

# Tsachy Weissman

## List of Publications by Year in descending order

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Version: 2024-02-01

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	The Human Pangenome Project: a global resource to map genomic diversity. Nature, 2022, 604, 437-446.	27.8	192
2	Universal Estimation of Directed Information. IEEE Transactions on Information Theory, 2013, 59, 6220-6242.	2.4	135
3	Interpretations of Directed Information in Portfolio Theory, Data Compression, and Hypothesis Testing. IEEE Transactions on Information Theory, 2011, 57, 3248-3259.	2.4	122
4	Minimax Estimation of Functionals of Discrete Distributions. IEEE Transactions on Information Theory, 2015, 61, 2835-2885.	2.4	121
5	Mutual Information, Relative Entropy, and Estimation in the Poisson Channel. IEEE Transactions on Information Theory, 2012, 58, 1302-1318.	2.4	119
6	Finite State Channels With Time-Invariant Deterministic Feedback. IEEE Transactions on Information Theory, 2009, 55, 644-662.	2.4	118
7	Multiterminal Source Coding Under Logarithmic Loss. IEEE Transactions on Information Theory, 2014, 60, 740-761.	2.4	114
8	Capacity of the Trapdoor Channel With Feedback. IEEE Transactions on Information Theory, 2008, 54, 3150-3165.	2.4	101
9	Capacity of Channels With Action-Dependent States. IEEE Transactions on Information Theory, 2010, 56, 5396-5411.	2.4	78
10	Maximum Likelihood Estimation of Functionals of Discrete Distributions. IEEE Transactions on Information Theory, 2017, 63, 6774-6798.	2.4	68
11	Source Coding With Limited-Look-Ahead Side Information at the Decoder. IEEE Transactions on Information Theory, 2006, 52, 5218-5239.	2.4	54
12	QVZ: lossy compression of quality values. Bioinformatics, 2015, 31, 3122-3129.	4.1	53
13	The Information Lost in Erasures. IEEE Transactions on Information Theory, 2008, 54, 5030-5058.	2.4	52
14	Effect of lossy compression of quality scores on variant calling. Briefings in Bioinformatics, 2017, 18, bbw011.	6.5	50
15	SPRING: a next-generation compressor for FASTQ data. Bioinformatics, 2019, 35, 2674-2676.	4.1	49
16	The Gaussian Channel with Noisy Feedback. , 2007, , .		47
17	Source Coding With a Side Information $\hat{\epsilon}$ Vending Machine $\hat{\epsilon}$ . IEEE Transactions on Information Theory, 2011, 57, 4530-4544.	2.4	47
18	QualComp: a new lossy compressor for quality scores based on rate distortion theory. BMC Bioinformatics, 2013, 14, 187.	2.6	47

#	ARTICLE	IF	CITATIONS
19	Distortion Rate Function of Sub-Nyquist Sampled Gaussian Sources. IEEE Transactions on Information Theory, 2016, 62, 401-429.	2.4	47
20	DUDE-Seq: Fast, flexible, and robust denoising for targeted amplicon sequencing. PLoS ONE, 2017, 12, e0181463.	2.5	47
21	iDoComp: a compression scheme for assembled genomes. Bioinformatics, 2015, 31, 626-633.	4.1	40
22	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
23	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
24	Genomic Data Compression. Annual Review of Biomedical Data Science, 2019, 2, 19-37.	6.5	38
25	Justification of Logarithmic Loss via the Benefit of Side Information. IEEE Transactions on Information Theory, 2015, 61, 5357-5365.	2.4	37
26	Compression of genomic sequencing reads via hash-based reordering: algorithm and analysis. Bioinformatics, 2018, 34, 558-567.	4.1	36
27	Probing Capacity. IEEE Transactions on Information Theory, 2011, 57, 7317-7332.	2.4	35
28	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
29	Rate-distortion in near-linear time. , 2008, , .		28
30	The human genome contracts again. Bioinformatics, 2013, 29, 2199-2202.	4.1	28
31	Two-Way Source Coding With a Helper. IEEE Transactions on Information Theory, 2010, 56, 2905-2919.	2.4	27
32	Directed Information, Causal Estimation, and Communication in Continuous Time. IEEE Transactions on Information Theory, 2013, 59, 1271-1287.	2.4	27
33	Dependence measures bounding the exploration bias for general measurements. , 2017, , .		27
34	Universal Zero-Delay Joint Source-Channel Coding. IEEE Transactions on Information Theory, 2006, 52, 5240-5250.	2.4	26
35	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
36	Capacity of a POST Channel With and Without Feedback. IEEE Transactions on Information Theory, 2014, 60, 6041-6057.	2.4	26

