Keywords: Shape

List of Publications

2021
Conference and Workshop Papers

[C1] M. Gao, Z. Lähner, J. Thunberg, D. Cremers and F. Bernard,  
Isometric Multi-Shape Matching,  
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021, Oral Presentation.

2020
Conference and Workshop Papers

[C1] R. Wang, N. Yang, J. Stueckler and D. Cremers,  
DirectShape: Photometric Alignment of Shape Priors for Visual Vehicle Pose and Shape Estimation,  

[C2] M. Eisenberger and D. Cremers,  
Hamiltonian Dynamics for Real-World Shape Interpolation,  
*European Conference on Computer Vision (ECCV)*, 2020, Spotlight Presentation.

[C3] B. Holzschuh, Z. Lähner and D. Cremers,  
Simulated Annealing for 3D Shape Correspondence,  

[C4] M. Aygün, Z. Lähner and D. Cremers,  
Unsupervised Dense Shape Correspondence using Heat Kernels,  

2017
Conference and Workshop Papers

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

2016
Conference and Workshop Papers

[C1] 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.

SHREC’16: Matching of Deformable Shapes with Topological Noise,  
*Proc. of Eurographics Workshop on 3D Object Retrieval (3DOR)*, May 2016.

[C3] L. Cosmo, E. Rodola, M. M. Bronstein, A. Torsello, D. Cremers and Y. Sahillioglu,  
SHREC’16: Partial Matching of Deformable Shapes,  
*Proc. of Eurographics Workshop on 3D Object Retrieval (3DOR)*, May 2016.
# List of Publications

## 2015

### Journal Articles

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

### Conference and Workshop Papers

[C1] J. Stühmer and D. Cremers,  
*A Fast Projection Method for Connectivity Constraints in Image Segmentation*,  

## 2013

### Journal Articles

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

### Conference and Workshop Papers

[C1] J. Stühmer, P. Schröder and D. Cremers,  
*Tree Shape Priors with Connectivity Constraints using Convex Relaxation on General Graphs*,  
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013, *Oral Presentation*.

## 2012

### Conference and Workshop Papers

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

## 2011

### Book Chapters

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

### Conference and Workshop Papers

[C1] A. Albarelli, E. Rodola and A. Torsello,  
*A Non-Cooperative Game for 3D Object Recognition in Cluttered Scenes*,  
Keywords: Shape

List of Publications

[C2] A. Torsello, E. Rodola and A. Albarelli,
Sampling Relevant Points for Surface Registration,

[C3] 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.

2010

Conference and Workshop Papers

[C1] A. Albarelli, E. Rodola and A. Torsello,
A Game-Theoretic Approach to Fine Surface Registration without Initial Motion Estimation,

2009

Journal Articles

[J1] T. Brox, B. Rosenhahn, J. Gall and D. Cremers,
Combined region- and motion-based 3D tracking of rigid and articulated objects,

Conference and Workshop Papers

[C1] 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.

[C2] 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.

2008

Journal Articles

[J1] D. Cremers,
Nonlinear Dynamical Shape Priors for Level Set Segmentation,

Conference and Workshop Papers

[C1] D. Cremers, F. R. Schmidt and F. Barthel,
Shape Priors in Variational Image Segmentation: Convexity, Lipschitz Continuity and Globally Optimal Solutions,
Keywords: Shape List of Publications

[C2] B. Andres, C. Nieuwenhuis, D. Kondermann, U. Köthe and R. Hamprecht,
On Errors-In-Variables Regression with Arbitrary Covariance and its Application to Optical Flow Estimation,

2007
Journal Articles

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

Book Chapters

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

Conference and Workshop Papers

[C1] T. Schoenemann and D. Cremers,
Globally Optimal Image Segmentation with an Elastic Shape Prior,

[C2] F. R. Schmidt, D Farin and D. Cremers,
Fast Matching of Planar Shapes in Sub-cubic Runtime,

[C3] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov,
Intrinsic Mean for Semimetrical Shape Retrieval via Graph Cuts,

[C4] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov,
Efficient Shape Matching via Graph Cuts,

[C5] D. Cremers,
Nonlinear Dynamical Shape Priors for Level Set Segmentation,
### 2006

#### Journal Articles

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

[J2] S. Manay, D. Cremers, B.-W. Hong, A. Yezzi and S. Soatto,  
**Integral invariants for shape matching,**  

#### Conference and Workshop Papers

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

[C2] D. Cremers and L. Grady,  
**Statistical priors for combinatorial optimization: efficient solutions via Graph Cuts,**  

[C3] T. Kohlberger, D. Cremers, M. Rousson and R. Ramaraj,  
**4D shape priors for level set segmentation of the left myocardium in SPECT sequences,**  

### 2005

#### Conference and Workshop Papers

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

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

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

[C1] T. Brox, A. Bruhn, N. Papenberg and J. Weickert,
High accuracy optical flow estimation based on a theory for warping,

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

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

2003
Journal Articles

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

Conference and Workshop Papers

[C1] D. Cremers and S. Soatto,
A pseudo-distance for shape priors in level set segmentation,

[C2] D. Cremers, N. Sochen and C. Schnörr,
Towards Recognition-based Variational Segmentation Using Shape Priors and Dynamic Labeling,

2002
Journal Articles

[J1] D. Cremers, F. Tischhäuser, J. Weickert and C. Schnörr,
Diffusion Snakes: Introducing statistical shape knowledge into the Mumford–Shah functional,

Conference and Workshop Papers
[C1] D. Cremers, T. Kohlberger and C. Schnörr,
Nonlinear shape statistics in Mumford–Shah based segmentation,

2000
Conference and Workshop Papers

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

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