P. Pfaff, R. Triebel, C. Stachniss, P. Lamon, W. Burgard and R. Siegwart,  
Towards Mapping of Cities,  

[C443] R. Triebel, R. Schmidt, O. M Mozos and W. Burgard,  
Instance-based AMN Classification for Improved Object Recognition in 2D and 3D Laser Range Data,  
Hierarchical reactive control for a team of humanoid soccer robots, 
Proc. of the IEEE-RAS Int. Conf. on Humanoid Robots (Humanoids), 622-629, nov 2007.

Learning for multi-view 3D tracking in the context of particle filters, 

[C446] F. R. Schmidt, M. Clausen and D. Cremers, 
Shape Matching by Variational Computation of Geodesics on a Manifold, 

[C447] T. Schoenemann and D. Cremers, 
Near Real-time Motion Segmentation using Graph Cuts, 

[C448] T. Brox, B. Rosenhahn, U. Kersting and D. Cremers, 
Nonparametric density estimation for human pose tracking, 

[C449] K. Kolev, T. Brox and D. Cremers, 
Robust variational segmentation of 3D objects from multiple views, 

[C450] A. Wedel, U. Franke, J. Klappstein, T. Brox and D. Cremers, 
Realtime depth estimation and obstacle detection from monocular video, 

[C451] Y. Boykov, V. Kolmogorov, D. Cremers and A. Delong, 
An integral solution to surface evolution PDEs via Geo-Cuts, 
A. Leonardis, H. Bischof and A. Pinz(Eds.), European Conference on Computer Vision (ECCV), Graz, Austria, Springer, LNCS, Vol. 3953, 409-422, may 2006.

[C452] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel, 
A comparison of shape matching methods for contour based pose estimation, 

[C453] T. Brox, A. Bruhn and J. Weickert, 
Variational motion segmentation with level sets, 

[C454] 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, 

58
[C455] 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,

[C456] D. Cremers and L. Grady,
Statistical priors for combinatorial optimization: efficient solutions via Graph
Cuts,
A. Leonardis, H. Bischof and A. Pinz(Eds.), European Conference on Computer Vision
(ECCV), Graz, Austria, Springer, LNCS, Vol. 3953, 263-274, may 2006.

[C457] D. Cremers, C. Guetter and C. Xu,
Nonparametric priors on the space of joint intensity distributions for non-rigid
multi-modal image registration,
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Vol. 2, 1777-
1783, June 2006.

[C458] O. Fluck, S. Aharon, D. Cremers and M. Rousson,
GPU histogram computation,
ACM SIGGRAPH posters and demos, 2006.

[C459] T. Kohlberger, D. Cremers, M. Rousson and R. Ramaraj,
4D shape priors for level set segmentation of the left myocardium in SPECT
sequences,
4190, 92-100, oct 2006.

[C460] C. Nieuwenhuis and M. Yan,
Knowledge Based Image Enhancement Using Neural Networks,

[C461] D. A. van Sand M. de Greef, J. Sturm and A. Visser,
Autonomous Color Learning in an Artificial Environment,
Proc. of the Belgian-Netherlands Artificial Intelligence Conference (BNAIC), Namur, Bel-

[C462] J. Sturm, P. van Rossum and A. Visser,
Panoramic Localization in the 4-Legged League,
G. Lakemeyer, E. Sklar, D. Sorrenti and T. Takahashi(Eds.), Proc. of the RoboCup In-
2006.

[C463] A. Visser, J. Sturm and F.C.A. Groen,
Robot companion localization at home and in the office,
Proc. of the Belgian-Netherlands Artificial Intelligence Conference (BNAIC), Namur, Bel-

[C464] A. Visser, P. van Rossum, J. Westra, J. Sturm and D. A. van Sand M. de Greef,
Dutch AIBO Team at RoboCup 2006,

[C465] R. Triebel, P. Pfaff and W. Burgard,
Multi-Level Surface Maps for Outdoor Terrain Mapping and Loop Closing,
[C466] R. Triebel, K. Kersting and W. Burgard,
Robust 3D Scan Point Classification using Associative Markov Networks,

[C467] 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, dec 2006.

[C469] M. Breus, 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, apr 2005.

