

Rebecca M Willett

List of Publications by Year in descending order

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Version: 2024-02-01

118
papers

4,071
citations

218677

26
h-index

138484

58
g-index

120
all docs

120
docs citations

120
times ranked

3315
citing authors

#	ARTICLE	IF	CITATIONS
1	Single disperser design for coded aperture snapshot spectral imaging. Applied Optics, 2008, 47, B44.	2.1	694
2	Deep Learning Techniques for Inverse Problems in Imaging. IEEE Journal on Selected Areas in Information Theory, 2020, 1, 39-56.	2.5	292
3	This is SPIRAL-TAP: Sparse Poisson Intensity Reconstruction Algorithms—Theory and Practice. IEEE Transactions on Image Processing, 2012, 21, 1084-1096.	9.8	281
4	Platelets: a multiscale approach for recovering edges and surfaces in photon-limited medical imaging. IEEE Transactions on Medical Imaging, 2003, 22, 332-350.	8.9	227
5	Poisson Noise Reduction with Non-local PCA. Journal of Mathematical Imaging and Vision, 2014, 48, 279-294.	1.3	222
6	Backcasting. , 2004, , .		161
7	Sparsity and Structure in Hyperspectral Imaging : Sensing, Reconstruction, and Target Detection. IEEE Signal Processing Magazine, 2014, 31, 116-126.	5.6	157
8	Online Convex Optimization in Dynamic Environments. IEEE Journal on Selected Topics in Signal Processing, 2015, 9, 647-662.	10.8	132
9	Compressed Sensing Performance Bounds Under Poisson Noise. IEEE Transactions on Signal Processing, 2010, 58, 3990-4002.	5.3	115
10	Neumann Networks for Linear Inverse Problems in Imaging. IEEE Transactions on Computational Imaging, 2020, 6, 328-343.	4.4	111
11	Multi-excitation Raman spectroscopy technique for fluorescence rejection. Optics Express, 2008, 16, 10975.	3.4	96
12	Engineering induction of singular neural rosette emergence within hPSC-derived tissues. ELife, 2018, 7, .	6.0	81
13	Multiscale Poisson Intensity and Density Estimation. IEEE Transactions on Information Theory, 2007, 53, 3171-3187.	2.4	80
14	Change-Point Detection for High-Dimensional Time Series With Missing Data. IEEE Journal on Selected Topics in Signal Processing, 2013, 7, 12-27.	10.8	80
15	Thin infrared imaging systems through multichannel sampling. Applied Optics, 2008, 47, B1.	2.1	77
16	RADIOACTIVE SCANDIUM IN THE YOUNGEST GALACTIC SUPERNOVA REMNANT G1.9+0.3. Astrophysical Journal Letters, 2010, 724, L161-L165.	8.3	66
17	Compressive coded aperture superresolution image reconstruction. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	55
18	Deep Equilibrium Architectures for Inverse Problems in Imaging. IEEE Transactions on Computational Imaging, 2021, 7, 1123-1133.	4.4	54