#	ARTICLE	IF	CITATIONS
37	Information Measures: The Curious Case of the Binary Alphabet. IEEE Transactions on Information Theory, 2014, 60, 7616-7626.	2.4	25
38	Minimax Estimation of Discrete Distributions Under $\ell_1$ Loss. IEEE Transactions on Information Theory, 2015, 61, 6343-6354.	2.4	21
39	Minimax Estimation of the $\ell_1$ Distance. IEEE Transactions on Information Theory, 2018, 64, 6672-6706.	2.4	21
40	Optimal rates of entropy estimation over Lipschitz balls. Annals of Statistics, 2020, 48, .	2.6	21
41	Universal Reinforcement Learning. IEEE Transactions on Information Theory, 2010, 56, 2441-2454.	2.4	20
42	Error Exponents for the Gaussian Channel With Active Noisy Feedback. IEEE Transactions on Information Theory, 2011, 57, 1223-1236.	2.4	20
43	Strong Successive Refinability and Rate-Distortion-Complexity Tradeoff. IEEE Transactions on Information Theory, 2016, 62, 3618-3635.	2.4	20
44	Rate-distortion via Markov chain Monte Carlo. , 2008, , .		19
45	Distributed Statistical Estimation of High-Dimensional and Nonparametric Distributions. , 2018, , .		19
46	Universal Filtering Via Prediction. IEEE Transactions on Information Theory, 2007, 53, 1253-1264.	2.4	17
47	Universal FIR MMSE Filtering. IEEE Transactions on Signal Processing, 2009, 57, 1068-1083.	5.3	17
48	Concentration inequalities for the empirical distribution of discrete distributions: beyond the method of types. Information and Inference, 2020, 9, 813-850.	1.6	16
49	Scanning and Sequential Decision Making for Multidimensional Data—Part II: The Noisy Case. IEEE Transactions on Information Theory, 2008, 54, 5609-5631.	2.4	15
50	The porosity of additive noise sequences. , 2012, , .		15
51	Pointwise Relations Between Information and Estimation in Gaussian Noise. IEEE Transactions on Information Theory, 2012, 58, 6264-6281.	2.4	15
52	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
53	Secure Source Coding With a Public Helper. IEEE Transactions on Information Theory, 2016, 62, 3930-3949.	2.4	15
54	Multiterminal source coding under logarithmic loss. , 2012, , .		14

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55	Adaptive estimation of Shannon entropy. , 2015, , .		14
56	Block and Sliding-Block Lossy Compression via MCMC. IEEE Transactions on Communications, 2012, 60, 2187-2198.	7.8	13
57	GTRAC: fast retrieval from compressed collections of genomic variants. Bioinformatics, 2016, 32, i479-i486.	4.1	13
58	Erasure Entropy. , 2006, , .		12
59	Capacity of Finite-State Channels with Time-Invariant Deterministic Feedback. , 2006, , .		12
60	New Bounds on the Rate-Distortion Function of a Binary Markov Source. , 2007, , .		12
61	The degraded broadcast channel with action-dependent states. , 2012, , .		12
62	Aligned genomic data compression via improved modeling. Journal of Bioinformatics and Computational Biology, 2014, 12, 1442002.	0.8	12
63	Geometric Lower Bounds for Distributed Parameter Estimation Under Communication Constraints. IEEE Transactions on Information Theory, 2021, 67, 8248-8263.	2.4	12
64	Universal prediction of random binary sequences in a noisy environment. Annals of Applied Probability, 2004, 14, .	1.3	12
65	Scanning and Sequential Decision Making for Multidimensional Dataâ€“Part I: The Noiseless Case. IEEE Transactions on Information Theory, 2007, 53, 3001-3020.	2.4	11
66	Discrete Denoising With Shifts. IEEE Transactions on Information Theory, 2009, 55, 5284-5301.	2.4	11
67	Universal estimation of directed information. , 2010, , .		11
68	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
69	Successive Refinement With Decoder Cooperation and Its Channel Coding Duals. IEEE Transactions on Information Theory, 2013, 59, 5511-5533.	2.4	11
70	Compression for Quadratic Similarity Queries. IEEE Transactions on Information Theory, 2015, 61, 2729-2747.	2.4	11
71	A Cluster-Based Approach to Compression of Quality Scores. , 2016, 2016, 261-270.		11
72	Relations Between Information and Estimation in Discrete-Time LÃ©vy Channels. IEEE Transactions on Information Theory, 2017, 63, 3579-3594.	2.4	11

