

# Babak Hassibi

## List of Publications by Year in descending order

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131  
papers

5,629  
citations

257357

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131  
all docs

131  
docs citations

131  
times ranked

3980  
citing authors

#	ARTICLE	IF	CITATIONS
1	Distributed Space-Time Coding in Wireless Relay Networks. IEEE Transactions on Wireless Communications, 2006, 5, 3524-3536.	6.1	804
2	The Secrecy Capacity of the MIMO Wiretap Channel. IEEE Transactions on Information Theory, 2011, 57, 4961-4972.	1.5	800
3	On a stochastic sensor selection algorithm with applications in sensor scheduling and sensor coverage. Automatica, 2006, 42, 251-260.	3.0	414
4	On the Reconstruction of Block-Sparse Signals With an Optimal Number of Measurements. IEEE Transactions on Signal Processing, 2009, 57, 3075-3085.	3.2	305
5	Optimal LQG control across packet-dropping links. Systems and Control Letters, 2007, 56, 439-446.	1.3	253
6	A Comparison of Time-Sharing, DPC, and Beamforming for MIMO Broadcast Channels With Many Users. IEEE Transactions on Communications, 2007, 55, 11-15.	4.9	233
7	The secrecy capacity of the MIMO wiretap channel. , 2008, , .		219
8	Simultaneously Structured Models With Application to Sparse and Low-Rank Matrices. IEEE Transactions on Information Theory, 2015, 61, 2886-2908.	1.5	154
9	Recovering Sparse Signals Using Sparse Measurement Matrices in Compressed DNA Microarrays. IEEE Journal on Selected Topics in Signal Processing, 2008, 2, 275-285.	7.3	148
10	Efficient and Robust Compressed Sensing Using Optimized Expander Graphs. IEEE Transactions on Information Theory, 2009, 55, 4299-4308.	1.5	131
11	Efficient Compressive Sensing with Deterministic Guarantees Using Expander Graphs. , 2007, , .		118
12	Equivalent Relaxations of Optimal Power Flow. IEEE Transactions on Automatic Control, 2015, 60, 729-742.	3.6	103
13	Analyzing Weighted $\ell_1$ Minimization for Sparse Recovery With Nonuniform Sparse Models. IEEE Transactions on Signal Processing, 2011, 59, 1985-2001.	3.2	85
14	Necessary and sufficient conditions for success of the nuclear norm heuristic for rank minimization. , 2008, , .		84
15	STFT Phase Retrieval: Uniqueness Guarantees and Recovery Algorithms. IEEE Journal on Selected Topics in Signal Processing, 2016, 10, 770-781.	7.3	72
16	Recovery of sparse 1-D signals from the magnitudes of their Fourier transform. , 2012, , .		70
17	Sparse phase retrieval: Convex algorithms and limitations. , 2013, , .		70
18	Statistical Pruning for Near-Maximum Likelihood Decoding. IEEE Transactions on Signal Processing, 2007, 55, 2661-2675.	3.2	69

