

Sergio Verdu

List of Publications by Year in descending order

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127
papers

8,701
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64
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128
all docs

128
docs citations

128
times ranked

4933
citing authors

#	ARTICLE	IF	CITATIONS
1	Channel Coding Rate in the Finite Blocklength Regime. IEEE Transactions on Information Theory, 2010, 56, 2307-2359.	2.6	2,583
2	Random Matrix Theory and Wireless Communications. Foundations and Trends in Communications and Information Theory, 2004, 1, 1-182.	3.1	1,339
3	Computational complexity of optimum multiuser detection. Algorithmica, 1989, 4, 303-312.	1.3	275
4	Divergence Estimation for Multidimensional Densities Via k -Nearest-Neighbor Distances. IEEE Transactions on Information Theory, 2009, 55, 2392-2405.	2.6	211
5	Estimation in Gaussian Noise: Properties of the Minimum Mean-Square Error. IEEE Transactions on Information Theory, 2011, 57, 2371-2385.	2.6	192
6	MIMO Gaussian Channels With Arbitrary Inputs: Optimal Precoding and Power Allocation. IEEE Transactions on Information Theory, 2010, 56, 1070-1084.	2.6	188
7	f -Divergence Inequalities. IEEE Transactions on Information Theory, 2016, 62, 5973-6006.	2.6	187
8	Feedback in the Non-Asymptotic Regime. IEEE Transactions on Information Theory, 2011, 57, 4903-4925.	2.6	181
9	Fixed-Length Lossy Compression in the Finite Blocklength Regime. IEEE Transactions on Information Theory, 2012, 58, 3309-3338.	2.6	171
10	Capacity of Cognitive Interference Channels With and Without Secrecy. IEEE Transactions on Information Theory, 2009, 55, 604-619.	2.6	143
11	Rényi Information Dimension: Fundamental Limits of Almost Lossless Analog Compression. IEEE Transactions on Information Theory, 2010, 56, 3721-3748.	2.6	132
12	Lossy Joint Source-Channel Coding in the Finite Blocklength Regime. IEEE Transactions on Information Theory, 2013, 59, 2545-2575.	2.6	108
13	Support Recovery With Sparsely Sampled Free Random Matrices. IEEE Transactions on Information Theory, 2013, 59, 4243-4271.	2.6	107
14	Cooperative Multiple-Access Encoding With States Available at One Transmitter. IEEE Transactions on Information Theory, 2008, 54, 4448-4469.	2.6	101
15	Functional Properties of Minimum Mean-Square Error and Mutual Information. IEEE Transactions on Information Theory, 2012, 58, 1289-1301.	2.6	100
16	Optimal Lossless Data Compression: Non-Asymptotics and Asymptotics. IEEE Transactions on Information Theory, 2014, 60, 777-795.	2.6	96
17	Capacity of Channels With Frequency-Selective and Time-Selective Fading. IEEE Transactions on Information Theory, 2010, 56, 1187-1215.	2.6	95
18	Optimal Phase Transitions in Compressed Sensing. IEEE Transactions on Information Theory, 2012, 58, 6241-6263.	2.6	92

#	ARTICLE	IF	CITATIONS
19	Arimoto channel coding converse and ϵ -nyi divergence. , 2010, , .		86
20	Mutual Information and Conditional Mean Estimation in Poisson Channels. IEEE Transactions on Information Theory, 2008, 54, 1837-1849.	2.6	83
21	MMSE Dimension. IEEE Transactions on Information Theory, 2011, 57, 4857-4879.	2.6	82
22	Dispersion of Gaussian channels. , 2009, , .		77
23	Dispersion of the Gilbert-Elliott Channel. IEEE Transactions on Information Theory, 2011, 57, 1829-1848.	2.6	77
24	Mismatched Estimation and Relative Entropy. IEEE Transactions on Information Theory, 2010, 56, 3712-3720.	2.6	68
25	On the Interplay Between Conditional Entropy and Error Probability. IEEE Transactions on Information Theory, 2010, 56, 5930-5942.	2.6	65
26	Optimum Power Allocation for Multiuser OFDM with Arbitrary Signal Constellations. IEEE Transactions on Communications, 2008, 56, 828-837.	8.4	59
27	Scalar coherent fading channel: Dispersion analysis. , 2011, , .		58
28	Capacity of channels with uncoded side information. European Transactions on Telecommunications, 1995, 6, 587-600.	1.1	56
29	The Information Lost in Erasures. IEEE Transactions on Information Theory, 2008, 54, 5030-5058.	2.6	53
30	Variable-Rate Channel Capacity. IEEE Transactions on Information Theory, 2010, 56, 2651-2667.	2.6	53
31	A Nearest-Neighbor Approach to Estimating Divergence between Continuous Random Vectors. , 2006, , .		52
32	Channel dispersion and moderate deviations limits for memoryless channels. , 2010, , .		51
33	Arimoto's ϵ -nyi Conditional Entropy and Bayesian M -Ary Hypothesis Testing. IEEE Transactions on Information Theory, 2018, 64, 4-25.	2.6	51
34	Representation of Mutual Information Via Input Estimates. IEEE Transactions on Information Theory, 2007, 53, 453-470.	2.6	49
35	The impact of constellation cardinality on Gaussian channel capacity. , 2010, , .		49
36	Minimum Energy to Send k Bits Through the Gaussian Channel With and Without Feedback. IEEE Transactions on Information Theory, 2011, 57, 4880-4902.	2.6	47

