Daniel Cremers

List of Publications by Year
in descending order

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177 papers	18,138 citations	61984 43 h-index	36028 97 g-index
181 all docs	181 docs citations	181 times ranked	10234 citing authors

#	Article	IF	Citations
1	Learn to Predict Sets Using Feed-Forward Neural Networks. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2022, 44, 9011-9025.	13.9	2
2	DM-VIO: Delayed Marginalization Visual-Inertial Odometry. IEEE Robotics and Automation Letters, 2022, 7, 1408-1415.	5.1	37
3	Accelerating in vivo fast spin echo high angular resolution diffusion imaging with an isotropic resolution in mice through compressed sensing. Magnetic Resonance in Medicine, 2021, 85, 1397-1413.	3.0	3
4	MOTChallenge: A Benchmark for Single-Camera Multiple Target Tracking. International Journal of Computer Vision, 2021, 129, 845-881.	15.6	139
5	NeuroMorph: Unsupervised Shape Interpolation and Correspondence in One Go. , 2021, , .		28
6	Sublabel-Accurate Multilabeling Meets Product Label Spaces. Lecture Notes in Computer Science, 2021, , 3-17.	1.3	2
7	Towards Robust Monocular Visual Odometry for Flying Robots on Planetary Missions. , 2021, , .		3
8	TUM-VIE: The TUM Stereo Visual-Inertial Event Dataset. , 2021, , .		17
9	Shortest Paths in Graphs with Matrix-Valued Edges: Concepts, Algorithm and Application to 3D Multi-Shape Analysis. , 2021, , .		1
10	Photometric Depth Super-Resolution. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2020, 42, 2453-2464.	13.9	15
11	Inferring Super-Resolution Depth from a Moving Light-Source Enhanced RGB-D Sensor: A Variational Approach. , 2020, , .		7
12	From Planes to Corners: Multi-Purpose Primitive Detection in Unorganized 3D Point Clouds. IEEE Robotics and Automation Letters, 2020, 5, 1764-1771.	5.1	5
13	Bregman Proximal Mappings and Bregmanâ€“Moreau Envelopes Under Relative Prox-Regularity. Journal of Optimization Theory and Applications, 2020, 184, 724-761.	1.5	6
14	GN-Net: The Gauss-Newton Loss for Multi-Weather Relocalization. IEEE Robotics and Automation Letters, 2020, 5, 890-897.	5.1	42
15	Trajectory prediction for intelligent vehicles using spatialâ€attention mechanism. IET Intelligent Transport Systems, 2020, 14, 1855-1863.	3.0	21
16	Lifting Methods for Manifold-Valued Variational Problems. , 2020, , 95-119.		4
17	Hamiltonian Dynamics for Real-World Shape Interpolation. Lecture Notes in Computer Science, 2020, , 179-196.	1.3	5
18	On the Well-Posedness of Uncalibrated Photometric Stereo Under General Lighting. Advances in Computer Vision and Pattern Recognition, 2020, , 147-176.	1.3	3

