

# Tsachy Weissman

## List of Publications by Year in descending order

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172  
papers

3,139  
citations

201674

27  
h-index

214800

47  
g-index

174  
all docs

174  
docs citations

174  
times ranked

1502  
citing authors

#	ARTICLE	IF	CITATIONS
1	OUP accepted manuscript. Nucleic Acids Research, 2022, , .	14.5	3
2	The Human Pangenome Project: a global resource to map genomic diversity. Nature, 2022, 604, 437-446.	27.8	192
3	AI-Generated Characters: Putting Deepfakes to Good Use. , 2022, , .		4
4	Geometric Lower Bounds for Distributed Parameter Estimation Under Communication Constraints. IEEE Transactions on Information Theory, 2021, 67, 8248-8263.	2.4	12
5	Impact of lossy compression of nanopore raw signal data on basecalling and consensus accuracy. Bioinformatics, 2021, 36, 5313-5321.	4.1	5
6	Concentration inequalities for the empirical distribution of discrete distributions: beyond the method of types. Information and Inference, 2020, 9, 813-850.	1.6	16
7	Minimax Estimation of Divergences Between Discrete Distributions. IEEE Journal on Selected Areas in Information Theory, 2020, 1, 814-823.	2.5	5
8	Optimal rates of entropy estimation over Lipschitz balls. Annals of Statistics, 2020, 48, .	2.6	21
9	Estimating the Fundamental Limits is Easier Than Achieving the Fundamental Limits. IEEE Transactions on Information Theory, 2019, 65, 6704-6715.	2.4	10
10	Genomic Data Compression. Annual Review of Biomedical Data Science, 2019, 2, 19-37.	6.5	38
11	Denoising of Aligned Genomic Data. Scientific Reports, 2019, 9, 15067.	3.3	7
12	SPRING: a next-generation compressor for FASTQ data. Bioinformatics, 2019, 35, 2674-2676.	4.1	49
13	Compression of genomic sequencing reads via hash-based reordering: algorithm and analysis. Bioinformatics, 2018, 34, 558-567.	4.1	36
14	Minimax Redundancy for Markov Chains with Large State Space. , 2018, , .		3
15	Distributed Statistical Estimation of High-Dimensional and Nonparametric Distributions. , 2018, , .		19
16	The quest to save genomics: Unless researchers solve the looming data compression problem, biomedical science could stagnate. IEEE Spectrum, 2018, 55, 27-31.	0.7	11
17	Mutual Information, Relative Entropy and Estimation Error in Semi-Martingale Channels. IEEE Transactions on Information Theory, 2018, 64, 6662-6671.	2.4	6
18	Minimax Estimation of the $\ L_{\{1\}}\ $ Distance. IEEE Transactions on Information Theory, 2018, 64, 6672-6706.	2.4	21

#	ARTICLE	IF	CITATIONS
19	Effect of lossy compression of quality scores on variant calling. Briefings in Bioinformatics, 2017, 18, bbw011.	6.5	50
20	Relations Between Information and Estimation in Discrete-Time L <sup>∞</sup> Channels. IEEE Transactions on Information Theory, 2017, 63, 3579-3594.	2.4	11
21	GeneComp, a New Reference-Based Compressor for SAM Files. , 2017, 2017, 330-339.		5
22	When is Noisy State Information at the Encoder as Useless as No Information or as Good as Noise-Free State?. IEEE Transactions on Information Theory, 2017, 63, 960-974.	2.4	4
23	Maximum Likelihood Estimation of Functionals of Discrete Distributions. IEEE Transactions on Information Theory, 2017, 63, 6774-6798.	2.4	68
24	Dependence measures bounding the exploration bias for general measurements. , 2017, , .		27
25	DUDE-Seq: Fast, flexible, and robust denoising for targeted amplicon sequencing. PLoS ONE, 2017, 12, e0181463.	2.5	47
26	smallWig: parallel compression of RNA-seq WIG files. Bioinformatics, 2016, 32, 173-180.	4.1	9
27	A Cluster-Based Approach to Compression of Quality Scores. , 2016, 2016, 261-270.		11
28	Denoising of Quality Scores for Boosted Inference and Reduced Storage. , 2016, 2016, 251-260.		2
29	Strong Successive Refinability and Rate-Distortion-Complexity Tradeoff. IEEE Transactions on Information Theory, 2016, 62, 3618-3635.	2.4	20
30	Information, Estimation, and Lookahead in the Gaussian Channel. IEEE Transactions on Signal Processing, 2016, 64, 3605-3618.	5.3	2
31	GTRAC: fast retrieval from compressed collections of genomic variants. Bioinformatics, 2016, 32, i479-i486.	4.1	13
32	Mutual information, relative entropy and estimation error in semi-martingale channels. , 2016, , .		2
33	Rateless Lossy Compression via the Extremes. IEEE Transactions on Information Theory, 2016, 62, 5484-5495.	2.4	10
34	Minimax estimation of the $L_1$ distance. , 2016, , .		10
35	Beyond maximum likelihood: Boosting the Chow-Liu algorithm for large alphabets. , 2016, , .		3
36	When is noisy state information at the encoder as useless as no information or as good as noise-free state?. , 2016, , .		1

