Carola-Bibiane Schnlieb

List of Publications by Year in Descending Order

121 papers	2,191 citations	25 h-index	44 g-index
130 ext. papers	3,035 ext. citations	3.9 avg, IF	5.77 L-index

#	Paper	IF	Citations
121	GraphXCOVID: Explainable deep graph diffusion pseudo-Labelling for identifying COVID-19 on chest X-rays. *Pattern Recognition*, **2022**, 122, 108274	7.7	9
120	Improving Fast Iterative Shrinkage-Thresholding Algorithm: Faster, Smarter, and Greedier. *SIAM Journal of Scientific Computing*, **2022**, 44, A1069-A1091	2.6	2
119	Estimation of the zero-pressure computational start shape of atherosclerotic plaques: Improving the backward displacement method with deformation gradient tensor.. *Journal of Biomechanics*, **2021**, 131, 110910	2.9	
118	A Stochastic Proximal Alternating Minimization for Nonsmooth and Nonconvex Optimization. *SIAM Journal on Imaging Sciences*, **2021**, 14, 1932-1970	1.9	0
117	Unified Focal loss: Generalising Dice and cross entropy-based losses to handle class imbalanced medical image segmentation.. *Computerized Medical Imaging and Graphics*, **2021**, 95, 102026	7.6	18
116	Enhancing the spatial resolution of hyperpolarized carbon-13 MRI of human brain metabolism using structure guidance. *Magnetic Resonance in Medicine*, **2021**,	4.4	1
115	Scanning electron diffraction tomography of strain. *Inverse Problems*, **2021**, 37, 015003	2.3	3
114	Common pitfalls and recommendations for using machine learning to detect and prognosticate for COVID-19 using chest radiographs and CT scans. *Nature Machine Intelligence*, **2021**, 3, 199-217	22.5	200
113	A deep-learning pipeline for the diagnosis and discrimination of viral, non-viral and COVID-19 pneumonia from chest X-ray images. *Nature Biomedical Engineering*, **2021**, 5, 509-521	19	25
112	Mechanisms Underlying Vascular Endothelial Growth Factor Receptor Inhibition-Induced Hypertension: The HYPAZ Trial. *Hypertension*, **2021**, 77, 1591-1599	8.5	4
111	Structure-preserving deep learning. *European Journal of Applied Mathematics*, **2021**, 32, 888-936	1	4
110	Equivariant neural networks for inverse problems. *Inverse Problems*, **2021**, 37, 085006	2.3	2
109	Rethinking medical image reconstruction via shape prior, going deeper and faster: Deep joint indirect registration and reconstruction. *Medical Image Analysis*, **2021**, 68, 101930	15.4	2
108	Compressed sensing plus motion (CS+M): A new perspective for improving undersampled MR image reconstruction. *Medical Image Analysis*, **2021**, 68, 101933	15.4	5
107	Variational multi-task MRI reconstruction: Joint reconstruction, registration and super-resolution. *Medical Image Analysis*, **2021**, 68, 101941	15.4	0
106	Equilibria of an anisotropic nonlocal interaction equation: Analysis and numerics. *Discrete and Continuous Dynamical Systems*, **2021**, 41, 3985	2	
105	Joint Motion Estimation and Source Identification Using Convective Regularisation with an Application to the Analysis of Laser Nanoablations **2021**, 191-227		