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19	Unsupervised Dense Shape Correspondence using Heat Kernels. , 2020, , .		6
20	Video Object Segmentation without Temporal Information. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2019, 41, 1515-1530.	13.9	195
21	Divergenceâ€Free Shape Correspondence by Deformation. Computer Graphics Forum, 2019, 38, 1-12.	3.0	19
22	A Noninvasive 3D Body Scanner and Software Tool towards Analysis of Scoliosis. BioMed Research International, 2019, 2019, 1-15.	1.9	12
23	Efficient Deep Network Architectures for Fast Chest X-Ray Tuberculosis Screening and Visualization. Scientific Reports, 2019, 9, 6268.	3.3	232
24	Rolling-Shutter Modelling for Direct Visual-Inertial Odometry. , 2019, , .		15
25	A Region-Based Gauss-Newton Approach to Real-Time Monocular Multiple Object Tracking. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2019, 41, 1797-1812.	13.9	53
26	What Makes Good Synthetic Training Data for Learning Disparity and Optical Flow Estimation?. International Journal of Computer Vision, 2018, 126, 942-960.	15.6	122
27	Online Photometric Calibration of Auto Exposure Video for Realtime Visual Odometry and SLAM. IEEE Robotics and Automation Letters, 2018, 3, 627-634.	5.1	51
28	Radiomics in radiooncology â€“ Challenging the medical physicist. Physica Medica, 2018, 48, 27-36.	0.7	71
29	Direct Sparse Odometry. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2018, 40, 611-625.	13.9	1,600
30	Incremental Semi-Supervised Learning from Streams for Object Classification. , 2018, , .		2
31	Fight Ill-Posedness with Ill-Posedness: Single-shot Variational Depth Super-Resolution from Shading. , 2018, , .		24
32	LDSO: Direct Sparse Odometry with Loop Closure. , 2018, , .		175
33	Fusion of Head and Full-Body Detectors for Multi-object Tracking. , 2018, , .		100
34	Partial Single- and Multishape Dense Correspondence Using Functional Maps. Handbook of Numerical Analysis, 2018, 19, 55-90.	1.8	2
35	StaticFusion: Background Reconstruction for Dense RGB-D SLAM in Dynamic Environments. , 2018, , .		117
36	Direct Sparse Visual-Inertial Odometry Using Dynamic Marginalization. , 2018, , .		125

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37	DeepWrinkles: Accurate and Realistic Clothing Modeling. Lecture Notes in Computer Science, 2018, , 698-715.	1.3	92
38	Challenges in Monocular Visual Odometry: Photometric Calibration, Motion Bias, and Rolling Shutter Effect. IEEE Robotics and Automation Letters, 2018, 3, 2878-2885.	5.1	74
39	Omnidirectional DSO: Direct Sparse Odometry With Fisheye Cameras. IEEE Robotics and Automation Letters, 2018, 3, 3693-3700.	5.1	66
40	Variational Reflectance Estimation from Multi-view Images. Journal of Mathematical Imaging and Vision, 2018, 60, 1527-1546.	1.3	6
41	LED-Based Photometric Stereo: Modeling, Calibration and Numerical Solution. Journal of Mathematical Imaging and Vision, 2018, 60, 313-340.	1.3	50
42	Consistent Partial Matching of Shape Collections via Sparse Modeling. Computer Graphics Forum, 2017, 36, 209-221.	3.0	32
43	Partial Functional Correspondence. Computer Graphics Forum, 2017, 36, 222-236.	3.0	147
44	Automatic image-based determination of pruning mass as a determinant for yield potential in grapevine management and breeding. Australian Journal of Grape and Wine Research, 2017, 23, 120-124.	2.1	16
45	Regularized Pointwise Map Recovery from Functional Correspondence. Computer Graphics Forum, 2017, 36, 700-711.	3.0	14
46	Tau Like Proteins Reduce Torque Generation in Microtubule Bundles. Biophysical Journal, 2017, 112, 29a-30a.	0.5	1
47	Sequential Convex Programming for Computing Information-Theoretic Minimal Partitions: Nonconvex Nonsmooth Optimization. SIAM Journal on Imaging Sciences, 2017, 10, 1845-1877.	2.2	0
48	Microgeometry capture and RGB albedo estimation by photometric stereo without demosaicing. , 2017, , .		2
49	Real-time variational stereo reconstruction with applications to large-scale dense SLAM. , 2017, , .		4
50	De-noising, stabilizing and completing 3D reconstructions on-the-go using plane priors. , 2017, , .		22
51	Map-based drone homing using shortcuts. , 2017, , .		5
52	A Non-convex Variational Approach to Photometric Stereo under Inaccurate Lighting. , 2017, , .		42
53	One-Shot Video Object Segmentation. , 2017, , .		543
54	Intrinsic3D: High-Quality 3D Reconstruction by Joint Appearance and Geometry Optimization with Spatially-Varying Lighting. , 2017, , .		81