#	ARTICLE	IF	CITATIONS
73	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
74	Directed information and causal estimation in continuous time. , 2009, , .		10
75	Secure source coding with a public helper. , 2013, 2013, 2209-2213.		10
76	Rateless Lossy Compression via the Extremes. IEEE Transactions on Information Theory, 2016, 62, 5484-5495.	2.4	10
77	Minimax estimation of the $L_{\infty}$ distance. , 2016, , .		10
78	Estimating the Fundamental Limits is Easier Than Achieving the Fundamental Limits. IEEE Transactions on Information Theory, 2019, 65, 6704-6715.	2.4	10
79	Bounds on the Error Exponent of the AWGN Channel with AWGN-Corrupted Feedback. , 2006, , .		9
80	Universal Denoising of Discrete-Time Continuous-Amplitude Signals. IEEE Transactions on Information Theory, 2008, 54, 5632-5660.	2.4	9
81	Multi-terminal source coding with action dependent side information. , 2011, , .		9
82	Lossy Compression of Discrete Sources via the Viterbi Algorithm. IEEE Transactions on Information Theory, 2012, 58, 2475-2489.	2.4	9
83	smallWig: parallel compression of RNA-seq WIG files. Bioinformatics, 2016, 32, 173-180.	4.1	9
84	Capacity and Zero-Error Capacity of the Chemical Channel with Feedback. , 2007, , .		8
85	A Universal Scheme for Wyner's Ziv Coding of Discrete Sources. IEEE Transactions on Information Theory, 2010, 56, 1737-1750.	2.4	8
86	An MCMC Approach to Lossy Compression of Continuous Sources. , 2010, , .		8
87	Multiterminal Source Coding With Action-Dependent Side Information. IEEE Transactions on Information Theory, 2013, 59, 3653-3667.	2.4	8
88	Achievable Error Exponents in the Gaussian Channel With Rate-Limited Feedback. IEEE Transactions on Information Theory, 2013, 59, 8144-8156.	2.4	8
89	To Feed or Not to Feedback. IEEE Transactions on Information Theory, 2014, 60, 5150-5172.	2.4	8
90	Minimax estimation of discrete distributions. , 2015, , .		8

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91	On real time coding with limited lookahead. , 2011, , .		7
92	To feed or not to feed back. , 2011, , .		7
93	Estimation With a Helper Who Knows the Interference. IEEE Transactions on Information Theory, 2013, 59, 7097-7117.	2.4	7
94	Capacity of a POST channel with and without feedback. , 2013, , .		7
95	Unsupervised learning and universal communication. , 2013, , .		7
96	Compression With Actions. IEEE Transactions on Information Theory, 2014, 60, 796-807.	2.4	7
97	Denoising of Aligned Genomic Data. Scientific Reports, 2019, 9, 15067.	3.3	7
98	Capacity of channels with action-dependent states. , 2009, , .		6
99	Problems we can solve with a helper. , 2009, , .		6
100	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
101	Denoising via MCMC-Based Lossy Compression. IEEE Transactions on Signal Processing, 2012, 60, 3092-3100.	5.3	6
102	Network compression: Worst-case analysis. , 2013, , .		6
103	Justification of logarithmic loss via the benefit of side information. , 2014, , .		6
104	Does dirichlet prior smoothing solve the Shannon entropy estimation problem?. , 2015, , .		6
105	Mutual Information, Relative Entropy and Estimation Error in Semi-Martingale Channels. IEEE Transactions on Information Theory, 2018, 64, 6662-6671.	2.4	6
106	Discrete denoising for channels with memory. Communications in Information and Systems, 2005, 5, 257-288.	0.5	6
107	Universal Denoising of Discrete-time Continuous-Amplitude Signals. , 2006, , .		5
108	A Universal Wyner-Ziv Scheme for Discrete Sources. , 2007, , .		5

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109	Competitive On-line Linear FIR MMSE Filtering. , 2007, , .		5
110	Universal Filtering Via Hidden Markov Modeling. IEEE Transactions on Information Theory, 2008, 54, 692-708.	2.4	5
111	Source coding with a side information &#x2018;vending machine&#x2019; at the decoder. , 2009, , .		5
112	GeneComp, a New Reference-Based Compressor for SAM Files. , 2017, 2017, 330-339.		5
113	Impact of lossy compression of nanopore raw signal data on basecalling and consensus accuracy. Bioinformatics, 2021, 36, 5313-5321.	4.1	5
114	Minimax Estimation of Divergences Between Discrete Distributions. IEEE Journal on Selected Areas in Information Theory, 2020, 1, 814-823.	2.5	5
115	An Implementable Scheme for Universal Lossy Compression of Discrete Markov Sources. , 2009, , .		4
116	Cascade, Triangular and two way source coding with degraded side information at the second user. , 2010, , .		4
117	Cascade and Triangular source coding with causal side information. , 2011, , .		4
118	Worst-case source for distributed compression with quadratic distortion. , 2012, , .		4
119	An MCMC Approach to Universal Lossy Compression of Analog Sources. IEEE Transactions on Signal Processing, 2012, 60, 5230-5240.	5.3	4
120	Distortion rate function of sub-Nyquist sampled Gaussian sources corrupted by noise. , 2013, , .		4
121	Pointwise relations between information and estimation in the Poisson channel. , 2013, , .		4
122	Minimax filtering regret via relations between information and estimation. , 2013, , .		4
123	Rateless lossy compression via the extremes. , 2014, , .		4
124	Relations between information and estimation in scalar L&#x00E9;vy channels. , 2014, , .		4
125	Maximum Likelihood Estimation of information measures. , 2015, , .		4
126	Compression for Quadratic Similarity Queries: Finite Blocklength and Practical Schemes. IEEE Transactions on Information Theory, 2016, 62, 2737-2747.	2.4	4