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37	Secure Source Coding With a Public Helper. IEEE Transactions on Information Theory, 2016, 62, 3930-3949.	2.4	15
38	Comment on: "ERGC: an efficient referential genome compression algorithm". Bioinformatics, 2016, 32, 1115-1117.	4.1	3
39	Compression for Quadratic Similarity Queries: Finite Blocklength and Practical Schemes. IEEE Transactions on Information Theory, 2016, 62, 2737-2747.	2.4	4
40	Distortion Rate Function of Sub-Nyquist Sampled Gaussian Sources. IEEE Transactions on Information Theory, 2016, 62, 401-429.	2.4	47
41	Minimax Rate-optimal Estimation of KL Divergence between Discrete Distributions. , 2016, 2016, 256-260.		1
42	Minimax estimation of information measures. , 2015, , .		1
43	Adaptive estimation of Shannon entropy. , 2015, , .		14
44	Comparison of the Achievable Rates in OFDM and Single Carrier Modulation with I.I.D. Inputs. IEEE Transactions on Information Theory, 2015, 61, 1795-1818.	2.4	32
45	Minimax Estimation of Functionals of Discrete Distributions. IEEE Transactions on Information Theory, 2015, 61, 2835-2885.	2.4	121
46	Network Compression: Worst Case Analysis. IEEE Transactions on Information Theory, 2015, 61, 3980-3995.	2.4	3
47	Minimax estimation of discrete distributions. , 2015, , .		8
48	Does dirichlet prior smoothing solve the Shannon entropy estimation problem?. , 2015, , .		6
49	QVZ: lossy compression of quality values. Bioinformatics, 2015, 31, 3122-3129.	4.1	53
50	Compression for Quadratic Similarity Queries. IEEE Transactions on Information Theory, 2015, 61, 2729-2747.	2.4	11
51	Maximum Likelihood Estimation of information measures. , 2015, , .		4
52	Justification of Logarithmic Loss via the Benefit of Side Information. IEEE Transactions on Information Theory, 2015, 61, 5357-5365.	2.4	37
53	Minimax Estimation of Discrete Distributions Under $\ell_1$ Loss. IEEE Transactions on Information Theory, 2015, 61, 6343-6354.	2.4	21
54	iDoComp: a compression scheme for assembled genomes. Bioinformatics, 2015, 31, 626-633.	4.1	40