[C470] T. Brox, B. Rosenhahn and J. Weickert,
Three-dimensional shape knowledge for joint image segmentation and pose estimation,
W. Kropatsch, R. Sablatnig and A. Hanbury(Eds.), Pattern Recognition (Proc. DAGM),

[C471] D. Cremers and G. Funka-Lea,
Dynamical statistical shape priors for level set based tracking,
N. Paragios, F. Faugeras, T. Chan and C. Schnörr(Eds.), Intl. Workshop on Variational and Level Set Methods,

[C472] S. Manay, D. Cremers, A. J. Yezzi and S. Soatto,
One-shot integral invariant shape priors for variational segmentation,
A. Rangarajan, B. Vemuri and A. L. Yuille(Eds.), Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR),

[C473] B. Rosenhahn, U. Kersting, D. Smith, J. Gurney, T. Brox and R. Klette,
A system for marker-less human motion estimation,
W. Kropatsch, R. Sablatnig and A. Hanbury(Eds.), Pattern Recognition (Proc. DAGM),
Vienna, Austria, Springer, LNCS, Vol. 3663, 109-116, aug 2005, 60;a href='http://www.prip.tuwien.ac.at/dagm05/awards.php'60;Received the best paper award60;/a.

[C474] M. Rousson and D. Cremers,
Efficient kernel density estimation of shape and intensity priors for level set segmentation,

[C475] M. Welk, D. Theis, T. Brox and J. Weickert,
PDE based deconvolution with forward-backward diffusivities and diffusion tensors,
R. Kimmel, N. Sochen and J. Weickert(Eds.), Scale Space and PDE Methods in Computer Vision,
[C476] B. Goldluecke and M. Magnor,
Spacetime-Continuous Geometry Meshes from Multi-View Video Sequences,

[C477] I. Ihrke, B. Goldluecke and M. Magnor,
Reconstructing the Geometry of Flowing Water,

[C478] N. Wijngaards, F. Dignum, P. Jonker, T. de Ridder, A. Visser, S. Leijnen and J. Sturm,
Dutch AIBO Team at RoboCup 2005,

[C479] H. Andreasson, R. Triebel and W. Burgard,
Improving Plane Extraction from 3D Data by Fusing Laser Data and Vision,

[C480] 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.

[C481] R. Triebel, W. Burgard and F. Dellaert,
Using Hierarchical EM to Extract Planes from 3D Range Scans,

[C482] D. Cremers,
Bayesian Approaches to Motion-based Image and Video Segmentation,

[C483] T. Brox, A. Bruhn, N. Papenberg and J. Weickert,
High accuracy optical flow estimation based on a theory for warping,

[C484] T. Brox and J. Weickert,
A TV flow based local scale measure for texture discrimination,

[C485] T. Brox and J. Weickert,
Level set based segmentation of multiple objects,

[C486] D. Cremers, S. J. Osher and S. Soatto,
Kernel density estimation and intrinsic alignment for knowledge-driven segmentation: Teaching level sets to walk,
[C487] D. Cremers, N. Sochen and C. Schnörr,
Multiphase dynamic labeling for variational recognition-driven image segmentation,

[C488] H. Jin, D. Cremers, A. Yezzi and S. Soatto,
Shedding light on stereoscopic segmentation,

[C489] M. Magnor and B. Goldluecke,
Spacetime-coherent Geometry Reconstruction from Multiple Video Streams,

[C490] B. Goldluecke and M. Magnor,
Weighted Minimal Hypersurfaces and Their Applications in Computer Vision,

[C491] B. Goldluecke and M. Magnor,
Space-Time Isosurface Evolution for Temporally Coherent 3D Reconstruction,

[C492] R. Triebel, B. Frank, J. Meyer and W. Burgard,
First steps towards a robotic system for flexible volumetric mapping of indoor environments,

[C493] T. Brox, M. Rousson, R. Deriche and J. Weickert,
Unsupervised segmentation incorporating colour, texture, and motion,

[C494] T. Brox, M. Welk, G. Steidl and J. Weickert,
Equivalence results for TV diffusion and TV regularisation,

[C495] D. Cremers,
A variational framework for image segmentation combining motion estimation and shape regularization,

[C496] D. Cremers,
A multiphase level set framework for variational motion segmentation,
All: 1

List of Publications

[C497] D. Cremers and S. Soatto,
A pseudo-distance for shape priors in level set segmentation,