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55	Depth Super-Resolution Meets Uncalibrated Photometric Stereo. , 2017, , .		20
56	Multi-view deep learning for consistent semantic mapping with RGB-D cameras. , 2017, , .		87
57	From monocular SLAM to autonomous drone exploration. , 2017, , .		24
58	Semi-calibrated Near-Light Photometric Stereo. Lecture Notes in Computer Science, 2017, , 656-668.	1.3	15
59	Anisotropic Diffusion Descriptors. Computer Graphics Forum, 2016, 35, 431-441.	3.0	94
60	Nonâ€Rigid Puzzles. Computer Graphics Forum, 2016, 35, 135-143.	3.0	53
61	q-Space Deep Learning: Twelve-Fold Shorter and Model-Free Diffusion MRI Scans. IEEE Transactions on Medical Imaging, 2016, 35, 1344-1351.	8.9	213
62	Spectral Decompositions Using One-Homogeneous Functionals. SIAM Journal on Imaging Sciences, 2016, 9, 1374-1408.	2.2	65
63	Stream-based Active Learning for efficient and adaptive classification of 3D objects. , 2016, , .		9
64	CPA-SLAM: Consistent plane-model alignment for direct RGB-D SLAM. , 2016, , .		103
65	Direct visual-inertial odometry with stereo cameras. , 2016, , .		148
66	Collaborative Total Variation: A General Framework for Vectorial TV Models. SIAM Journal on Imaging Sciences, 2016, 9, 116-151.	2.2	51
67	Midrange Geometric Interactions for Semantic Segmentation. International Journal of Computer Vision, 2016, 117, 199-225.	15.6	2
68	Holistic Image Reconstruction for Diffusion MRI. Mathematics and Visualization, 2016, , 27-39.	0.6	1
69	Large-scale direct SLAM with stereo cameras. , 2015, , .		343
70	Realistic photometric stereo using partial differential irradiance equation ratios. Computers and Graphics, 2015, 51, 8-16.	2.5	21
71	Adopting an unconstrained ray model in light-field cameras for 3D shape reconstruction. , 2015, , .		10
72	Semi-supervised online learning for efficient classification of objects in 3D data streams. , 2015, , .		2

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73	Active online confidence boosting for efficient object classification. , 2015, , .		4
74	Super-resolution Keyframe Fusion for 3D Modeling with High-Quality Textures. , 2015, , .		21
75	Variational Depth From Focus Reconstruction. IEEE Transactions on Image Processing, 2015, 24, 5369-5378.	9.8	85
76	Car detection by fusion of HOG and causal MRF. IEEE Transactions on Aerospace and Electronic Systems, 2015, 51, 575-590.	4.7	16
77	The Role of Diffusion in Figure Hunt Games. Journal of Mathematical Imaging and Vision, 2015, 52, 108-123.	1.3	2
78	The Primal-Dual Hybrid Gradient Method for Semiconvex Splittings. SIAM Journal on Imaging Sciences, 2015, 8, 827-857.	2.2	40
79	A simple and effective relevance-based point sampling for 3D shapes. Pattern Recognition Letters, 2015, 59, 41-47.	4.2	24
80	Field phenotyping of grapevine growth using dense stereo reconstruction. BMC Bioinformatics, 2015, 16, 143.	2.6	43
81	A primal-dual framework for real-time dense RGB-D scene flow. , 2015, , .		81
82	Entropy Minimization for Groupwise Planar Shape Co-alignment and its Applications. IEEE Signal Processing Letters, 2015, 22, 1922-1926.	3.6	0
83	Box-particle probability hypothesis density filtering. IEEE Transactions on Aerospace and Electronic Systems, 2014, 50, 1660-1672.	4.7	15
84	Convex Relaxation of Vectorial Problems with Coupled Regularization. SIAM Journal on Imaging Sciences, 2014, 7, 294-336.	2.2	18
85	LSD-SLAM: Large-Scale Direct Monocular SLAM. Lecture Notes in Computer Science, 2014, , 834-849.	1.3	1,571
86	Dense Non-rigid Shape Correspondence Using Random Forests. , 2014, , .		102
87	Robust Region Detection via Consensus Segmentation of Deformable Shapes. Computer Graphics Forum, 2014, 33, 97-106.	3.0	26
88	Real-Time Minimization of the Piecewise Smooth Mumford-Shah Functional. Lecture Notes in Computer Science, 2014, , 127-141.	1.3	33
89	Volumetric 3D mapping in real-time on a CPU. , 2014, , .		110
90	A Super-Resolution Framework for High-Accuracy Multiview Reconstruction. International Journal of Computer Vision, 2014, 106, 172-191.	15.6	46