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19	EXPANSION OF THE YOUNGEST GALACTIC SUPERNOVA REMNANT G1.9+0.3. <i>Astrophysical Journal Letters</i> , 2011, 737, L22.	8.3	53
20	Compressive coded aperture imaging. <i>Proceedings of SPIE</i> , 2009, , .	0.8	47
21	Compressive Optical Imaging: Architectures and Algorithms. , 2011, , 485-505.		45
22	Performance Bounds for Expander-Based Compressed Sensing in Poisson Noise. <i>IEEE Transactions on Signal Processing</i> , 2011, 59, 4139-4153.	5.3	42
23	SUPERNOVA EJECTA IN THE YOUNGEST GALACTIC SUPERNOVA REMNANT G1.9+0.3. <i>Astrophysical Journal Letters</i> , 2013, 771, L9.	8.3	42
24	Online Markov Decision Processes With Kullback-Leibler Control Cost. <i>IEEE Transactions on Automatic Control</i> , 2014, 59, 1423-1438.	5.7	40
25	Hypergraph-Based Anomaly Detection of High-Dimensional Co-Occurrences. <i>IEEE Transactions on Pattern Analysis and Machine Intelligence</i> , 2009, 31, 563-569.	13.9	35
26	PMU-Based Detection of Imbalance in Three-Phase Power Systems. <i>IEEE Transactions on Power Systems</i> , 2015, 30, 1966-1976.	6.5	35
27	Sequential Anomaly Detection in the Presence of Noise and Limited Feedback. <i>IEEE Transactions on Information Theory</i> , 2012, 58, 5544-5562.	2.4	34
28	Non-rigid registration and non-local principle component analysis to improve electron microscopy spectrum images. <i>Nanotechnology</i> , 2016, 27, 364001.	2.6	30
29	Tracking Dynamic Point Processes on Networks. <i>IEEE Transactions on Information Theory</i> , 2016, 62, 4327-4346.	2.4	28
30	Sparse poisson intensity reconstruction algorithms. , 2009, , .		26
31	Approach to simultaneously denoise and invert backscatter and extinction from photon-limited atmospheric lidar observations. <i>Applied Optics</i> , 2016, 55, 8316.	2.1	24
32	Rapid staining and imaging of subnuclear features to differentiate between malignant and benign breast tissues at a point-of-care setting. <i>Journal of Cancer Research and Clinical Oncology</i> , 2016, 142, 1475-1486.	2.5	24
33	Asymmetric Expansion of the Youngest Galactic Supernova Remnant G1.9+0.3. <i>Astrophysical Journal Letters</i> , 2017, 837, L7.	8.3	24
34	Poisson image reconstruction with total variation regularization. , 2010, , .		23
35	Multiscale Photon-Limited Spectral Image Reconstruction. <i>SIAM Journal on Imaging Sciences</i> , 2010, 3, 619-645.	2.2	23
36	Decentralized Online Convex Programming with local information. , 2011, , .		23

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37	Minimax Optimal Rates for Poisson Inverse Problems With Physical Constraints. IEEE Transactions on Information Theory, 2015, 61, 4458-4474.	2.4	22
38	Reducing Basis Mismatch in Harmonic Signal Recovery via Alternating Convex Search. IEEE Signal Processing Letters, 2014, 21, 1007-1011.	3.6	21
39	NONUNIFORM EXPANSION OF THE YOUNGEST GALACTIC SUPERNOVA REMNANT G1.9+0.3. Astrophysical Journal Letters, 2014, 790, L18.	8.3	21
40	Model Adaptation for Inverse Problems in Imaging. IEEE Transactions on Computational Imaging, 2021, 7, 661-674.	4.4	21
41	Oracle Inequalities and Minimax Rates for Nonlocal Means and Related Adaptive Kernel-Based Methods. SIAM Journal on Imaging Sciences, 2012, 5, 944-992.	2.2	18
42	SPIRAL out of convexity: sparsity-regularized algorithms for photon-limited imaging. Proceedings of SPIE, 2010, , .	0.8	17
43	Quantitative Segmentation of Fluorescence Microscopy Images of Heterogeneous Tissue: Application to the Detection of Residual Disease in Tumor Margins. PLoS ONE, 2013, 8, e66198.	2.5	17
44	Superimposed video disambiguation for increased field of view. Optics Express, 2008, 16, 16352.	3.4	15
45	Leveraging spatial textures, through machine learning, to identify aerosols and distinct cloud types from multispectral observations. Atmospheric Measurement Techniques, 2020, 13, 5459-5480.	3.1	14
46	Graph Signal Processing: Foundations and Emerging Directions [From the Guest Editors]. IEEE Signal Processing Magazine, 2020, 37, 11-13.	5.6	14
47	An optimal statistical and computational framework for generalized tensor estimation. Annals of Statistics, 2022, 50, .	2.6	14
48	A Data-Dependent Weighted LASSO Under Poisson Noise. IEEE Transactions on Information Theory, 2019, 65, 1589-1613.	2.4	13
49	Network Estimation From Point Process Data. IEEE Transactions on Information Theory, 2019, 65, 2953-2975.	2.4	13
50	Algorithms for differentiating between images of heterogeneous tissue across fluorescence microscopes. Biomedical Optics Express, 2016, 7, 3412.	2.9	12
51	Hyperspectral target detection from incoherent projections. , 2010, , .		11
52	Learning High-Dimensional Generalized Linear Autoregressive Models. IEEE Transactions on Information Theory, 2019, 65, 2401-2422.	2.4	11
53	Hyperspectral target detection from incoherent projections: Nonequiprobable targets and inhomogeneous SNR. , 2010, , .		9
54	Gradient projection for linearly constrained convex optimization in sparse signal recovery. , 2010, , .		9

