Joachim Weickert

List of Publications by Citations

179 papers	7,423 citations	41 h-index	83 g-index
196 ext. papers	8,509 ext. citations	2.6 avg, IF	6.14 L-index

#	Paper	IF	Citations
179	High Accuracy Optical Flow Estimation Based on a Theory for Warping. *Lecture Notes in Computer Science*, **2004**, 25-36	0.9	849
178	Lucas/Kanade Meets Horn/Schunck: Combining Local and Global Optic Flow Methods. *International Journal of Computer Vision*, **2005**, 61, 1-21	10.6	738
177	Coherence-Enhancing Diffusion Filtering. *International Journal of Computer Vision*, **1999**, 31, 111-127	10.6	515
176	Highly Accurate Optic Flow Computation with Theoretically Justified Warping. *International Journal of Computer Vision*, **2006**, 67, 141-158	10.6	286
175	Diffusion Snakes: Introducing Statistical Shape Knowledge into the Mumford-Shah Functional. *International Journal of Computer Vision*, **2002**, 50, 295-313	10.6	218
174	A Theoretical Framework for Convex Regularizers in PDE-Based Computation of Image Motion. *International Journal of Computer Vision*, **2001**, 45, 245-264	10.6	186
173	A Scheme for Coherence-Enhancing Diffusion Filtering with Optimized Rotation Invariance. *Journal of Visual Communication and Image Representation*, **2002**, 13, 103-118	2.7	177
172	Reliable Estimation of Dense Optical Flow Fields with Large Displacements. *International Journal of Computer Vision*, **2000**, 39, 41-56	10.6	175
171	Variational Optic Flow Computation with a Spatio-Temporal Smoothness Constraint **2001**, 14, 245-255		171
170	Coherence-enhancing diffusion of colour images. *Image and Vision Computing*, **1999**, 17, 201-212	3.7	169
169	Optic Flow in Harmony. *International Journal of Computer Vision*, **2011**, 93, 368-388	10.6	162
168	Nonlinear structure tensors. *Image and Vision Computing*, **2006**, 24, 41-55	3.7	161
167	On the Equivalence of Soft Wavelet Shrinkage, Total Variation Diffusion, Total Variation Regularization, and SIDEs. *SIAM Journal on Numerical Analysis*, **2004**, 42, 686-713	2.4	158
166	Level set segmentation with multiple regions. *IEEE Transactions on Image Processing*, **2006**, 15, 3213-8	8.7	125
165	A Multigrid Platform for Real-Time Motion Computation with Discontinuity-Preserving Variational Methods. *International Journal of Computer Vision*, **2006**, 70, 257-277	10.6	117
164	Linear Scale-Space has First been Proposed in Japan. *Journal of Mathematical Imaging and Vision*, **1999**, 10, 237-252	1.6	116
163	Efficient image segmentation using partial differential equations and morphology. *Pattern Recognition*, **2001**, 34, 1813-1824	7.7	110