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91	Scale-aware navigation of a low-cost quadrocopter with a monocular camera. Robotics and Autonomous Systems, 2014, 62, 1646-1656.	5.1	172
92	Generalized Connectivity Constraints for Spatio-temporal 3D Reconstruction. Lecture Notes in Computer Science, 2014, , 32-46.	1.3	17
93	Total Cyclic Variation and Generalizations. Journal of Mathematical Imaging and Vision, 2013, 47, 258-277.	1.3	35
94	Tight Convex Relaxations for Vector-Valued Labeling. SIAM Journal on Imaging Sciences, 2013, 6, 1626-1664.	2.2	23
95	A Survey and Comparison of Discrete and Continuous Multi-label Optimization Approaches for the Potts Model. International Journal of Computer Vision, 2013, 104, 223-240.	15.6	44
96	A Convex Relaxation Approach to Space Time Multi-view 3D Reconstruction. , 2013, , .		13
97	Proximity Priors for Variational Semantic Segmentation and Recognition. , 2013, , .		9
98	Convex Optimization for Scene Understanding. , 2013, , .		3
99	Spatially Varying Color Distributions for Interactive Multilabel Segmentation. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2013, 35, 1234-1247.	13.9	55
100	Relative Volume Constraints for Single View 3D Reconstruction. , 2013, , .		12
101	Proportion Priors for Image Sequence Segmentation. , 2013, , .		6
102	Robust odometry estimation for RGB-D cameras. , 2013, , .		388
103	Elastic Net Constraints for Shape Matching. , 2013, , .		33
104	Depth-adaptive supervoxels for RGB-D video segmentation. , 2013, , .		12
105	Dense visual SLAM for RGB-D cameras. , 2013, , .		557
106	Total Variation Regularization for Functions with Values in a Manifold. , 2013, , .		41
107	Efficient Convex Optimization for Minimal Partition Problems with Volume Constraints. Lecture Notes in Computer Science, 2013, , 94-107.	1.3	3
108	A generalized framework for opening doors and drawers in kitchen environments. , 2012, , .		51