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55	Target detection performance bounds in compressive imaging. <i>Eurasip Journal on Advances in Signal Processing</i> , 2012, 2012, .	1.7	9
56	Detection of anomalous meetings in a social network. , 2008, , .		8
57	Sparsity-regularized photon-limited imaging. , 2010, , .		8
58	A two-stage denoising filter: The preprocessed Yaroslavsky filter. , 2012, , .		8
59	A quantitative microscopic approach to predict local recurrence based on <i>in vivo</i> intraoperative imaging of sarcoma tumor margins. <i>International Journal of Cancer</i> , 2015, 137, 2403-2412.	5.1	8
60	Tensor Methods for Nonlinear Matrix Completion. <i>SIAM Journal on Mathematics of Data Science</i> , 2021, 3, 253-279.	1.8	8
61	Performance bounds on compressed sensing with Poisson noise. , 2009, , .		7
62	Online anomaly detection with expert system feedback in social networks. , 2011, , .		7
63	Logarithmic total variation regularization for cross-validation in photon-limited imaging. , 2013, , .		7
64	Structured Illumination Microscopy and a Quantitative Image Analysis for the Detection of Positive Margins in a Pre-Clinical Genetically Engineered Mouse Model of Sarcoma. <i>PLoS ONE</i> , 2016, 11, e0147006.	2.5	7
65	Data-Driven Cloud Clustering via a Rotationally Invariant Autoencoder. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2022, 60, 1-25.	6.3	7
66	Performance bounds for expander-based compressed sensing in the presence of Poisson noise. , 2009, , .		6
67	Compressive coded apertures for high-resolution imaging. , 2010, , .		6
68	Multiscale online tracking of manifolds. , 2012, , .		6
69	Coded-aperture Raman imaging for standoff explosive detection. , 2012, , .		6
70	To e or not to e in poisson image reconstruction. , 2014, , .		6
71	Controlling the error in fMRI: Hypothesis testing or set estimation?. , 2008, , .		5
72	Sequential probability assignment via online convex programming using exponential families. , 2009, , .		5

