Michael B Wakin

List of Publications by Year
in descending order

120 papers	17,988 citations	218677 26 h-index	128289 60 g-index
121 all docs	121 docs citations	121 times ranked	11764 citing authors

#	Article	IF	Citations
1	An Introduction To Compressive Sampling. IEEE Signal Processing Magazine, 2008, 25, 21-30.	5.6	7,855
2	Enhancing Sparsity by Reweighted â„" 1 Minimization. Journal of Fourier Analysis and Applications, 2008, 14, 877-905.	1.0	3,783
3	A Simple Proof of the Restricted Isometry Property for Random Matrices. Constructive Approximation, 2008, 28, 253-263.	3.0	1,707
4	Signal Processing With Compressive Measurements. IEEE Journal on Selected Topics in Signal Processing, 2010, 4, 445-460.	10.8	510
5	Analysis of Orthogonal Matching Pursuit Using the Restricted Isometry Property. IEEE Transactions on Information Theory, 2010, 56, 4395-4401.	2.4	383
6	<title>A new compressive imaging camera architecture using optical-domain compression</title>. , 2006, 6065, 43.		302
7	Analog-to-Information Conversion via Random Demodulation. , 2006, , .		269
8	Random Projections of Smooth Manifolds. Foundations of Computational Mathematics, 2009, 9, 51-77.	2.5	263
9	An Architecture for Compressive Imaging. , 2006, , .		194
10	The smashed filter for compressive classification and target recognition. , 2007, 6498, 142.		137
11	Low-Dimensional Models for Dimensionality Reduction and Signal Recovery: A Geometric Perspective. Proceedings of the IEEE, 2010, 98, 959-971.	21.3	123
12	Compressive Video Sensing: Algorithms, architectures, and applications. IEEE Signal Processing Magazine, 2017, 34, 52-66.	5.6	122
13	A Nonuniform Sampler for Wideband Spectrally-Sparse Environments. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2012, 2, 516-529.	3.6	108
14	Compressive sensing of analog signals using Discrete Prolate Spheroidal Sequences. Applied and Computational Harmonic Analysis, 2012, 33, 438-472.	2.2	97
15	Signal Space CoSaMP for Sparse Recovery With Redundant Dictionaries. IEEE Transactions on Information Theory, 2013, 59, 6820-6829.	2.4	89
16	A Compressed Sensing Parameter Extraction Platform for Radar Pulse Signal Acquisition. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2012, 2, 626-638.	3.6	84
17	A multiscale framework for Compressive Sensing of video. , 2009, , .		81
18	Compressive Sensing-Based Topology Identification for Smart Grids. IEEE Transactions on Industrial Informatics, 2016, 12, 532-543.	11.3	78

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19	Matched Filtering From Limited Frequency Samples. IEEE Transactions on Information Theory, 2013, 59, 3475-3496.	2.4	72
20	Wavelet-domain compressive signal reconstruction using a Hidden Markov Tree model. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	69
21	Wavelet-domain approximation and compression of piecewise smooth images. IEEE Transactions on Image Processing, 2006, 15, 1071-1087.	9.8	64
22	Exact topology identification of large-scale interconnected dynamical systems from compressive observations. , 2011, , .		64
23	Global Optimality in Low-Rank Matrix Optimization. IEEE Transactions on Signal Processing, 2018, 66, 3614-3628.	5.3	62
24	Super-Resolution of Complex Exponentials From Modulations With Unknown Waveforms. IEEE Transactions on Information Theory, 2016, 62, 5809-5830.	2.4	57
25	Modal Analysis With Compressive Measurements. IEEE Transactions on Signal Processing, 2014, 62, 1655-1670.	5.3	49
26	Atomic Norm Minimization for Modal Analysis From Random and Compressed Samples. IEEE Transactions on Signal Processing, 2018, 66, 1817-1831.	5.3	45
27	SPARSE SIGNAL AND IMAGE RECOVERY FROM COMPRESSIVE SAMPLES. , 2007, , .		44
28	The restricted isometry property for random block diagonal matrices. Applied and Computational Harmonic Analysis, 2015, 38, 1-31.	2.2	42
29	Universal distributed sensing via random projections. , 2006, , .		41
30	Measurement Bounds for Sparse Signal Ensembles via Graphical Models. IEEE Transactions on Information Theory, 2013, 59, 4280-4289.	2.4	38
31	Concentration of Measure for Block Diagonal Matrices With Applications to Compressive Signal Processing. IEEE Transactions on Signal Processing, 2011, 59, 5859-5875.	5.3	35
32	Approximating Sampled Sinusoids and Multiband Signals Using Multiband Modulated DPSS Dictionaries. Journal of Fourier Analysis and Applications, 2017, 23, 1263-1310.	1.0	35
33	Weighted Matrix Completion and Recovery With Prior Subspace Information. IEEE Transactions on Information Theory, 2018, 64, 4044-4071.	2.4	34
34	Compressive System Identification of LTI and LTV ARX models. , 2011, , .		33
35	New analysis of manifold embeddings and signal recovery from compressive measurements. Applied and Computational Harmonic Analysis, 2015, 39, 67-109.	2.2	32
36	Representation and Compression of Multidimensional Piecewise Functions Using *Surflets*. IEEE Transactions on Information Theory, 2009, 55, 374-400.	2.4	26