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109	A benchmark for the evaluation of RGB-D SLAM systems. , 2012, , .		2,188
110	A Convex Approach to Minimal Partitions. SIAM Journal on Imaging Sciences, 2012, 5, 1113-1158.	2.2	133
111	The Natural Vectorial Total Variation Which Arises from Geometric Measure Theory. SIAM Journal on Imaging Sciences, 2012, 5, 537-563.	2.2	98
112	Optimal solutions for semantic image decomposition. Image and Vision Computing, 2012, 30, 476-477.	4.5	2
113	Image segmentation with one shape prior â€" A template-based formulation. Image and Vision Computing, 2012, 30, 1032-1042.	4.5	20
114	Real-time human motion tracking using multiple depth cameras. , 2012, , .		62
115	An evaluation of the RGB-D SLAM system. , 2012, , .		493
116	Camera-based navigation of a low-cost quadrocopter. , 2012, , .		238
117	Evaluation of a Nonrigid Motion Compensation Technique Based on Spatiotemporal Features for Small Lesion Detection in Breast MRI. Advances in Artificial Neural Systems, 2012, 2012, 1-10.	1.0	1
118	A Linear Framework for Region-Based Image Segmentation and Inpainting Involving Curvature Penalization. International Journal of Computer Vision, 2012, 99, 53-68.	15.6	52
119	Fast Joint Estimation of Silhouettes and Dense 3D Geometry from Multiple Images. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2012, 34, 493-505.	13.9	67
120	Nonmetric Priors for Continuous Multilabel Optimization. Lecture Notes in Computer Science, 2012, , 208-221.	1.3	4
121	Multiple source localization based on biased bearings using the intensity filter - approach and experimental results. , 2011, , .		1
122	Real-time visual odometry from dense RGB-D images. , 2011, , .		238
123	Largeâ€Scale Integer Linear Programming for Orientation Preserving 3D Shape Matching. Computer Graphics Forum, 2011, 30, 1471-1480.	3.0	23
124	The Elastic Ratio: Introducing Curvature Into Ratio-Based Image Segmentation. IEEE Transactions on Image Processing, 2011, 20, 2565-2581.	9.8	26
125	Multiview Stereo and Silhouette Consistency via Convex Functionals over Convex Domains. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2011, 33, 1161-1174.	13.9	86
126	Stereoscopic Scene Flow Computation for 3D Motion Understanding. International Journal of Computer Vision, 2011, 95, 29-51.	15.6	140

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127	A variational approach to vesicle membrane reconstruction from fluorescence imaging. Pattern Recognition, 2011, 44, 2944-2958.	8.1	3
128	Tight convex relaxations for vector-valued labeling problems. , 2011, , .		15
129	Decoupling photometry and geometry in dense variational camera calibration. , 2011, , .		9
130	Multi-object tracking via high accuracy optical flowand finite set statistics. , 2011, , .		7
131	Generalized ordering constraints for multilabel optimization. , 2011, , .		33
132	Total variation for cyclic structures: Convex relaxation and efficient minimization. , 2011, , .		15
133	The wave kernel signature: A quantum mechanical approach to shape analysis. , 2011, , .		458
134	Passive multi-object localization and tracking using bearing data. , 2010, , .		6
135	Combined Region and Motion-Based 3D Tracking of Rigid and Articulated Objects. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2010, 32, 402-415.	13.9	113
136	Global Solutions of Variational Models with Convex Regularization. SIAM Journal on Imaging Sciences, 2010, 3, 1122-1145.	2.2	124
137	Anisotropic Minimal Surfaces Integrating Photoconsistency and Normal Information for Multiview Stereo. Lecture Notes in Computer Science, 2010, , 538-551.	1.3	20
138	Continuous ratio optimization via convex relaxation with applications to multiview 3D reconstruction. , 2009, , .		9
139	Large displacement optical flow computation withoutwarping. , 2009, , .		75
140	Beyond connecting the dots: A polynomial-time algorithm for segmentation and boundary estimation with imprecise user input. , 2009, , .		11
141	Superresolution texture maps for multiview reconstruction. , 2009, , .		45
142	On Local Region Models and a Statistical Interpretation ofÂtheÂPiecewise Smooth Mumford-Shah Functional. International Journal of Computer Vision, 2009, 84, 184-193.	15.6	101
143	Continuous Global Optimization in Multiview 3D Reconstruction. International Journal of Computer Vision, 2009, 84, 80-96.	15.6	123
144	An algorithm for minimizing the Mumford-Shah functional. , 2009, , .		196