104	Joint Phase Reconstruction and Magnitude Segmentation from Velocity-Encoded MRI Data **2021**, 1-24		2
103	Choose Your Path Wisely: Gradient Descent in a Bregman Distance Framework. *SIAM Journal on Imaging Sciences*, **2021**, 14, 814-843	1.9	0
102	Exploiting prior knowledge about biological macromolecules in cryo-EM structure determination. *IUCrJ*, **2021**, 8, 60-75	4.7	7
101	Adversarially Learned Iterative Reconstruction for Imaging Inverse Problems. *Lecture Notes in Computer Science*, **2021**, 540-552	0.9	0
100	On Learned Operator Correction in Inverse Problems. *SIAM Journal on Imaging Sciences*, **2021**, 14, 92-127	1.9	11
99	Semi-Supervised Superpixel-Based Multi-Feature Graph Learning for Hyperspectral Image Data. *IEEE Transactions on Geoscience and Remote Sensing*, **2021**, 1-12	8.1	4
98	Radiological tumor classification across imaging modality and histology. *Nature Machine Intelligence* , **2021**, 3, 787-798	22.5	9
97	Learning optical flow for fast MRI reconstruction. *Inverse Problems*, **2021**, 37, 095007	2.3	1
96	3D deformable registration of longitudinal abdominopelvic CT images using unsupervised deep learning. *Computer Methods and Programs in Biomedicine*, **2021**, 208, 106261	6.9	3
95	Focus U-Net: A novel dual attention-gated CNN for polyp segmentation during colonoscopy. *Computers in Biology and Medicine*, **2021**, 137, 104815	7	15
94	A Variational Model Dedicated to Joint Segmentation, Registration, and Atlas Generation for Shape Analysis. *SIAM Journal on Imaging Sciences*, **2020**, 13, 351-380	1.9	2
93	A multi-contrast MRI approach to thalamus segmentation. *Human Brain Mapping*, **2020**, 41, 2104-2120	5.9	4
92	Superpixel Contracted Graph-Based Learning for Hyperspectral Image Classification. *IEEE Transactions on Geoscience and Remote Sensing*, **2020**, 58, 4180-4193	8.1	38
91	Optical flow analysis reveals that Kinesin-mediated advection impacts the orientation of microtubules in the oocyte. *Molecular Biology of the Cell*, **2020**, 31, 1246-1258	3.5	5
90	Variational Osmosis for Non-linear Image Fusion. *IEEE Transactions on Image Processing*, **2020**,	8.7	3
89	Analysis of Artifacts in Shell-Based Image Inpainting: Why They Occur and How to Eliminate Them. *Foundations of Computational Mathematics*, **2020**, 20, 1549-1651	2.7	1
88	Bregman Itoh-Abe Methods for Sparse Optimisation. *Journal of Mathematical Imaging and Vision*, **2020**, 62, 842-857	1.6	4
87	Learning to Segment Microscopy Images with Lazy Labels. *Lecture Notes in Computer Science*, **2020**, 411-428		1

86	Variational regularisation for inverse problems with imperfect forward operators and general noise models. *Inverse Problems*, **2020**, 36, 125014	2.3	2
85	Higher-Order Total Directional Variation: Imaging Applications. *SIAM Journal on Imaging Sciences*, **2020**, 13, 2063-2104	1.9	6
84	Accelerating variance-reduced stochastic gradient methods. *Mathematical Programming*, **2020**, 1	2.1	3
83	Learning the Sampling Pattern for MRI. *IEEE Transactions on Medical Imaging*, **2020**, 39, 4310-4321	11.7	11
82	Template-Based Image Reconstruction from Sparse Tomographic Data. *Applied Mathematics and Optimization*, **2020**, 82, 1081-1109	1.5	4
81	. *IEEE Transactions on Geoscience and Remote Sensing*, **2020**, 58, 754-776	8.1	22
80	Artificial intelligence in clinical imaging: a health system approach. *Clinical Radiology*, **2020**, 75, 3-6	2.9	10
79	Phase diagrams of liquid-phase mixing in multi-component metal-organic framework glasses constructed by quantitative elemental nano-tomography. *APL Materials*, **2019**, 7, 091111	5.7	9
78	Total Directional Variation for Video Denoising. *Lecture Notes in Computer Science*, **2019**, 522-534	0.9	0
77	Accurate Measurement of Tropical Forest Canopy Heights and Aboveground Carbon Using Structure From Motion. *Remote Sensing*, **2019**, 11, 928	5	33
76	Solving inverse problems using data-driven models. *Acta Numerica*, **2019**, 28, 1-174	15.1	173
75	Enhancing joint reconstruction and segmentation with non-convex Bregman iteration. *Inverse Problems*, **2019**, 35, 055001	2.3	12
74	An anisotropic interaction model for simulating fingerprints. *Journal of Mathematical Biology*, **2019**, 78, 2171-2206	2	4
73	Decoding the Interdependence of Multiparametric Magnetic Resonance Imaging to Reveal Patient Subgroups Correlated with Survivals. *Neoplasia*, **2019**, 21, 442-449	6.4	6
72	Anisotropic osmosis filtering for shadow removal in images. *Inverse Problems*, **2019**, 35, 054001	2.3	6
71	Mirror, Mirror, on the Wall, Who's Got the Clearest Image of Them All?-A Tailored Approach to Single Image Reflection Removal. *IEEE Transactions on Image Processing*, **2019**, 28, 6185-6197	8.7	5
70	Multi-tasking to Correct: Motion-Compensated MRI via Joint Reconstruction and Registration. *Lecture Notes in Computer Science*, **2019**, 263-274	0.9	4
69	A Total Variation Based Regularizer Promoting Piecewise-Lipschitz Reconstructions. *Lecture Notes in Computer Science*, **2019**, 485-497	0.9	1