162	Variational optical flow computation in real time. *IEEE Transactions on Image Processing*, **2005**, 14, 608-615	3.7	105
161	Three-Dimensional Shape Knowledge for Joint Image Segmentation and Pose Tracking. *International Journal of Computer Vision*, **2007**, 73, 243-262	10.6	102
160	Image Compression with Anisotropic Diffusion. *Journal of Mathematical Imaging and Vision*, **2008**, 31, 255-269	1.6	101
159	Dense Disparity Map Estimation Respecting Image Discontinuities: A PDE and Scale-Space Based Approach. *Journal of Visual Communication and Image Representation*, **2002**, 13, 3-21	2.7	95
158	Relations Between Regularization and Diffusion Filtering. *Journal of Mathematical Imaging and Vision*, **2000**, 12, 43-63	1.6	90
157	Freehand HDR Imaging of Moving Scenes with Simultaneous Resolution Enhancement. *Computer Graphics Forum*, **2011**, 30, 405-414	2.4	86
156	Diffusion and regularization of vector- and matrix-valued images. *Contemporary Mathematics*, **2002**, 251-268		86
155	Colour, texture, and motion in level set based segmentation and tracking. *Image and Vision Computing*, **2010**, 28, 376-390	3.7	66
154	Properties of Higher Order Nonlinear Diffusion Filtering. *Journal of Mathematical Imaging and Vision*, **2009**, 35, 208-226	1.6	62
153	Unsupervised Segmentation Incorporating Colour, Texture, and Motion. *Lecture Notes in Computer Science*, **2003**, 353-360	0.9	60
152	Rotationally invariant similarity measures for nonlocal image denoising. *Journal of Visual Communication and Image Representation*, **2011**, 22, 117-130	2.7	55
151	Illumination-Robust Variational Optical Flow with Photometric Invariants **2007**, 152-162		55
150	Complementary Optic Flow. *Lecture Notes in Computer Science*, **2009**, 207-220	0.9	53
149	From Box Filtering to Fast Explicit Diffusion. *Lecture Notes in Computer Science*, **2010**, 533-542	0.9	52
148	Electrostatic Halftoning. *Computer Graphics Forum*, **2010**, 29, 2313-2327	2.4	51
147	Understanding, Optimising, and Extending Data Compression with Anisotropic Diffusion. *International Journal of Computer Vision*, **2014**, 108, 222-240	10.6	49
146	Locally analytic schemes: A link between diffusion filtering and wavelet shrinkage. *Applied and Computational Harmonic Analysis*, **2008**, 24, 195-224	3.1	47
145	Edge-based compression of cartoon-like images with homogeneous diffusion. *Pattern Recognition*, **2011**, 44, 1859-1873	7.7	45

126	A TV Flow Based Local Scale Measure for Texture Discrimination. *Lecture Notes in Computer Science*, **2004**, 578-590	0.9	30
125	Markerless motion capture of man-machine interaction **2008**,		29
124	Tensor Field Interpolation with PDEs. *Mathematics and Visualization*, **2006**, 315-325	0.6	29
123	A semidiscrete nonlinear scale-space theory and its relation to the Perona–Malik paradox **1997**, 1-10		29
122	Optimising Spatial and Tonal Data for Homogeneous Diffusion Inpainting. *Lecture Notes in Computer Science*, **2012**, 26-37	0.9	28
121	Cyclic Schemes for PDE-Based Image Analysis. *International Journal of Computer Vision*, **2016**, 118, 275-299	10.6	28
120	Region-Based Pose Tracking. *Lecture Notes in Computer Science*, **2007**, 56-63	0.9	25
119	Region-based pose tracking with occlusions using 3D models. *Machine Vision and Applications*, **2012**, 23, 557-577	2.8	24
118	Turning Diffusion-Based Image Colorization Into Efficient Color Compression. *IEEE Transactions on Image Processing*, **2017**, 26, 860-869	8.7	22
117	A Shock-Capturing Algorithm for the Differential Equations of Dilation and Erosion. *Journal of Mathematical Imaging and Vision*, **2006**, 25, 187-201	1.6	21
116	A Variational Model for the Joint Recovery of the Fundamental Matrix and the Optical Flow. *Lecture Notes in Computer Science*, **2008**, 314-324	0.9	21
115	Three-Dimensional Shape Knowledge for Joint Image Segmentation and Pose Estimation. *Lecture Notes in Computer Science*, **2005**, 109-116	0.9	21
114	Level Set Methods for Watershed Image Segmentation **2007**, 178-190		20
113	Beating the Quality of JPEG 2000 with Anisotropic Diffusion. *Lecture Notes in Computer Science*, **2009**, 452-461	0.9	19
112	An Explanation for the Logarithmic Connection between Linear and Morphological System Theory. *International Journal of Computer Vision*, **2005**, 64, 157-169	10.6	19
111	Learning Brightness Transfer Functions for the Joint Recovery of Illumination Changes and Optical Flow. *Lecture Notes in Computer Science*, **2014**, 455-471	0.9	19
110	Motion Compensated Frame Interpolation with a Symmetric Optical Flow Constraint. *Lecture Notes in Computer Science*, **2012**, 447-457	0.9	19
109	An Optimal Control Approach to Find Sparse Data for Laplace Interpolation. *Lecture Notes in Computer Science*, **2013**, 151-164	0.9	19