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55	Rateless lossy compression via the extremes. , 2014, , .		4
56	Compression for quadratic similarity queries via shape-gain quantizers. , 2014, , .		1
57	Information Measures: The Curious Case of the Binary Alphabet. IEEE Transactions on Information Theory, 2014, 60, 7616-7626.	2.4	25
58	Justification of logarithmic loss via the benefit of side information. , 2014, , .		6
59	Relations between information and estimation in scalar L&#x00E9;vy channels. , 2014, , .		4
60	Aligned genomic data compression via improved modeling. Journal of Bioinformatics and Computational Biology, 2014, 12, 1442002.	0.8	12
61	Compression With Actions. IEEE Transactions on Information Theory, 2014, 60, 796-807.	2.4	7
62	Multiterminal Source Coding Under Logarithmic Loss. IEEE Transactions on Information Theory, 2014, 60, 740-761.	2.4	114
63	The Porosity of Additive Noise Channels. IEEE Transactions on Information Theory, 2014, 60, 3144-3162.	2.4	1
64	Information divergences and the curious case of the binary alphabet. , 2014, , .		0
65	Compression Schemes for Similarity Queries. , 2014, , .		2
66	Minimax Filtering Regret via Relations Between Information and Estimation. IEEE Transactions on Information Theory, 2014, 60, 4832-4847.	2.4	0
67	To Feed or Not to Feedback. IEEE Transactions on Information Theory, 2014, 60, 5150-5172.	2.4	8
68	Capacity of a POST Channel With and Without Feedback. IEEE Transactions on Information Theory, 2014, 60, 6041-6057.	2.4	26
69	Relations Between Information and Estimation in the Presence of Feedback. Lecture Notes in Control and Information Sciences, 2014, , 157-175.	1.0	3
70	QualComp: a new lossy compressor for quality scores based on rate distortion theory. BMC Bioinformatics, 2013, 14, 187.	2.6	47
71	Universal Estimation of Directed Information. IEEE Transactions on Information Theory, 2013, 59, 6220-6242.	2.4	135
72	The human genome contracts again. Bioinformatics, 2013, 29, 2199-2202.	4.1	28

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73	Multiterminal Source Coding With Action-Dependent Side Information. IEEE Transactions on Information Theory, 2013, 59, 3653-3667.	2.4	8
74	Directed Information, Causal Estimation, and Communication in Continuous Time. IEEE Transactions on Information Theory, 2013, 59, 1271-1287.	2.4	27
75	Network compression: Worst-case analysis. , 2013, , .		6
76	Compression for exact match identification. , 2013, , .		0
77	Distortion rate function of sub-Nyquist sampled Gaussian sources corrupted by noise. , 2013, , .		4
78	Efficient similarity queries via lossy compression. , 2013, , .		1
79	Achievable Error Exponents in the Gaussian Channel With Rate-Limited Feedback. IEEE Transactions on Information Theory, 2013, 59, 8144-8156.	2.4	8
80	Estimation With a Helper Who Knows the Interference. IEEE Transactions on Information Theory, 2013, 59, 7097-7117.	2.4	7
81	Capacity of a POST channel with and without feedback. , 2013, , .		7
82	Successive Refinement With Decoder Cooperation and Its Channel Coding Duals. IEEE Transactions on Information Theory, 2013, 59, 5511-5533.	2.4	11
83	Quadratic Similarity Queries on Compressed Data. , 2013, , .		2
84	Complexity and rate-distortion tradeoff via successive refinement. , 2013, , .		1
85	The role of lookahead in estimation under Gaussian noise. , 2013, , .		0
86	Pointwise relations between information and estimation in the Poisson channel. , 2013, , .		4
87	Reliable uncoded communication in the underdetermined SIMO MAC with low-complexity decoding. , 2013, , .		1
88	Unsupervised learning and universal communication. , 2013, , .		7
89	Reliable uncoded communication in the SIMO MAC via low-complexity decoding. , 2013, , .		2
90	Minimax filtering regret via relations between information and estimation. , 2013, , .		4