68	Faster PET reconstruction with non-smooth priors by randomization and preconditioning. *Physics in Medicine and Biology*, **2019**, 64, 225019	3.8	12
67	Deep learning as optimal control problems: Models and numerical methods. *Journal of Computational Dynamics*, **2019**, 6, 171-198	2.6	12
66	GANReDL: Medical Image Enhancement Using a Generative Adversarial Network with Real-Order Derivative Induced Loss Functions. *Lecture Notes in Computer Science*, **2019**, 110-117	0.9	0
65	Linkage Between Piecewise Constant Mumford--Shah Model and Rudin--Osher--Fatemi Model and Its Virtue in Image Segmentation. *SIAM Journal of Scientific Computing*, **2019**, 41, B1310-B1340	2.6	12
64	Stability Analysis of Line Patterns of an Anisotropic Interaction Model. *SIAM Journal on Applied Dynamical Systems*, **2019**, 18, 1798-1845	2.8	3
63	Directional sinogram inpainting for limited angle tomography. *Inverse Problems*, **2019**, 35, 024004	2.3	20
62	Blind image fusion for hyperspectral imaging with the directional total variation. *Inverse Problems*, **2018**, 34, 044003	2.3	28
61	Inverse scale space decomposition. *Inverse Problems*, **2018**, 34, 045008	2.3	10
60	A Variational Model for Joint Motion Estimation and Image Reconstruction. *SIAM Journal on Imaging Sciences*, **2018**, 11, 94-128	1.9	32
59	Pattern formation of a nonlocal, anisotropic interaction model. *Mathematical Models and Methods in Applied Sciences*, **2018**, 28, 409-451	3.5	9
58	Liquid phase blending of metal-organic frameworks. *Nature Communications*, **2018**, 9, 2135	17.4	49
57	Mini-Workshop: Deep Learning and Inverse Problems. *Oberwolfach Reports*, **2018**, 15, 559-589	0	
56	**2018**,		4
55	Variational Image Regularization with Euler's Elastica Using a Discrete Gradient Scheme. *SIAM Journal on Imaging Sciences*, **2018**, 11, 2665-2691	1.9	12
54	Peekaboo-Where are the Objects? Structure Adjusting Superpixels **2018**,		4
53	Stochastic Primal-Dual Hybrid Gradient Algorithm with Arbitrary Sampling and Imaging Applications. *SIAM Journal on Optimization*, **2018**, 28, 2783-2808	2	50
52	Unveiling the invisible: mathematical methods for restoring and interpreting illuminated manuscripts. *Heritage Science*, **2018**, 6, 56	2.5	10
51	Bilevel Parameter Learning for Higher-Order Total Variation Regularisation Models. *Journal of Mathematical Imaging and Vision*, **2017**, 57, 1-25	1.6	44