108	Regularity and Scale-Space Properties of Fractional High Order Linear Filtering. *Lecture Notes in Computer Science*, **2005**, 13-25	0.9	18
107	A Higher-Order Structure Tensor. *Mathematics and Visualization*, **2009**, 263-279	0.6	18
106	The Complete Rank Transform: A Tool for Accurate and Morphologically Invariant Matching of Structures **2013**,		17
105	Anisotropic Continuous-Scale Morphology. *Lecture Notes in Computer Science*, **2007**, 515-522	0.9	16
104	A General Structure Tensor Concept and Coherence-Enhancing Diffusion Filtering for Matrix Fields. *Mathematics and Visualization*, **2009**, 305-323	0.6	16
103	Compression of Depth Maps with Segment-Based Homogeneous Diffusion. *Lecture Notes in Computer Science*, **2013**, 319-330	0.9	16
102	Evaluating the true potential of diffusion-based inpainting in a compression context. *Signal Processing: Image Communication*, **2016**, 46, 40-53	2.8	16
101	From two-dimensional nonlinear diffusion to coupled Haar wavelet shrinkage. *Journal of Visual Communication and Image Representation*, **2007**, 18, 162-175	2.7	14
100	A proof-of-concept framework for PDE-based video compression **2016**,		14
99	Beyond pure quality: Progressive modes, region of interest coding, and real time video decoding for PDE-based image compression. *Journal of Visual Communication and Image Representation*, **2015**, 31, 253-265	2.7	13
98	Domain decomposition for variational optical-flow computation. *IEEE Transactions on Image Processing*, **2005**, 14, 1125-37	8.7	13
97	Discontinuity-Preserving Computation of Variational Optic Flow in Real-Time. *Lecture Notes in Computer Science*, **2005**, 279-290	0.9	13
96	A Generic Approach to the Filtering of Matrix Fields with Singular PDEs **2007**, 556-567		12
95	Adaptation of Tensor Voting to Image Structure Estimation. *Mathematics and Visualization*, **2012**, 29-50	0.6	12
94	Anisotropic Range Image Integration. *Lecture Notes in Computer Science*, **2012**, 73-82	0.9	12
93	Morphological Counterparts of Linear Shift-Invariant Scale-Spaces. *Journal of Mathematical Imaging and Vision*, **2016**, 56, 352-366	1.6	11
92	Adaptive Continuous-Scale Morphology for Matrix Fields. *International Journal of Computer Vision*, **2011**, 92, 146-161	10.6	11
91	Variational optic flow on the Sony PlayStation 3. *Journal of Real-Time Image Processing*, **2010**, 5, 163-177	1.9	11