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91	Secure source coding with a public helper. , 2013, 2013, 2209-2213.		10
92	The porosity of additive noise sequences. , 2012, , .		15
93	Pointwise relations between information and estimation in Gaussian noise. , 2012, , .		1
94	Uncoded transmission in MAC channels achieves arbitrarily small error probability. , 2012, , .		1
95	On information, estimation and lookahead. , 2012, , .		1
96	Multiterminal source coding under logarithmic loss. , 2012, , .		14
97	Block and Sliding-Block Lossy Compression via MCMC. IEEE Transactions on Communications, 2012, 60, 2187-2198.	7.8	13
98	The degraded broadcast channel with action-dependent states. , 2012, , .		12
99	Worst-case source for distributed compression with quadratic distortion. , 2012, , .		4
100	Pointwise Relations Between Information and Estimation in Gaussian Noise. IEEE Transactions on Information Theory, 2012, 58, 6264-6281.	2.4	15
101	Universal estimation of directed information via sequential probability assignments. , 2012, , .		3
102	An MCMC Approach to Universal Lossy Compression of Analog Sources. IEEE Transactions on Signal Processing, 2012, 60, 5230-5240.	5.3	4
103	Denoising via MCMC-Based Lossy Compression. IEEE Transactions on Signal Processing, 2012, 60, 3092-3100.	5.3	6
104	Cascade, Triangular, and Two-Way Source Coding With Degraded Side Information at the Second User. IEEE Transactions on Information Theory, 2012, 58, 189-206.	2.4	15
105	Mutual Information, Relative Entropy, and Estimation in the Poisson Channel. IEEE Transactions on Information Theory, 2012, 58, 1302-1318.	2.4	119
106	Lossy Compression of Discrete Sources via the Viterbi Algorithm. IEEE Transactions on Information Theory, 2012, 58, 2475-2489.	2.4	9
107	Cascade and Triangular Source Coding With Side Information at the First Two Nodes. IEEE Transactions on Information Theory, 2012, 58, 3339-3349.	2.4	11
108	On real time coding with limited lookahead. , 2011, , .		7

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109	To feed or not to feed back. , 2011, , .		7
110	Compression with actions. , 2011, , .		3
111	Error Exponents for the Gaussian Channel With Active Noisy Feedback. IEEE Transactions on Information Theory, 2011, 57, 1223-1236.	2.4	20
112	Interpretations of Directed Information in Portfolio Theory, Data Compression, and Hypothesis Testing. IEEE Transactions on Information Theory, 2011, 57, 3248-3259.	2.4	122
113	Source Coding With a Side Information "Vending Machine" IEEE Transactions on Information Theory, 2011, 57, 4530-4544.	2.4	47
114	Probing Capacity. IEEE Transactions on Information Theory, 2011, 57, 7317-7332.	2.4	35
115	Cascade and Triangular source coding with causal side information. , 2011, , .		4
116	Multi-terminal source coding with action dependent side information. , 2011, , .		9
117	Discrete denoising of heterogeneous two-dimensional data. , 2011, , .		1
118	A Universal Scheme for Wyner's Ziv Coding of Discrete Sources. IEEE Transactions on Information Theory, 2010, 56, 1737-1750.	2.4	8
119	Universal Reinforcement Learning. IEEE Transactions on Information Theory, 2010, 56, 2441-2454.	2.4	20
120	Two-Way Source Coding With a Helper. IEEE Transactions on Information Theory, 2010, 56, 2905-2919.	2.4	27
121	The Relationship Between Causal and Noncausal Mismatched Estimation in Continuous-Time AWGN Channels. IEEE Transactions on Information Theory, 2010, 56, 4256-4273.	2.4	38
122	Capacity of Channels With Action-Dependent States. IEEE Transactions on Information Theory, 2010, 56, 5396-5411.	2.4	78
123	Cascade, Triangular and two way source coding with degraded side information at the second user. , 2010, , .		4
124	To observe or not to observe the channel state. , 2010, , .		2
125	Universal lossless compression-based denoising. , 2010, , .		0
126	Tighter Bounds on the Capacity of Finite-State Channels Via Markov Set-Chains. IEEE Transactions on Information Theory, 2010, 56, 3660-3691.	2.4	6

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127	An MCMC Approach to Lossy Compression of Continuous Sources. , 2010, , .		8
128	Universal estimation of directed information. , 2010, , .		11
129	Error exponents for the Gaussian channel with noisy active feedback. , 2010, , .		2
130	Multiple description coding of discrete ergodic sources. , 2009, , .		3
131	An Implementable Scheme for Universal Lossy Compression of Discrete Markov Sources. , 2009, , .		4
132	Capacity of channels with action-dependent states. , 2009, , .		6
133	Finite State Channels With Time-Invariant Deterministic Feedback. IEEE Transactions on Information Theory, 2009, 55, 644-662.	2.4	118
134	Capacity Region of the Finite-State Multiple-Access Channel With and Without Feedback. IEEE Transactions on Information Theory, 2009, 55, 2455-2477.	2.4	39
135	Discrete Denoising With Shifts. IEEE Transactions on Information Theory, 2009, 55, 5284-5301.	2.4	11
136	Directed information, causal estimation, and communication in continuous time. , 2009, , .		3
137	Universal FIR MMSE Filtering. IEEE Transactions on Signal Processing, 2009, 57, 1068-1083.	5.3	17
138	An iterative scheme for near optimal and universal lossy compression. , 2009, , .		0
139	Directed information and causal estimation in continuous time. , 2009, , .		10
140	Source coding with a side information &#x2018;vending machine&#x2019; at the decoder. , 2009, , .		5
141	Problems we can solve with a helper. , 2009, , .		6
142	Universal Filtering Via Hidden Markov Modeling. IEEE Transactions on Information Theory, 2008, 54, 692-708.	2.4	5
143	Scanning and Sequential Decision Making for Multidimensional Data&#x2013;Part II: The Noisy Case. IEEE Transactions on Information Theory, 2008, 54, 5609-5631.	2.4	15
144	Universal Denoising of Discrete-Time Continuous-Amplitude Signals. IEEE Transactions on Information Theory, 2008, 54, 5632-5660.	2.4	9