[C498] D. Cremers and S. Soatto,
Variational space-time motion segmentation,

[C499] D. Cremers, N. Sochen and C. Schnörr,
Towards Recognition-based Variational Segmentation Using Shape Priors and Dynamic Labeling,

[C500] D. Cremers and A. L. Yuille,
A generative model based approach to motion segmentation,

[C501] G. Doretto, D. Cremers, P. Favaro and S. Soatto,
Dynamic texture segmentation,

[C502] M. Rousson, T. Brox and R. Deriche,
Active unsupervised texture segmentation on a diffusion based feature space,

[C503] B. Goldluecke and M. Magnor,
Joint 3D Reconstruction and Background Separation in Multiple Views using Graph Cuts,

[C504] B. Goldluecke and M. Magnor,
Real-time Microfacet Billboardiong for Free-viewpoint Video Rendering,

[C505] B. Goldluecke and M. Magnor,
Real-time, Free-viewpoint Video Rendering from Volumetric Geometry,

[C506] C. Petz, B. Goldluecke and M. Magnor,
Hardware-accelerated Autostereogram Rendering for Interactive 3D Visualization,
A system for volumetric robotic mapping of underground mines,  

[C508] D. Hähnel, R. Triebel, W. Burgard and S. Thrun,  
Map Building with Mobile Robots in Dynamic Environments,  

[C509] T. Brox and J. Weickert,  
Nonlinear matrix diffusion for optic flow estimation,  

[C510] J. Keuchel, C. Schnörr, C. Schellewald and D. Cremers,  
Unsupervised Image Partitioning with Semidefinite Programming,  

[C511] D. Cremers, T. Kohlberger and C. Schnörr,  
Nonlinear shape statistics in Mumford–Shah based segmentation,  

[C512] D. Cremers and C. Schnörr,  
Motion Competition: variational integration of motion segmentation and shape regularization,  

[C513] 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.

[C514] J. Weickert and T. Brox,  
Diffusion and regularization of vector- and matrix-valued images,  

[C515] B. Goldluecke, M. Magnor and B. Wilburn,  
Hardware-accelerated Dynamic Light Field Rendering,  

[C516] T. Brox, D. Farin and P. H. N. de With,  
Multi-stage region merging for image segmentation,  
Proc. 22nd Symposium on Information and Communication Theory in the Benelux, Enschede, The Netherlands, 189-196, may 2001, Received the best paper award.

[C517] D. Cremers, T. Kohlberger and C. Schnörr,  
Nonlinear shape statistics via kernel spaces,  
All: 1

List of Publications

[C518] J. Keuchel, C. Schellewald, D. Cremers and C. Schnoerr,
Convex Relaxations for Binary Image Partitioning and Perceptual Grouping,
Radig, B., Florczyk and S.(Eds.), Pattern Recognition, Munich, Germany, Springer, LNCS,
Vol. 2191, 353-360, Sept. 2001, Received a DAGM Paper Award.

[C519] 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.

[C520] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Learning of translation invariant shape knowledge for steering diffusion snakes,

[C521] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Diffusion Snakes using statistical shape knowledge,

PhDThesis

[PhD1] R. Maier,
High-Quality 3D Reconstruction from Low-Cost RGB-D Sensors,
Technische Universität München, München, Germany, 2020.

[PhD2] V Usenko,
Visual-Inertial Navigation for Autonomous Vehicles,
Technische Universität München, München, 2019.

[PhD3] J Stühmer,
A Convex Optimization Framework for Connectivity Constraints in Image Segmentation and 3D Reconstruction,
Technische Universität München, München, 2016.

[PhD4] 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.

[PhD5] K. Kolev,
Convexity in Image-Based 3D Surface Reconstruction,
Department of Computer Science, Technical University Munich, Germany, January 2012.

[PhD6] 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.


**MastersThesis**


All: 1

List of Publications

[M9] J. Engel,
Autonomous Camera-Based Navigation of a Quadrocopter,
Technical University Munich, Germany, Dec. 2011, Distinguished with the SIEMENS

[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, Jul 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 Técnica Federico Santa María, Valparaíso, Chile, Jun 2008.

[M14] M. R. Oswald,
Concurrent Stereo Reconstruction,
Technische Universität Dresden, Germany, Jun 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 Randwertpro-
bleme,

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,
Technical report TR-2008-05, Dept. of Computer Science, University of Bonn, Bonn, Ger-
many, nov 2008.
[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, aug 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, 