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87	A Highly Efficient GPU Implementation for Variational Optic Flow Based on the Euler-Lagrange Framework. *Lecture Notes in Computer Science*, **2012**, 372-383	0.9	10
86	L2-Stable Nonstandard Finite Differences for Anisotropic Diffusion. *Lecture Notes in Computer Science*, **2013**, 380-391	0.9	10
85	Mathematical Morphology on Tensor Data Using the Loewner Ordering. *Mathematics and Visualization*, **2006**, 357-368	0.6	10
84	Equivalence Results for TV Diffusion and TV Regularisation. *Lecture Notes in Computer Science*, **2003**, 86-100	0.9	10
83	Diffusion-Based Inpainting for Coding Remote-Sensing Data. *IEEE Geoscience and Remote Sensing Letters*, **2017**, 14, 1203-1207	4.1	9
82	Simultaneous HDR and Optic Flow Computation **2014**,		9
81	Enhancing 3-D cell structures in confocal and STED microscopy: a joint model for interpolation, deblurring and anisotropic smoothing. *Measurement Science and Technology*, **2013**, 24, 125703	2	9
80	Integrodifferential equations for continuous multiscale wavelet shrinkage. *Inverse Problems and Imaging*, **2007**, 1, 47-62	2.1	9
79	A focus fusion framework with anisotropic depth map smoothing. *Pattern Recognition*, **2015**, 48, 3310-3323	7.5	8
78	Theoretical foundations for spatially discrete 1-D shock filtering. *Image and Vision Computing*, **2007**, 25, 455-463	3.7	8
77	Numerical aspects of TV flow. *Numerical Algorithms*, **2006**, 41, 79-101	2.1	8
76	Discrete Green's Functions for Harmonic and Biharmonic Inpainting with Sparse Atoms. *Lecture Notes in Computer Science*, **2015**, 169-182	0.9	8
75	Flexible Segmentation and Smoothing of DT-MRI Fields Through a Customizable Structure Tensor. *Lecture Notes in Computer Science*, **2006**, 455-464	0.9	8
74	An Explanation for the Logarithmic Connection between Linear and Morphological Systems. *Lecture Notes in Computer Science*, **2003**, 325-339	0.9	8
73	Why Does Non-binary Mask Optimisation Work for Diffusion-Based Image Compression?. *Lecture Notes in Computer Science*, **2015**, 85-98	0.9	7

72	Is Dense Optic Flow Useful to Compute the Fundamental Matrix?. *Lecture Notes in Computer Science* , **2008**, 630-639	0.9	7
71	PDE-Driven Adaptive Morphology for Matrix Fields. *Lecture Notes in Computer Science*, **2009**, 247-258	0.9	7
70	Denoising by Inpainting. *Lecture Notes in Computer Science*, **2017**, 121-132	0.9	6
69	Anisotropic osmosis filtering for shadow removal in images. *Inverse Problems*, **2019**, 35, 054001	2.3	6
68	Introducing Maximal Anisotropy into Second Order Coupling Models. *Lecture Notes in Computer Science*, **2015**, 79-90	0.9	6
67	Colour image compression with anisotropic diffusion **2014**,		6
66	From Tensor-Driven Diffusion to Anisotropic Wavelet Shrinkage. *Lecture Notes in Computer Science*, **2006**, 391-403	0.9	6
65	A Directional Rouy-Tourin Scheme for Adaptive Matrix-Valued Morphology. *Lecture Notes in Computer Science*, **2009**, 250-260	0.9	6
64	2. Optimizing spatial and tonal data for PDE-based inpainting **2016**, 35-83		6
63	Fully-Automated Analysis of Muscle Fiber Images with Combined Region and Edge-Based Active Contours **2006**, 86-90		6
62	FSI Schemes: Fast Semi-Iterative Solvers for PDEs and Optimisation Methods. *Lecture Notes in Computer Science*, **2016**, 91-102	0.9	5
61	PDE-based Morphology for Matrix Fields: Numerical Solution Schemes. *Advances in Pattern Recognition*, **2009**, 125-150		5
60	Staying Well Grounded in Markerless Motion Capture. *Lecture Notes in Computer Science*, **2008**, 385-395	0.9	5
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57	Diffusion-Based Image Compression in Steganography. *Lecture Notes in Computer Science*, **2012**, 219-228	0.9	5
56	The Bessel Scale-Space. *Lecture Notes in Computer Science*, **2005**, 84-95	0.9	5
55	From Adaptive Averaging to Accelerated Nonlinear Diffusion Filtering. *Lecture Notes in Computer Science*, **2006**, 101-110	0.9	5