#	ARTICLE	IF	CITATIONS
19	Optimal Placement of Distributed Energy Storage in Power Networks. IEEE Transactions on Automatic Control, 2016, 61, 416-429.	3.6	64
20	Multiplexed identification, quantification and genotyping of infectious agents using a semiconductor biochip. Nature Biotechnology, 2018, 36, 738-745.	9.4	59
21	Divide-and-Conquer: Approaching the Capacity of the Two-Pair Bidirectional Gaussian Relay Network. IEEE Transactions on Information Theory, 2012, 58, 2434-2454.	1.5	57
22	On the Distribution of Indefinite Quadratic Forms in Gaussian Random Variables. IEEE Transactions on Communications, 2016, 64, 153-165.	4.9	57
23	On the expected complexity of integer least-squares problems. , 2002, , .		53
24	On the distribution of indefinite quadratic forms in Gaussian random variables. , 2009, , .		52
25	Diversity Analysis of Distributed Space-Time Codes in Relay Networks with Multiple Transmit/Receive Antennas. Eurasip Journal on Advances in Signal Processing, 2007, 2008, .	1.0	51
26	Near-Optimal Detection in MIMO Systems Using Gibbs Sampling. , 2009, , .		50
27	Compressed sensing over the Grassmann manifold: A unified analytical framework. , 2008, , .		47
28	On the capacity of a communication system with energy harvesting and a limited battery. , 2013, , .		42
29	An Algebraic Family of Distributed Space-Time Codes for Wireless Relay Networks. , 2006, , .		39
30	Sharp MSE Bounds for Proximal Denoising. Foundations of Computational Mathematics, 2016, 16, 965-1029.	1.5	39
31	Optimized Markov Chain Monte Carlo for Signal Detection in MIMO Systems: An Analysis of the Stationary Distribution and Mixing Time. IEEE Transactions on Signal Processing, 2014, 62, 4436-4450.	3.2	35
32	The Kalman-Like Particle Filter: Optimal Estimation With Quantized Innovations/Measurements. IEEE Transactions on Signal Processing, 2013, 61, 131-136.	3.2	34
33	Delay Considerations for Opportunistic Scheduling in Broadcast Fading Channels. IEEE Transactions on Wireless Communications, 2007, 6, 3353-3363.	6.1	26
34	Algebraic Cayley Differential Space-Time Codes. IEEE Transactions on Information Theory, 2007, 53, 1911-1919.	1.5	26
35	Normalized Entropy Vectors, Network Information Theory and Convex Optimization. , 2007, , .		25
36	Speeding up the Sphere Decoder With $H^{\infty}$ and SDP Inspired Lower Bounds. IEEE Transactions on Signal Processing, 2008, 56, 712-726.	3.2	25

#	ARTICLE	IF	CITATIONS
37	Performance of sphere decoding of block codes. IEEE Transactions on Communications, 2009, 57, 2940-2950.	4.9	25
38	Precise Stability Phase Transitions for $\ell_1$ Minimization: A Unified Geometric Framework. IEEE Transactions on Information Theory, 2011, 57, 6894-6919.	1.5	25
39	Phase retrieval with masks using convex optimization. , 2015, , .		24
40	An Algebraic Coding Scheme for Wireless Relay Networks With Multiple-Antenna Nodes. IEEE Transactions on Signal Processing, 2008, 56, 2957-2966.	3.2	21
41	Wireless erasure networks with feedback. , 2008, , .		20
42	Peak power reduction of OFDM signals with sign adjustment. IEEE Transactions on Communications, 2009, 57, 2160-2166.	4.9	20
43	Explicit measurements with almost optimal thresholds for compressed sensing. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	19
44	Distributed Solution of Large-Scale Linear Systems via Accelerated Projection-Based Consensus. IEEE Transactions on Signal Processing, 2019, 67, 3806-3817.	3.2	19
45	Reduced feedback and random beamforming for OFDM MIMO broadcast channels. IEEE Transactions on Communications, 2009, 57, 3827-3835.	4.9	18
46	Low-Complexity Blind Equalization for OFDM Systems With General Constellations. IEEE Transactions on Signal Processing, 2012, 60, 6395-6407.	3.2	18
47	Balanced Reed-Solomon codes. , 2016, , .		17
48	Linear Time-Invariant Anytime Codes for Control Over Noisy Channels. IEEE Transactions on Automatic Control, 2016, 61, 3826-3841.	3.6	17
49	Compressed sensing of approximately sparse signals. , 2008, , .		16
50	Training Signal Design for Correlated Massive MIMO Channel Estimation. IEEE Transactions on Wireless Communications, 2017, 16, 1135-1143.	6.1	16
51	Explicit matrices for sparse approximation. , 2011, , .		15
52	Balanced Reed-Solomon codes for all parameters. , 2016, , .		15
53	Global dynamics of epidemic spread over complex networks. , 2013, , .		13
54	Capacity Analysis of Discrete Energy Harvesting Channels. IEEE Transactions on Information Theory, 2017, , 1-1.	1.5	13

