

# Rebecca M Willett

## List of Publications by Year in descending order

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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	Data-Driven Cloud Clustering via a Rotationally Invariant Autoencoder. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60, 1-25.	6.3	7
2	An optimal statistical and computational framework for generalized tensor estimation. Annals of Statistics, 2022, 50, .	2.6	14
3	Model Adaptation In Biomedical Image Reconstruction. , 2021, , .		1
4	Model Adaptation for Inverse Problems in Imaging. IEEE Transactions on Computational Imaging, 2021, 7, 661-674.	4.4	21
5	Tensor Methods for Nonlinear Matrix Completion. SIAM Journal on Mathematics of Data Science, 2021, 3, 253-279.	1.8	8
6	Deep Equilibrium Architectures for Inverse Problems in Imaging. IEEE Transactions on Computational Imaging, 2021, 7, 1123-1133.	4.4	54
7	Neumann Networks for Linear Inverse Problems in Imaging. IEEE Transactions on Computational Imaging, 2020, 6, 328-343.	4.4	111
8	Graph-Based Regularization for Regression Problems with Alignment and Highly Correlated Designs. SIAM Journal on Mathematics of Data Science, 2020, 2, 480-504.	1.8	3
9	Deep Learning Techniques for Inverse Problems in Imaging. IEEE Journal on Selected Areas in Information Theory, 2020, 1, 39-56.	2.5	292
10	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
11	Graph Signal Processing: Foundations and Emerging Directions [From the Guest Editors]. IEEE Signal Processing Magazine, 2020, 37, 11-13.	5.6	14
12	Learning to Regularize Using Neumann Networks. , 2019, , .		0
13	Learned Patch-Based Regularization for Inverse Problems in Imaging. , 2019, , .		4
14	A Data-Dependent Weighted LASSO Under Poisson Noise. IEEE Transactions on Information Theory, 2019, 65, 1589-1613.	2.4	13
15	Network Estimation From Point Process Data. IEEE Transactions on Information Theory, 2019, 65, 2953-2975.	2.4	13
16	Learning High-Dimensional Generalized Linear Autoregressive Models. IEEE Transactions on Information Theory, 2019, 65, 2401-2422.	2.4	11
17	Online Data Thinning via Multi-Subspace Tracking. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2019, 41, 1173-1187.	13.9	5
18	Sparse Transition Matrix Estimation for Sub-Gaussian Autoregressive Processes with Missing Data. , 2018, , .		0

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19	Engineering induction of singular neural rosette emergence within hPSC-derived tissues. <i>ELife</i> , 2018, 7, .	6.0	81
20	Asymmetric Expansion of the Youngest Galactic Supernova Remnant G1.9+0.3. <i>Astrophysical Journal Letters</i> , 2017, 837, L7.	8.3	24
21	Signal representations in modern signal processing. , 2017, , .		1
22	Network estimation via poisson autoregressive models. , 2017, , .		1
23	Sparse linear contextual bandits via relevance vector machines. , 2017, , .		3
24	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
25	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
26	Algorithms for differentiating between images of heterogeneous tissue across fluorescence microscopes. <i>Biomedical Optics Express</i> , 2016, 7, 3412.	2.9	12
27	Combining Non-Rigid Registration with Non-Local Principle Component Analysis for Atomic Resolution EDS Mapping. <i>Microscopy and Microanalysis</i> , 2016, 22, 1406-1407.	0.4	0
28	Regret minimization algorithms for single-controller zero-sum stochastic games. , 2016, , .		1
29	Non-rigid registration and non-local principle component analysis to improve electron microscopy spectrum images. <i>Nanotechnology</i> , 2016, 27, 364001.	2.6	30
30	Inferring high-dimensional poisson autoregressive models. , 2016, , .		4
31	Atmospheric lidar imaging and poisson inverse problems. , 2016, , .		0
32	Genomic transcription regulatory element location analysis via poisson weighted lasso. , 2016, , .		0
33	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
34	Tracking Dynamic Point Processes on Networks. <i>IEEE Transactions on Information Theory</i> , 2016, 62, 4327-4346.	2.4	28
35	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
36	Online Convex Optimization in Dynamic Environments. <i>IEEE Journal on Selected Topics in Signal Processing</i> , 2015, 9, 647-662.	10.8	132