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145	Capacity of the Trapdoor Channel With Feedback. IEEE Transactions on Information Theory, 2008, 54, 3150-3165.	2.4	101
146	How to Filter an $\epsilon$ -Individual Sequence With Feedback. IEEE Transactions on Information Theory, 2008, 54, 3831-3841.	2.4	2
147	Coding for Additive White Noise Channels With Feedback Corrupted by Quantization or Bounded Noise. IEEE Transactions on Information Theory, 2008, 54, 4274-4282.	2.4	26
148	The Information Lost in Erasures. IEEE Transactions on Information Theory, 2008, 54, 5030-5058.	2.4	52
149	Lossy Source Coding via Markov Chain Monte Carlo. , 2008, , .		2
150	Near optimal lossy source coding and compression-based denoising via Markov chain Monte Carlo. , 2008, , .		1
151	Rate-distortion in near-linear time. , 2008, , .		28
152	Rate-distortion via Markov chain Monte Carlo. , 2008, , .		19
153	A Context Quantization Approach to Universal Denoising. , 2007, , .		2
154	Capacity and Zero-Error Capacity of the Chemical Channel with Feedback. , 2007, , .		8
155	New Bounds on the Rate-Distortion Function of a Binary Markov Source. , 2007, , .		12
156	Scanning, Filtering and Prediction for Random Fields Corrupted by Gaussian Noise. , 2007, , .		0
157	The Gaussian Channel with Noisy Feedback. , 2007, , .		47
158	Scanning and Sequential Decision Making for Multidimensional Data. , 2007, , .		0
159	A Universal Wyner-Ziv Scheme for Discrete Sources. , 2007, , .		5
160	Competitive On-line Linear FIR MMSE Filtering. , 2007, , .		5
161	Universal Filtering Via Prediction. IEEE Transactions on Information Theory, 2007, 53, 1253-1264.	2.4	17
162	Scanning and Sequential Decision Making for Multidimensional Data—Part I: The Noiseless Case. IEEE Transactions on Information Theory, 2007, 53, 3001-3020.	2.4	11

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163	Bounds on the Error Exponent of the AWGN Channel with AWGN-Corrupted Feedback. , 2006, , .		9
164	Universal Scanning and Sequential Decision Making for Multidimensional Data. , 2006, , .		3
165	Universal Scanning of Mixing Random Fields and the Performance of the Peano-Hilbert Scan. , 2006, , .		0
166	Erasure Entropy. , 2006, , .		12
167	Universal Zero-Delay Joint Source-Channel Coding. IEEE Transactions on Information Theory, 2006, 52, 5240-5250.	2.4	26
168	Source Coding With Limited-Look-Ahead Side Information at the Decoder. IEEE Transactions on Information Theory, 2006, 52, 5218-5239.	2.4	54
169	Universal Denoising of Discrete-time Continuous-Amplitude Signals. , 2006, , .		5
170	Capacity of Finite-State Channels with Time-Invariant Deterministic Feedback. , 2006, , .		12
171	Discrete denoising for channels with memory. Communications in Information and Systems, 2005, 5, 257-288.	0.5	6
172	Universal prediction of random binary sequences in a noisy environment. Annals of Applied Probability, 2004, 14, .	1.3	12