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127	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
128	AI-Generated Characters: Putting Deepfakes to Good Use. , 2022, , .		4
129	Universal Scanning and Sequential Decision Making for Multidimensional Data. , 2006, , .		3
130	Multiple description coding of discrete ergodic sources. , 2009, , .		3
131	Directed information, causal estimation, and communication in continuous time. , 2009, , .		3
132	Compression with actions. , 2011, , .		3
133	Universal estimation of directed information via sequential probability assignments. , 2012, , .		3
134	Network Compression: Worst Case Analysis. IEEE Transactions on Information Theory, 2015, 61, 3980-3995.	2.4	3
135	Beyond maximum likelihood: Boosting the Chow-Liu algorithm for large alphabets. , 2016, , .		3
136	Comment on: "ERGC: an efficient referential genome compression algorithm". Bioinformatics, 2016, 32, 1115-1117.	4.1	3
137	Minimax Redundancy for Markov Chains with Large State Space. , 2018, , .		3
138	Relations Between Information and Estimation in the Presence of Feedback. Lecture Notes in Control and Information Sciences, 2014, , 157-175.	1.0	3
139	OUP accepted manuscript. Nucleic Acids Research, 2022, , .	14.5	3
140	A Context Quantization Approach to Universal Denoising. , 2007, , .		2
141	How to Filter an "Individual Sequence With Feedback". IEEE Transactions on Information Theory, 2008, 54, 3831-3841.	2.4	2
142	Lossy Source Coding via Markov Chain Monte Carlo. , 2008, , .		2
143	To observe or not to observe the channel state. , 2010, , .		2
144	Error exponents for the Gaussian channel with noisy active feedback. , 2010, , .		2

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145	Quadratic Similarity Queries on Compressed Data. , 2013, , .		2
146	Reliable uncoded communication in the SIMO MAC via low-complexity decoding. , 2013, , .		2
147	Compression Schemes for Similarity Queries. , 2014, , .		2
148	Denosing of Quality Scores for Boosted Inference and Reduced Storage. , 2016, 2016, 251-260.		2
149	Information, Estimation, and Lookahead in the Gaussian Channel. IEEE Transactions on Signal Processing, 2016, 64, 3605-3618.	5.3	2
150	Mutual information, relative entropy and estimation error in semi-martingale channels. , 2016, , .		2
151	Near optimal lossy source coding and compression-based denosing via Markov chain Monte Carlo. , 2008, , .		1
152	Discrete denosing of heterogeneous two-dimensional data. , 2011, , .		1
153	Pointwise relations between information and estimation in Gaussian noise. , 2012, , .		1
154	Uncoded transmission in MAC channels achieves arbitrarily small error probability. , 2012, , .		1
155	On information, estimation and lookahead. , 2012, , .		1
156	Efficient similarity queries via lossy compression. , 2013, , .		1
157	Complexity and rate-distortion tradeoff via successive refinement. , 2013, , .		1
158	Reliable uncoded communication in the underdetermined SIMO MAC with low-complexity decoding. , 2013, , .		1
159	Compression for quadratic similarity queries via shape-gain quantizers. , 2014, , .		1
160	The Porosity of Additive Noise Channels. IEEE Transactions on Information Theory, 2014, 60, 3144-3162.	2.4	1
161	Minimax estimation of information measures. , 2015, , .		1
162	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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163	Minimax Rate-optimal Estimation of KL Divergence between Discrete Distributions. , 2016, 2016, 256-260.		1
164	Universal Scanning of Mixing Random Fields and the Performance of the Peano-Hilbert Scan. , 2006, , .		0
165	Scanning, Filtering and Prediction for Random Fields Corrupted by Gaussian Noise. , 2007, , .		0
166	Scanning and Sequential Decision Making for Multidimensional Data. , 2007, , .		0
167	An iterative scheme for near optimal and universal lossy compression. , 2009, , .		0
168	Universal lossless compression-based denoising. , 2010, , .		0
169	Compression for exact match identification. , 2013, , .		0
170	The role of lookahead in estimation under Gaussian noise. , 2013, , .		0
171	Information divergences and the curious case of the binary alphabet. , 2014, , .		0
172	Minimax Filtering Regret via Relations Between Information and Estimation. IEEE Transactions on Information Theory, 2014, 60, 4832-4847.	2.4	0