54	PDEs for Tensor Image Processing. *Mathematics and Visualization*, **2006**, 399-414	0.6	5
53	Morphologically Invariant Matching of Structures with the Complete Rank Transform. *International Journal of Computer Vision*, **2015**, 113, 220-232	10.6	4
52	Fast electrostatic halftoning. *Journal of Real-Time Image Processing*, **2014**, 9, 379-392	1.9	4
51	Tensor Median Filtering and M-Smoothing. *Mathematics and Visualization*, **2006**, 345-356	0.6	4
50	Relativistic Scale-Spaces. *Lecture Notes in Computer Science*, **2005**, 1-12	0.9	4
49	Benchmarking Wilms' tumor in multisequence MRI data: why does current clinical practice fail? Which popular segmentation algorithms perform well?. *Journal of Medical Imaging*, **2019**, 6, 034001	2.6	4
48	Energy-Based Image Simplification with Nonlocal Data and Smoothness Terms **2007**, 51-60		4
47	Dealing with Self-occlusion in Region Based Motion Capture by Means of Internal Regions. *Lecture Notes in Computer Science*, **2008**, 102-111	0.9	4
46	Highly Accurate PDE-Based Morphology for General Structuring Elements. *Lecture Notes in Computer Science*, **2009**, 758-769	0.9	4
45	Deinterlacing with Motion-Compensated Anisotropic Diffusion. *Lecture Notes in Computer Science*, **2009**, 91-106	0.9	4
44	Novel Schemes for Hyperbolic PDEs Using Osmosis Filters from Visual Computing. *Lecture Notes in Computer Science*, **2012**, 532-543	0.9	4
43	Pseudo-inverses of difference matrices and their application to sparse signal approximation. *Linear Algebra and Its Applications*, **2016**, 503, 26-47	0.9	4
42	A Discrete Theory and Efficient Algorithms for Forward-and-Backward Diffusion Filtering. *Journal of Mathematical Imaging and Vision*, **2018**, 60, 1399-1426	1.6	4
41	Optimising Data for Exemplar-Based Inpainting. *Lecture Notes in Computer Science*, **2018**, 547-558	0.9	4
40	Progressive modes in PDE-based image compression **2013**,		3
39	3D-Coherence-Enhancing Diffusion Filtering for Matrix Fields. *Computational Imaging and Vision*, **2012**, 49-63		3
38	A Dense Pipeline for 3D Reconstruction from Image Sequences. *Lecture Notes in Computer Science*, **2014**, 629-640	0.9	3
37	Variational Exposure Fusion with Optimal Local Contrast. *Lecture Notes in Computer Science*, **2015**, 425-436	0.9	3