50	Mathematical imaging methods for mitosis analysis in live-cell phase contrast microscopy. *Methods*, **2017**, 115, 91-99	4.6	5
49	Learning to Diversify Deep Belief Networks for Hyperspectral Image Classification. *IEEE Transactions on Geoscience and Remote Sensing*, **2017**, 55, 3516-3530	8.1	201
48	Entropic Comparison of Atomic-Resolution Electron Tomography of Crystals and Amorphous Materials. *Physical Review Letters*, **2017**, 119, 166101	7.4	4
47	Infimal Convolution of Data Discrepancies for Mixed Noise Removal. *SIAM Journal on Imaging Sciences*, **2017**, 10, 1196-1233	1.9	29
46	Introduction: Big data and partial differential equations *European Journal of Applied Mathematics*, **2017**, 28, 877-885	1	2
45	Preface for Inverse Problems special issue on learning and inverse problems. *Inverse Problems*, **2017** , 33, 070301	2.3	
44	Discrete gradient methods for solving variational image regularisation models. *Journal of Physics A: Mathematical and Theoretical*, **2017**, 50, 295201	2	15
43	Graph Clustering, Variational Image Segmentation Methods and Hough Transform Scale Detection for Object Measurement in Images. *Journal of Mathematical Imaging and Vision*, **2017**, 57, 269-291	1.6	16
42	Guidefill: GPU Accelerated, Artist Guided Geometric Inpainting for 3D Conversion of Film. *SIAM Journal on Imaging Sciences*, **2017**, 10, 2049-2090	1.9	2
41	Nonlinear Spectral Image Fusion. *Lecture Notes in Computer Science*, **2017**, 41-53	0.9	11
40	Learning Filter Functions in Regularisers by Minimising Quotients. *Lecture Notes in Computer Science*, **2017**, 511-523	0.9	3
39	Individual Tree Species Classification From Airborne Multisensor Imagery Using Robust PCA. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, **2016**, 9, 2554-2567	4.7	37
38	Learning parametrised regularisation functions via quotient minimisation. *Proceedings in Applied Mathematics and Mechanics*, **2016**, 16, 933-936	0.2	3
37	A DBN-crf for spectral-spatial classification of hyperspectral data **2016**,		2
36	Infimal Convolution Regularisation Functionals of BV and [Formula: see text] Spaces: Part I: The Finite [Formula: see text] Case. *Journal of Mathematical Imaging and Vision*, **2016**, 55, 343-369	1.6	19
35	The structure of optimal parameters for image restoration problems. *Journal of Mathematical Analysis and Applications*, **2016**, 434, 464-500	1.1	25
34	Preconditioned ADMM with Nonlinear Operator Constraint. *IFIP Advances in Information and Communication Technology*, **2016**, 117-126	0.5	15
33	Infimal Convolution Regularisation Functionals of (mathrm {BV}) and (mathrm {L}^{p}) Spaces. The Case (p=infty). *IFIP Advances in Information and Communication Technology*, **2016**, 169-179	0.5	4