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145	B-Spline Modeling of Road Surfaces With an Application to Free-Space Estimation. IEEE Transactions on Intelligent Transportation Systems, 2009, 10, 572-583.	8.0	85
146	Efficient planar graph cuts with applications in Computer Vision. , 2009, , .		39
147	A convex relaxation approach for computing minimal partitions. , 2009, , .		165
148	Continuous ratio optimization via convex relaxation with applications to multiview 3D reconstruction. , 2009, , .		2
149	Efficient planar graph cuts with applications in Computer Vision. , 2009, , .		7
150	Anisotropic Huber-L1 Optical Flow. , 2009, , .		261
151	3-D Reconstruction of Shaded Objects from Multiple Images Under Unknown Illumination. International Journal of Computer Vision, 2008, 76, 245-256.	15.6	39
152	Nonlinear Dynamical Shape Priors forÂLevel Set Segmentation. Journal of Scientific Computing, 2008, 35, 132-143.	2.3	31
153	Fast and exact solution of Total Variation models on the GPU. , 2008, , .		21
154	Efficient Nonlocal Means for Denoising of Textural Patterns. IEEE Transactions on Image Processing, 2008, 17, 1083-1092.	9.8	204
155	High resolution motion layer decomposition using dual-space graph cuts. , 2008, , .		22
156	Matching non-rigidly deformable shapes across images: A globally optimal solution. , 2008, , .		12
157	A Convex Formulation of Continuous Multi-label Problems. Lecture Notes in Computer Science, 2008, , 792-805.	1.3	102
158	Globally optimal shape-based tracking in real-time. , 2008, , .		15
159	Duality TV-L1 flow with fundamental matrix prior. , 2008, , .		42
160	Fast Matching of Planar Shapes in Sub-cubic Runtime. , 2007, , .		37
161	Globally Optimal Image Segmentation with an Elastic Shape Prior. , 2007, , .		33
162	Nonlinear Dynamical Shape Priors for Level Set Segmentation. , 2007, , .		18

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163	Introducing Curvature into Globally Optimal Image Segmentation: Minimum Ratio Cycles on Product Graphs. , 2007, , .		26
164	Statistical shape priors for level set segmentation. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1041903-1041904.	0.2	1
165	A Review of Statistical Approaches to Level Set Segmentation: Integrating Color, Texture, Motion and Shape. International Journal of Computer Vision, 2007, 72, 195-215.	15.6	894
166	Continuous Global Optimization in Multiview 3D Reconstruction. Lecture Notes in Computer Science, 2007, , 441-452.	1.3	14
167	Intrinsic Mean for Semi-metrical Shape Retrieval Via Graph Cuts. , 2007, , 446-455.		7
168	Dynamical statistical shape priors for level set-based tracking. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2006, 28, 1262-1273.	13.9	254
169	A Multiphase Dynamic Labeling Model for Variational Recognition-driven Image Segmentation. International Journal of Computer Vision, 2006, 66, 67-81.	15.6	87
170	Kernel Density Estimation and Intrinsic Alignment for Shape Priors in Level Set Segmentation. International Journal of Computer Vision, 2006, 69, 335-351.	15.6	311
171	Motion Competition: A Variational Approach to Piecewise Parametric Motion Segmentation. International Journal of Computer Vision, 2005, 62, 249-265.	15.6	214
172	Shape statistics in kernel space for variational image segmentation. Pattern Recognition, 2003, 36, 1929-1943.	8.1	192
173	Statistical shape knowledge in variational motion segmentation. Image and Vision Computing, 2003, 21, 77-86.	4.5	49
174	Traveling Waves of Excitation in Neural Field Models: Equivalence of Rate Descriptions and Integrate-and-Fire Dynamics. Neural Computation, 2002, 14, 1651-1667.	2.2	10
175	Diffusion Snakes: Introducing Statistical Shape Knowledge into the Mumford-Shah Functional. International Journal of Computer Vision, 2002, 50, 295-313.	15.6	253
176	Flow equations for the HÃ©nonâ€“Heiles Hamiltonian. Physica D: Nonlinear Phenomena, 1999, 126, 123-135.	2.8	7
177	Nonparametric Priors on the Space of Joint Intensity Distributions for Non-Rigid Multi-Modal Image Registration. , 0, , .		6