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73	The false discovery rate for statistical pattern recognition. <i>Electronic Journal of Statistics</i> , 2009, 3, .	0.7	5
74	Online logistic regression on manifolds. , 2013, , .		5
75	Online Data Thinning via Multi-Subspace Tracking. <i>IEEE Transactions on Pattern Analysis and Machine Intelligence</i> , 2019, 41, 1173-1187.	13.9	5
76	Single disperser design for compressive, single-snapshot spectral imaging. <i>Proceedings of SPIE</i> , 2007, , .	0.8	4
77	Fishing in Poisson streams: Focusing on the whales, ignoring the minnows. , 2010, , .		4
78	Tissue quantification in photon-limited microendoscopy. <i>Proceedings of SPIE</i> , 2011, , .	0.8	4
79	Compressed sensing for practical optical imaging systems: A tutorial. , 2012, , .		4
80	Inferring high-dimensional poisson autoregressive models. , 2016, , .		4
81	Learned Patch-Based Regularization for Inverse Problems in Imaging. , 2019, , .		4
82	Multiscale Reconstruction of Photon-Limited Hyperspectral Data. , 2007, , .		3
83	Fast disambiguation of superimposed images for increased field of view. , 2008, , .		3
84	Dynamic relational topic model for social network analysis with noisy links. , 2011, , .		3
85	Foreground and background reconstruction in poisson video. , 2013, , .		3
86	A recursive procedure for density estimation on the binary hypercube. <i>Electronic Journal of Statistics</i> , 2013, 7, .	0.7	3
87	Sparse linear contextual bandits via relevance vector machines. , 2017, , .		3
88	Graph-Based Regularization for Regression Problems with Alignment and Highly Correlated Designs. <i>SIAM Journal on Mathematics of Data Science</i> , 2020, 2, 480-504.	1.8	3
89	Multiresolution nonparametric intensity and density estimation. , 2002, , .		2
90	Multiscale likelihood analysis and image reconstruction. , 2003, 5207, 97.		2

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91	Minimax optimal level set estimation. , 2005, 5914, 430.		2
92	Multiscale Intensity Estimation for Marked Poisson Processes. , 2007, , .		2
93	Multiscale Reconstruction for Photon-Limited Shifted Excitation Raman Spectroscopy. , 2007, , .		2
94	Generalization Error Analysis for FDR Controlled Classification. , 2007, , .		2
95	Fast level set estimation from projection measurements. , 2011, , .		2
96	Smooth sampling trajectories for sparse recovery in MRI. , 2011, , .		2
97	Online Markov decision processes with Kullback-Leibler control cost. , 2012, , .		2
98	Level Set Estimation from Projection Measurements: Performance Guarantees and Fast Computation. SIAM Journal on Imaging Sciences, 2013, 6, 2047-2074.	2.2	2
99	From minimax value to low-regret algorithms for online Markov decision processes. , 2014, , .		2
100	Online learning of neural network structure from spike trains. , 2015, , .		2
101	Integrating Sensing and Information Processing in an Electrical and Computer Engineering undergraduate curriculum. , 2009, , .		1
102	Short and smooth sampling trajectories for compressed sensing. , 2011, , .		1
103	Time-evolving modeling of social networks. , 2011, , .		1
104	Online optimization in parametric dynamic environments. , 2013, , .		1
105	Regret minimization algorithms for single-controller zero-sum stochastic games. , 2016, , .		1
106	Signal representations in modern signal processing. , 2017, , .		1
107	Network estimation via poisson autoregressive models. , 2017, , .		1
108	Model Adaptation In Biomedical Image Reconstruction. , 2021, , .		1

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109	MULTISCALE INTENSITY ESTIMATION FOR MULTI-PHOTON MICROSCOPY. , 2007, , .		0
110	Image reconstruction of multiphoton microscopy data. , 2009, , 803-806.		0
111	Session WA1: Sparse representations and compressive sensing. , 2009, , .		0
112	The value of multispectral observations in photon-limited quantitative tissue analysis. , 2012, , .		0
113	Dual-scale masks for spatio-temporal compressive imaging. , 2013, , .		0
114	Combining Non-Rigid Registration with Non-Local Principle Component Analysis for Atomic Resolution EDS Mapping. Microscopy and Microanalysis, 2016, 22, 1406-1407.	0.4	0
115	Atmospheric lidar imaging and poisson inverse problems. , 2016, , .		0
116	Genomic transcription regulatory element location analysis via poisson weighted lasso. , 2016, , .		0
117	Sparse Transition Matrix Estimation for Sub-Gaussian Autoregressive Processes with Missing Data. , 2018, , .		0
118	Learning to Regularize Using Neumann Networks. , 2019, , .		0