#	ARTICLE	IF	CITATIONS
55	On the Capacity Region of Multi-Antenna Gaussian Broadcast Channels with Estimation Error. , 2006, ,		12
56	How Much Does Transmit Correlation Affect the Sum-Rate of MIMO Downlink Channels?. , 2006, ,		12
57	Diversity-Multiplexing Gain Trade-off of a MIMO System with Relays. , 2007, , ,		12
58	On sharp performance bounds for robust sparse signal recoveries. , 2009, , ,		12
59	A Practical Scheme for Wireless Network Operation. IEEE Transactions on Communications, 2007, 55, 463-476.	4.9	11
60	Cyclic Distributed Space-Time Codes for Wireless Relay Networks With No Channel Information. IEEE Transactions on Information Theory, 2010, 56, 250-265.	1.5	11
61	On robust phase retrieval for sparse signals. , 2012, , ,		11
62	A Perspective on the MIMO Wiretap Channel. Proceedings of the IEEE, 2015, 103, 1874-1882.	16.4	11
63	Low-Coherence Frames From Group Fourier Matrices. IEEE Transactions on Information Theory, 2017, 63, 3386-3404.	1.5	11
64	Particle filtering for Quantized Innovations. , 2009, , ,		10
65	Anytime reliable codes for stabilizing plants over erasure channels. , 2011, , ,		10
66	A Silicon Photonics Computational Lensless Active-Flat-Optics Imaging System. Scientific Reports, 2020, 10, 1689.	1.6	10
67	Violating the Ingleton inequality with finite groups. , 2009, , ,		9
68	Distance-Dependent Kronecker Graphs for Modeling Social Networks. IEEE Journal on Selected Topics in Signal Processing, 2010, 4, 718-731.	7.3	9
69	Isotropically random orthogonal matrices: Performance of LASSO and minimum conic singular values. , 2015, , ,		9
70	Group Frames With Few Distinct Inner Products and Low Coherence. IEEE Transactions on Signal Processing, 2015, 63, 5222-5237.	3.2	9
71	A Precise Analysis of PhaseMax in Phase Retrieval. , 2018, , ,		9
72	On the Robustness of LMS Filters. , 2005, , 105-144.		8

#	ARTICLE	IF	CITATIONS
73	The MIMO wiretap channel. , 2008, , .		8
74	ON exact maximum-likelihood detection for non-coherent MIMO wireless systems: A branch-estimate-bound optimization framework. , 2008, , .		8
75	Reconstruction of integers from pairwise distances. , 2013, , .		8
76	Recovering signals from the Short-Time Fourier Transform magnitude. , 2015, , .		8
77	Similarity clustering in the presence of outliers: Exact recovery via convex program. , 2016, , .		8
78	A Coding Scheme for Wireless Networks with Multiple Antenna Nodes and No Channel Information. , 2007, , .		7
79	A Stieltjes transform approach for analyzing the RLS adaptive Filter. , 2008, , .		7
80	A Stieltjes transform approach for studying the steady-state behavior of random Lyapunov and Riccati recursions. , 2008, , .		7
81	A numerical implementation of gridless compressed sensing. , 2015, , .		7
82	Coding with constraints: Minimum distance bounds and systematic constructions. , 2015, , .		7
83	Performance Analysis of Convex Data Detection in MIMO. , 2019, , .		7
84	On a relation between the minimax risk and the phase transitions of compressed recovery. , 2012, , .		6
85	Capacity bounds for certain channels with states and the energy harvesting channel. , 2014, , .		6
86	General performance metrics for the LASSO. , 2016, , .		6
87	Differentiated Rate Scheduling for MIMO Broadcast Channels with Estimation Errors. , 2006, , .		5
88	Low-complexity blind maximum-likelihood detection for SIMO systems with general constellations. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	5
89	The entropy region for three Gaussian random variables. , 2008, , .		5
90	Multi-rate control over AWGN channels via analog joint source-channel coding. , 2016, , .		5