32	8. Bilevel approaches for learning of variational imaging models **2016**, 252-290		13
31	Nonparametric Image Registration of Airborne LiDAR, Hyperspectral and Photographic Imagery of Wooded Landscapes. *IEEE Transactions on Geoscience and Remote Sensing*, **2015**, 53, 6073-6084	8.1	15
30	Analysis and Application of a Nonlocal Hessian. *SIAM Journal on Imaging Sciences*, **2015**, 8, 2161-2202	1.9	9
29	Mapping individual trees from airborne multi-sensor imagery **2015**,		1
28	Variational Depth From Focus Reconstruction. *IEEE Transactions on Image Processing*, **2015**, 24, 5369-78	8.7	54
27	Partial Differential Equation Methods for Image Inpainting **2015**,		38
26	ADI splitting schemes for a fourth-order nonlinear partial differential equation from image processing. *Discrete and Continuous Dynamical Systems*, **2014**, 34, 931-957	2	11
25	A Combined First and Second Order Variational Approach for Image Reconstruction. *Journal of Mathematical Imaging and Vision*, **2014**, 48, 308-338	1.6	170
24	Imaging with Kantorovich--Rubinstein Discrepancy. *SIAM Journal on Imaging Sciences*, **2014**, 7, 2833-2859	1.9	43
23	Phase reconstruction from velocity-encoded MRI measurements--a survey of sparsity-promoting variational approaches. *Journal of Magnetic Resonance*, **2014**, 238, 26-43	3	45
22	Dynamic Sampling Schemes for Optimal Noise Learning Under Multiple Nonsmooth Constraints. *IFIP Advances in Information and Communication Technology*, **2014**, 85-95	0.5	4
21	Bregmanized Domain Decomposition for Image Restoration. *Journal of Scientific Computing*, **2013**, 54, 549-576	2.3	13
20	Random simulations for generative art construction some examples. *Journal of Mathematics and the Arts*, **2013**, 7, 29-39	0.3	1
19	Image denoising: Learning the noise model via nonsmooth PDE-constrained optimization. *Inverse Problems and Imaging*, **2013**, 7, 1183-1214	2.1	51
18	A Primal-Dual Approach for a Total Variation Wasserstein Flow. *Lecture Notes in Computer Science*, **2013**, 413-421	0.9	3
17	Anisotropic Third-Order Regularization for Sparse Digital Elevation Models. *Lecture Notes in Computer Science*, **2013**, 161-173	0.9	2
16	Oriented diffusion filtering for enhancing low-quality fingerprint images. *IET Biometrics*, **2012**, 1, 105	2.9	49
15	Wavelet Decomposition Method for $L_2/$/TV-Image Deblurring. *SIAM Journal on Imaging Sciences*, **2012**, 5, 857-885	1.9	14

14	Regularized Regression and Density Estimation based on Optimal Transport. *Applied Mathematics Research EXpress*, **2012**,		5
13	A high-contrast fourth-order PDE from imaging: numerical solution by ADI splitting. *Contemporary Mathematics*, **2012**, 93-103	1.6	3
12	Unconditionally stable schemes for higher order inpainting. *Communications in Mathematical Sciences*, **2011**, 9, 413-457	1	61
11	Nonlocal higher order evolution equations. *Applicable Analysis*, **2010**, 89, 949-960	0.8	1
10	A convergent overlapping domain decomposition method for total variation minimization. *Numerische Mathematik*, **2010**, 116, 645-685	2.2	31
9	Subspace Correction Methods for Total Variation and ell_1-Minimization. *SIAM Journal on Numerical Analysis*, **2009**, 47, 3397-3428	2.4	36
8	Cahn□Hilliard Inpainting and a Generalization for Grayvalue Images. *SIAM Journal on Imaging Sciences*, **2009**, 2, 1129-1167	1.9	93
7	AN OPTIMIZATION PROBLEM RELATED TO THE BEST SOBOLEV TRACE CONSTANT IN THIN DOMAINS. *Communications in Contemporary Mathematics*, **2008**, 10, 633-650	1.1	2
6	A generalization of Cahn-Hilliard inpainting for grayvalue images. *Proceedings in Applied Mathematics and Mechanics*, **2007**, 7, 1041905-1041906	0.2	
5	Cahn-Hilliard inpainting and the Willmore functional. *Proceedings in Applied Mathematics and Mechanics*, **2007**, 7, 1011209-1011210	0.2	
4	Exploiting prior knowledge about biological macromolecules in cryo-EM structure determination		1
3	Joint Motion Estimation and Source Identification using Convective Regularisation with an Application to the Analysis of Laser Nanoablations		2
2	Optical flow analysis reveals that Kinesin-mediated advection impacts on the orientation of microtubules in the Drosophila oocyte		2
1	A Geometric Integration Approach to Nonsmooth, Nonconvex Optimisation. *Foundations of Computational Mathematics*,1	2.7	