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37	Automatic modulation recognition for spectrum sensing using nonuniform compressive samples. , 2012, , .		25
38	Smart-Grid Topology Identification Using Sparse Recovery. IEEE Transactions on Industry Applications, 2016, 52, 4375-4384.	4.9	25
39	<title>Multiscale geometric image processing</title>. , 2003, 5150, 1265.		24
40	The multiscale structure of non-differentiable image manifolds. , 2005, 5914, 413.		24
41	The fast Slepian transform. Applied and Computational Harmonic Analysis, 2019, 46, 624-652.	2.2	24
42	TOWARD RECONSTRUCTION OF CORONAL MASS EJECTION DENSITY FROM ONLY THREE POINTS OF VIEW. Astrophysical Journal, 2009, 695, 636-641.	4.5	23
43	On the observability of linear systems from random, compressive measurements. , 2010, , .		23
44	Learning Low-Dimensional Signal Models. IEEE Signal Processing Magazine, 2011, 28, 39-51.	5.6	22
45	The Restricted Isometry Property for block diagonal matrices. , 2011, , .		22
46	Compressive topology identification of interconnected dynamic systems via Clustered Orthogonal Matching Pursuit. , 2011, , .		22
47	Atomic Norm Denoising for Complex Exponentials With Unknown Waveform Modulations. IEEE Transactions on Information Theory, 2020, 66, 3893-3913.	2.4	22
48	Multiscale Random Projections for Compressive Classification. , 2007, , .		21
49	Stable Manifold Embeddings With Structured Random Matrices. IEEE Journal on Selected Topics in Signal Processing, 2013, 7, 720-730.	10.8	20
50	Compressive Temporal Higher Order Cyclostationary Statistics. IEEE Transactions on Signal Processing, 2015, 63, 2942-2956.	5.3	20
51	On the Asymptotic Equivalence of Circulant and Toeplitz Matrices. IEEE Transactions on Information Theory, 2017, , 1-1.	2.4	20
52	A random demodulation architecture for sub-sampling acoustic emission signals in structural health monitoring. Journal of Sound and Vibration, 2018, 431, 390-404.	3.9	19
53	A geometric approach to multi-view compressive imaging. Eurasip Journal on Advances in Signal Processing, 2012, 2012, .	1.7	18
54	A manifold lifting algorithm for multi-view compressive imaging. , 2009, , .		17

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55	A geometric hidden Markov tree wavelet model. , 2003, 5207, 80.		16
56	The Global Optimization Geometry of Low-Rank Matrix Optimization. IEEE Transactions on Information Theory, 2021, 67, 1308-1331.	2.4	15
57	Concentration of measure inequalities for compressive toeplitz matrices with applications to detection and system identification. , 2010, , .		14
58	Wall clutter mitigation and target detection using Discrete Prolate Spheroidal Sequences. , 2015, , .		14
59	On the dimensionality of wall and target return subspaces in through-the-wall radar imaging. , 2016, , .		13
60	Radar signal demixing via convex optimization. , 2017, , .		13
61	The Eigenvalue Distribution of Discrete Periodic Time-Frequency Limiting Operators. IEEE Signal Processing Letters, 2018, 25, 95-99.	3.6	13
62	Multiscale algorithm for reconstructing videos from streaming compressive measurements. Journal of Electronic Imaging, 2013, 22, 021001.	0.9	12
63	Simultaneous Sparse Recovery and Blind Demodulation. IEEE Transactions on Signal Processing, 2019, 67, 5184-5199.	5.3	12
64	Recovering a Clipped Signal in Sparseland. Sampling Theory in Signal and Information Processing, 2013, 12, 55-69.	0.2	12
65	Geometric methods for wavelet-based image compression. , 2003, , .		11
66	Lossy Compression for Wireless Seismic Data Acquisition. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2016, 9, 236-252.	4.9	11
67	Stabilizing embedology: Geometry-preserving delay-coordinate maps. Physical Review E, 2018, 97, 022222.	2.1	11
68	Super-resolution in SAR imaging: Analysis with the atomic norm. , 2016, , .		10
69	Concentration of measure for block diagonal measurement matrices. , 2010, , .		9
70	Concentration of Measure Inequalities for Toeplitz Matrices With Applications. IEEE Transactions on Signal Processing, 2013, 61, 109-117.	5.3	9
71	Observability With Random Observations. IEEE Transactions on Automatic Control, 2014, 59, 3002-3007.	5.7	9
72	A tutorial on recovery conditions for compressive system identification of sparse channels. , 2012, , .		8