36	Combined Registration Methods for Pose Estimation. *Lecture Notes in Computer Science*, **2008**, 913-924	0.9	3
35	Fast PDE-Based Image Analysis in Your Pocket. *Lecture Notes in Computer Science*, **2012**, 544-555	0.9	3
34	Variational Image Fusion with Optimal Local Contrast. *Computer Graphics Forum*, **2016**, 35, 100-112	2.4	3
33	Compressing Flow Fields with Edge-Aware Homogeneous Diffusion Inpainting **2020**,		2
32	Modelling Image Processing with Discrete First-Order Swarms. *Advances in Intelligent Systems and Computing*, **2016**, 261-270	0.4	2
31	Optic Flow Scale Space. *Lecture Notes in Computer Science*, **2012**, 713-724	0.9	2
30	Minimally Stochastic Schemes for Singular Diffusion Equations. *Mathematics and Visualization*, **2007**, 325-339	0.6	2
29	Robustness of brain tumor segmentation. *Journal of Medical Imaging*, **2020**, 7, 064006	2.6	2
28	Evaluating Data Terms for Variational Multi-frame Super-Resolution. *Lecture Notes in Computer Science*, **2017**, 590-601	0.9	2
27	An Efficient and Stable Two-Pixel Scheme for 2D Forward-and-Backward Diffusion. *Lecture Notes in Computer Science*, **2017**, 94-106	0.9	2
26	Evaluating a General Class of Filters for Image Denoising **2007**, 601-610		2
25	Hyperbolic Numerics for Variational Approaches to Correspondence Problems. *Lecture Notes in Computer Science*, **2009**, 636-647	0.9	2
24	Cross Anisotropic Cost Volume Filtering for Segmentation. *Lecture Notes in Computer Science*, **2013**, 803-814	0.9	2
23	PDE Evolutions for M-Smoothers in One, Two, and Three Dimensions. *Journal of Mathematical Imaging and Vision*, **2021**, 63, 157-185	1.6	2
22	Inpainting-Based Video Compression in FullHD. *Lecture Notes in Computer Science*, **2021**, 425-436	0.9	2
21	Pseudodifferential Inpainting: The Missing Link Between PDE- and RBF-Based Interpolation. *Lecture Notes in Computer Science*, **2019**, 67-78	0.9	1
20	Mathematical Foundations and Generalisations of the Census Transform for Robust Optic Flow Computation. *Journal of Mathematical Imaging and Vision*, **2015**, 52, 71-86	1.6	1
19	Can Variational Models for Correspondence Problems Benefit from Upwind Discretisations?. *Journal of Mathematical Imaging and Vision*, **2011**, 39, 230-244	1.6	1

#	Publication		
18	JMIV Special Issue. *Journal of Mathematical Imaging and Vision*, **2011**, 41, 1-2	1.6	1
17	Mathematische Bildverarbeitung mit Ideen aus der Natur. *Mitteilungen Der Deutschen Mathematiker-Vereinigung*, **2012**, 20,	0.1	1
16	Robust Variational Reconstruction from Multiple Views **2007**, 173-182		1
15	Sparse Inpainting with Smoothed Particle Hydrodynamics. *SIAM Journal on Imaging Sciences*, **2021**, 14, 1669-1705	1.9	1
14	Sparsification Scale-Spaces. *Lecture Notes in Computer Science*, **2019**, 303-314	0.9	1
13	Compressing Audio Signals with Inpainting-Based Sparsification. *Lecture Notes in Computer Science*, **2019**, 92-103	0.9	1
12	The Morphological Equivalents of Relativistic and Alpha-Scale-Spaces. *Lecture Notes in Computer Science*, **2015**, 28-39	0.9	1
11	Modelling Stable Backward Diffusion and Repulsive Swarms with Convex Energies and Range Constraints. *Lecture Notes in Computer Science*, **2018**, 409-423	0.9	1
10	Beauty with Variational Methods: An Optic Flow Approach to Hairstyle Simulation **2007**, 825-836		1
9	JPEG Meets PDE-based Image Compression **2021**,		1
8	Algorithms for Piecewise Constant Signal Approximations **2019**,		1
7	A systematic evaluation of coding strategies for sparse binary images. *Signal Processing: Image Communication*, **2021**, 99, 116424	2.8	1
6	Learning Sparse Masks for Diffusion-Based Image Inpainting. *Lecture Notes in Computer Science*, **2022**, 528-539	0.9	0
5	Gradients versus Grey Values for Sparse Image Reconstruction and Inpainting-Based Compression. *Lecture Notes in Computer Science*, **2016**, 1-13	0.9	
4	Large-scale antibody profiling of human blood sera: The future of molecular diagnosis. *Informatik-Spektrum*, **2009**, 32, 332-338	0.3	
3	Structural Adaptive Smoothing Procedures **2008**, 183-229		
2	Focus Fusion with Anisotropic Depth Map Smoothing. *Lecture Notes in Computer Science*, **2013**, 67-74	0.9	
1	Stable Backward Diffusion Models that Minimise Convex Energies. *Journal of Mathematical Imaging and Vision*, **2020**, 62, 941-960	1.6	