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37	Online learning of neural network structure from spike trains. , 2015, , .		2
38	Minimax Optimal Rates for Poisson Inverse Problems With Physical Constraints. IEEE Transactions on Information Theory, 2015, 61, 4458-4474.	2.4	22
39	PMU-Based Detection of Imbalance in Three-Phase Power Systems. IEEE Transactions on Power Systems, 2015, 30, 1966-1976.	6.5	35
40	To e or not to e in poisson image reconstruction. , 2014, , .		6
41	From minimax value to low-regret algorithms for online Markov decision processes. , 2014, , .		2
42	Poisson Noise Reduction with Non-local PCA. Journal of Mathematical Imaging and Vision, 2014, 48, 279-294.	1.3	222
43	Online Markov Decision Processes With Kullbackâ€“Leibler Control Cost. IEEE Transactions on Automatic Control, 2014, 59, 1423-1438.	5.7	40
44	Reducing Basis Mismatch in Harmonic Signal Recovery via Alternating Convex Search. IEEE Signal Processing Letters, 2014, 21, 1007-1011.	3.6	21
45	NONUNIFORM EXPANSION OF THE YOUNGEST GALACTIC SUPERNOVA REMNANT G1.9+0.3. Astrophysical Journal Letters, 2014, 790, L18.	8.3	21
46	Sparsity and Structure in Hyperspectral Imaging : Sensing, Reconstruction, and Target Detection. IEEE Signal Processing Magazine, 2014, 31, 116-126.	5.6	157
47	Online optimization in parametric dynamic environments. , 2013, , .		1
48	SUPERNOVA EJECTA IN THE YOUNGEST GALACTIC SUPERNOVA REMNANT G1.9+0.3. Astrophysical Journal Letters, 2013, 771, L9.	8.3	42
49	Level Set Estimation from Projection Measurements: Performance Guarantees and Fast Computation. SIAM Journal on Imaging Sciences, 2013, 6, 2047-2074.	2.2	2
50	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
51	Online logistic regression on manifolds. , 2013, , .		5
52	Dual-scale masks for spatio-temporal compressive imaging. , 2013, , .		0
53	Foreground and background reconstruction in poisson video. , 2013, , .		3
54	Logarithmic total variation regularization for cross-validation in photon-limited imaging. , 2013, , .		7

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55	A recursive procedure for density estimation on the binary hypercube. <i>Electronic Journal of Statistics</i> , 2013, 7, .	0.7	3
56	Quantitative Segmentation of Fluorescence Microscopy Images of Heterogeneous Tissue: Application to the Detection of Residual Disease in Tumor Margins. <i>PLoS ONE</i> , 2013, 8, e66198.	2.5	17
57	Multiscale online tracking of manifolds. , 2012, , .		6
58	Online Markov decision processes with Kullback-Leibler control cost. , 2012, , .		2
59	Oracle Inequalities and Minimax Rates for Nonlocal Means and Related Adaptive Kernel-Based Methods. <i>SIAM Journal on Imaging Sciences</i> , 2012, 5, 944-992.	2.2	18
60	A two-stage denoising filter: The preprocessed Yaroslavsky filter. , 2012, , .		8
61	The value of multispectral observations in photon-limited quantitative tissue analysis. , 2012, , .		0
62	Coded-aperture Raman imaging for standoff explosive detection. , 2012, , .		6
63	Compressed sensing for practical optical imaging systems: A tutorial. , 2012, , .		4
64	Target detection performance bounds in compressive imaging. <i>Eurasip Journal on Advances in Signal Processing</i> , 2012, 2012, .	1.7	9
65	This is SPIRAL-TAP: Sparse Poisson Intensity Reconstruction Algorithmsâ€™ Theory and Practice. <i>IEEE Transactions on Image Processing</i> , 2012, 21, 1084-1096.	9.8	281
66	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
67	Dynamic relational topic model for social network analysis with noisy links. , 2011, , .		3
68	Fast level set estimation from projection measurements. , 2011, , .		2
69	Performance Bounds for Expander-Based Compressed Sensing in Poisson Noise. <i>IEEE Transactions on Signal Processing</i> , 2011, 59, 4139-4153.	5.3	42
70	EXPANSION OF THE YOUNGEST GALACTIC SUPERNOVA REMNANT G1.9+0.3. <i>Astrophysical Journal Letters</i> , 2011, 737, L22.	8.3	53
71	Tissue quantification in photon-limited microendoscopy. <i>Proceedings of SPIE</i> , 2011, , .	0.8	4
72	Compressive Optical Imaging: Architectures and Algorithms. , 2011, , 485-505.		45