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73	Sparse Recovery and Non-stationary Blind Demodulation. , 2019, , .		8
74	The Global Optimization Geometry of Shallow Linear Neural Networks. Journal of Mathematical Imaging and Vision, 2020, 62, 279-292.	1.3	8
75	The Global Geometry of Centralized and Distributed Low-rank Matrix Recovery Without Regularization. IEEE Signal Processing Letters, 2020, 27, 1400-1404.	3.6	8
76	A Review of Sufficient Conditions for Structure Identification in Interconnected Systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 1623-1628.	0.4	7
77	Global optimality in low-rank matrix optimization. , 2017, , .		7
78	Adaptive Interference Cancellation Using Atomic Norm Minimization and Denoising. IEEE Antennas and Wireless Propagation Letters, 2020, 19, 2349-2353.	4.0	7
79	Computing active subspaces efficiently with gradient sketching. , 2015, , .		6
80	Fast computations for approximation and compression in Slepian spaces. , 2016, , .		6
81	Support Recovery for Sparse Signals With Unknown Non-Stationary Modulation. IEEE Transactions on Signal Processing, 2020, 68, 1884-1896.	5.3	6
82	MC2: a two-phase algorithm for leveraged matrix completion. Information and Inference, 2018, 7, 581-604.	1.6	5
83	Missing trace reconstruction for 2D land seismic data with randomized sparse sampling. Geophysics, 2021, 86, P25-P36.	2.6	5
84	CHOCS: a framework for estimating compressive higher order cyclostationary statistics. Proceedings of SPIE, 2012, , .	0.8	4
85	Recovery of Periodic Clustered Sparse signals from compressive measurements. , 2014, , .		4
86	Smart grid topology identification using sparse recovery. , 2015, , .		4
87	What Happens to a Manifold Under a Bi-Lipschitz Map?. Discrete and Computational Geometry, 2017, 57, 641-673.	0.6	4
88	Jazz: A companion to music for frequency estimation with missing data. , 2017, , .		4
89	The Geometry of Equality-constrained Global Consensus Problems. , 2019, , .		4
90	Concentration of measure for block diagonal matrices with repeated blocks. , 2010, , .		3

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91	Stable manifold embeddings with operators satisfying the Restricted Isometry Property. , 2011, , .		3
92	Greed is super: A new iterative method for super-resolution. , 2013, , .		3
93	A Comparison of On-Mote Lossy Compression Algorithms for Wireless Seismic Data Acquisition. , 2014, , .		3
94	Joint elastic side-scattering LIDAR and Raman LIDAR measurements of aerosol optical properties in south east Colorado. Journal of Instrumentation, 2017, 12, P03008-P03008.	1.2	3
95	Atomic norm minimization for modal analysis with random spatial compression. , 2017, , .		3
96	ROAST: Rapid Orthogonal Approximate Slepian Transform. IEEE Transactions on Signal Processing, 2018, 66, 5887-5901.	5.3	3
97	Simultaneous Blind Deconvolution and Phase Retrieval with Tensor Iterative Hard Thresholding. , 2019, , .		3
98	Support Recovery for Sparse Recovery and Non-stationary Blind Demodulation. , 2019, , .		3
99	Recovery analysis of damped spectrally sparse signals and its relation to MUSIC. Information and Inference, 2020, , .	1.6	3
100	Gridless DOA Estimation Under the Multi-Frequency Model. , 2022, , .		3
101	CoSaMP with redundant dictionaries. , 2012, , .		2
102	Sampling considerations for modal analysis with damping. Proceedings of SPIE, 2015, , .	0.8	2
103	What to Expect When You Are Expecting on the Grassmannian. IEEE Signal Processing Letters, 2017, 24, 872-876.	3.6	2
104	A super-resolution algorithm for multiband signal identification. , 2017, , .		2
105	Randomized learning of the second-moment matrix of a smooth function. , 2019, 1, 329-387.		2
106	A first analysis of the stability of Takens' embedding. , 2014, , .		1
107	Non-stationary blind super-resolution. , 2016, , .		1
108	Fast orthogonal approximations of sampled sinusoids and bandlimited signals. , 2017, , .		1

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109	The Geometric Effects of Distributing Constrained Nonconvex Optimization Problems. , 2019, , .		1
110	Data-driven Parameter Estimation Of Contaminated Damped Exponentials. , 2021, , .		1
111	Online search Orthogonal Matching Pursuit. , 2012, , .		0
112	Modeling and recovering non-transitive pairwise comparison matrices. , 2015, , .		0
113	Atomic norm minimization for modal analysis. , 2016, , .		0
114	Super-Resolution of complex exponentials from modulations with known waveforms. , 2017, , .		0
115	A Super-Resolution Algorithm for Extended Target Localization. , 2019, , .		0
116	The Local Geometry of Orthogonal Dictionary Learning using L1 Minimization. , 2019, , .		0
117	Adaptive Interference Cancellation Using Atomic Norm Minimization. , 2020, , .		0
118	Nuclear Norm Based Spectrum Estimation for Molecular Dynamic Simulations. , 2020, , .		0
119	Data-driven Support Recovery for Sparse Signals with Non-stationary Modulation. , 2021, , .		0
120	Landscape Correspondence of Empirical and Population Risks in the Eigendecomposition Problem. IEEE Transactions on Signal Processing, 2022, 70, 2985-2999.	5.3	0