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91	Short-message communication and FIR system identification using Huffman sequences. , 2017, , .		5
92	A Riemannian Approach for Graph-Based Clustering by Doubly Stochastic Matrices. , 2018, , .		5
93	Reconstruction of Signals From Their Autocorrelation and Cross-Correlation Vectors, With Applications to Phase Retrieval and Blind Channel Estimation. IEEE Transactions on Signal Processing, 2019, 67, 2937-2946.	3.2	5
94	Sparse and Balanced Reed-Solomon and Tamo Barg Codes. IEEE Transactions on Information Theory, 2019, 65, 118-130.	1.5	5
95	Recovering Structured Signals in Noise: Least-Squares Meets Compressed Sensing. Applied and Numerical Harmonic Analysis, 2015, , 97-141.	0.1	5
96	On group network codes:ingleton-bound violations and independent sources. , 2010, , .		4
97	Frames, group codes, and subgroups of $(\mathbb{Z}/p\mathbb{Z})^n$ . , 2012, , .		4
98	Recovery threshold for optimal weight $\ell_1$ minimization. , 2012, , .		4
99	Ambiguities on convolutions with applications to phase retrieval. , 2016, , .		4
100	Phaseless super-resolution using masks. , 2016, , .		4
101	Manifold Optimization for High-Accuracy Spatial Location Estimation Using Ultrasound Waves. IEEE Transactions on Signal Processing, 2021, 69, 5078-5093.	3.2	4
102	Cayley's hyperdeterminant, the principal minors of a symmetric matrix and the entropy region of 4 Gaussian random variables. , 2008, , .		3
103	New capacity upper bounds and coding aspects for some channels with causal CSIT. , 2015, , .		3
104	Multiple illumination phaseless super-resolution (MIPS) with applications to phaseless DoA estimation and diffraction imaging. , 2017, , .		3
105	Unitary space-time codes and the Cayley transform. , 2002, , .		2
106	On the Performance of Sphere Decoding of Block Codes. , 2006, , .		2
107	On frames from abelian group codes. , 2013, , .		2
108	Constrained blind deconvolution using Wirtinger flow methods. , 2017, , .		2

#	ARTICLE	IF	CITATIONS
109	Support Constrained Generator Matrices of Gabidulin Codes in Characteristic Zero. , 2020, , .		2
110	Rate-Diversity Trade-offs in Interference Channels with and without Cooperation. , 2006, , .		1
111	On the Capacity Scalings of the Multiple Antenna Group-Broadcast Systems. , 2007, , .		1
112	On the entropy region of discrete and continuous random variables and network information theory. , 2008, , .		1
113	On the eigendistribution of the steady-state error covariance matrix for the extended RLS algorithm. , 2009, , .		1
114	Limits of performance of real-time DNA microarrays. , 2009, , .		1
115	A symmetric adaptive algorithm for speeding-up consensus. , 2010, , .		1
116	MCMC methods for integer least-squares problems. , 2010, , .		1
117	Precise high-dimensional error analysis of regularized M-estimators. , 2015, , .		1
118	An Improved Initialization for Low-Rank Matrix Completion Based on Rank-L Updates. , 2018, , .		1
119	A Stochastic Interpretation of Stochastic Mirror Descent: Risk-Sensitive Optimality. , 2019, , .		1
120	Sparse Covariance Estimation from Quadratic Measurements: A Precise Analysis. , 2019, , .		1
121	Multi-antenna Cayley differential codes. , 2002, , .		0
122	Unambiguous discrimination between two rank-2 mixed quantum states. , 2007, , .		0
123	PEP analysis of SDP-based non-coherent signal detection. , 2007, , .		0
124	High Diversity Scheme for Wireless Networks based on Interference Cancellation. , 2007, , .		0
125	Scaling Laws of Multiple Antenna Group-Broadcast Channels. , 2007, , .		0
126	On the recovery of nonnegative sparse vectors from sparse measurements inspired by expanders. , 2009, , .		0



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127	Deterministic phase guarantees for robust recovery in incoherent dictionaries. , 2012, , .		0
128	An analog sub-linear time sparse signal acquisition framework based on structured matrices. , 2012, , .		0
129	Projected $\ell_1$ -minimization for compressed sensing. , 2012, , .		0
130	Frames from generalized group fourier transforms and $SL_2(F_q)$ . , 2014, , .		0
131	Gabidulin Codes with Support Constraints. , 2019, , .		0