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73	Decentralized Online Convex Programming with local information. , 2011, , .		23
74	Online anomaly detection with expert system feedback in social networks. , 2011, , .		7
75	Short and smooth sampling trajectories for compressed sensing. , 2011, , .		1
76	Smooth sampling trajectories for sparse recovery in MRI. , 2011, , .		2
77	Time-evolving modeling of social networks. , 2011, , .		1
78	RADIOACTIVE SCANDIUM IN THE YOUNGEST GALACTIC SUPERNOVA REMNANT G1.9+0.3. Astrophysical Journal Letters, 2010, 724, L161-L165.	8.3	66
79	SPIRAL out of convexity: sparsity-regularized algorithms for photon-limited imaging. Proceedings of SPIE, 2010, , .	0.8	17
80	Compressive coded apertures for high-resolution imaging. , 2010, , .		6
81	Hyperspectral target detection from incoherent projections: Nonequiprobable targets and inhomogeneous SNR. , 2010, , .		9
82	Gradient projection for linearly constrained convex optimization in sparse signal recovery. , 2010, , .		9
83	Poisson image reconstruction with total variation regularization. , 2010, , .		23
84	Hyperspectral target detection from incoherent projections. , 2010, , .		11
85	Compressed Sensing Performance Bounds Under Poisson Noise. IEEE Transactions on Signal Processing, 2010, 58, 3990-4002.	5.3	115
86	Multiscale Photon-Limited Spectral Image Reconstruction. SIAM Journal on Imaging Sciences, 2010, 3, 619-645.	2.2	23
87	Sparsity-regularized photon-limited imaging. , 2010, , .		8
88	Fishing in Poisson streams: Focusing on the whales, ignoring the minnows. , 2010, , .		4
89	Sparse poisson intensity reconstruction algorithms. , 2009, , .		26
90	Sequential probability assignment via online convex programming using exponential families. , 2009, , .		5

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91	Image reconstruction of multiphoton microscopy data. , 2009, , 803-806.		0
92	Integrating Sensing and Information Processing in an Electrical and Computer Engineering undergraduate curriculum. , 2009, , .		1
93	Compressive coded aperture imaging. Proceedings of SPIE, 2009, , .	0.8	47
94	Performance bounds for expander-based compressed sensing in the presence of Poisson noise. , 2009, , .		6
95	Performance bounds on compressed sensing with Poisson noise. , 2009, , .		7
96	Hypergraph-Based Anomaly Detection of High-Dimensional Co-Occurrences. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2009, 31, 563-569.	13.9	35
97	The false discovery rate for statistical pattern recognition. Electronic Journal of Statistics, 2009, 3, .	0.7	5
98	Session WA1: Sparse representations and compressive sensing. , 2009, , .		0
99	Detection of anomalous meetings in a social network. , 2008, , .		8
100	Thin infrared imaging systems through multichannel sampling. Applied Optics, 2008, 47, B1.	2.1	77
101	Single disperser design for coded aperture snapshot spectral imaging. Applied Optics, 2008, 47, B44.	2.1	694
102	Multi-excitation Raman spectroscopy technique for fluorescence rejection. Optics Express, 2008, 16, 10975.	3.4	96
103	Superimposed video disambiguation for increased field of view. Optics Express, 2008, 16, 16352.	3.4	15
104	Controlling the error in FMRI: Hypothesis testing or set estimation?. , 2008, , .		5
105	Compressive coded aperture superresolution image reconstruction. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	55
106	Fast disambiguation of superimposed images for increased field of view. , 2008, , .		3
107	MULTISCALE INTENSITY ESTIMATION FOR MULTI-PHOTON MICROSCOPY. , 2007, , .		0
108	Multiscale Intensity Estimation for Marked Poisson Processes. , 2007, , .		2

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109	Multiscale Reconstruction for Photon-Limited Shifted Excitation Raman Spectroscopy. , 2007, , .		2
110	Generalization Error Analysis for FDR Controlled Classification. , 2007, , .		2
111	Single disperser design for compressive, single-snapshot spectral imaging. Proceedings of SPIE, 2007, , .	0.8	4
112	Multiscale Reconstruction of Photon-Limited Hyperspectral Data. , 2007, , .		3
113	Multiscale Poisson Intensity and Density Estimation. IEEE Transactions on Information Theory, 2007, 53, 3171-3187.	2.4	80
114	Minimax optimal level set estimation. , 2005, 5914, 430.		2
115	Backcasting. , 2004, , .		161
116	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
117	Multiscale likelihood analysis and image reconstruction. , 2003, 5207, 97.		2
118	Multiresolution nonparametric intensity and density estimation. , 2002, , .		2