#	ARTICLE	IF	CITATIONS
37	Improved Bounds on Lossless Source Coding and Guessing Moments via Rényi Measures. IEEE Transactions on Information Theory, 2018, 64, 4323-4346.	2.6	47
38	α-mutual information. , 2015, , .		43
39	Minimum Expected Length of Fixed-to-Variable Lossless Compression Without Prefix Constraints. IEEE Transactions on Information Theory, 2011, 57, 4017-4025.	2.6	42
40	Energy-Distortion Tradeoffs in Gaussian Joint Source-Channel Coding Problems. IEEE Transactions on Information Theory, 2012, 58, 3153-3168.	2.6	42
41	Witsenhausen's counterexample: A view from optimal transport theory. , 2011, , .		41
42	Estimation of non-Gaussian random variables in Gaussian noise: Properties of the MMSE. , 2008, , .		38
43	Nonlinear Sparse-Graph Codes for Lossy Compression. IEEE Transactions on Information Theory, 2009, 55, 1961-1975.	2.6	38
44	Universal Estimation of Information Measures for Analog Sources. Foundations and Trends in Communications and Information Theory, 2009, 5, 265-353.	3.1	37
45	Lautum Information. IEEE Transactions on Information Theory, 2008, 54, 964-975.	2.6	36
46	Optimum multi-user detection with point-process observations. , 1985, , .		33
47	Proof of Entropy Power Inequalities Via MMSE. , 2006, , .		33
48	Degrees of freedom of the interference channel: A general formula. , 2011, , .		33
49	Empirical Distribution of Good Channel Codes With Nonvanishing Error Probability. IEEE Transactions on Information Theory, 2014, 60, 5-21.	2.6	33
50	Cumulant generating function of codeword lengths in optimal lossless compression. , 2014, , .		31
51	Variable-Length Compression Allowing Errors. IEEE Transactions on Information Theory, 2015, 61, 4316-4330.	2.6	31
52	Linear Differentially Coherent Multiuser Detection for Multipath Channels. Wireless Personal Communications, 1998, 6, 113-136.	2.8	30
53	Convexity/concavity of renyi entropy and α-mutual information. , 2015, , .		30
54	Rate-distortion in near-linear time. , 2008, , .		28

#	ARTICLE	IF	CITATIONS
55	Analysis of an Approximate Decorrelating Detector. <i>Wireless Personal Communications</i> , 1998, 6, 97-111.	2.8	27
56	Information Dimension and the Degrees of Freedom of the Interference Channel. <i>IEEE Transactions on Information Theory</i> , 2015, 61, 256-279.	2.6	27
57	Total variation distance and the distribution of relative information. , 2014, , .		25
58	Secret Key Generation With Limited Interaction. <i>IEEE Transactions on Information Theory</i> , 2017, 63, 7358-7381.	2.6	24
59	Operational Duality Between Lossy Compression and Channel Coding. <i>IEEE Transactions on Information Theory</i> , 2011, 57, 3171-3179.	2.6	23
60	Fountain Capacity. <i>IEEE Transactions on Information Theory</i> , 2007, 53, 4372-4376.	2.6	22
61	Functional properties of MMSE. , 2010, , .		18
62	Channels With Cost Constraints: Strong Converse and Dispersion. <i>IEEE Transactions on Information Theory</i> , 2015, 61, 2415-2429.	2.6	18
63	Canonical time-frequency, time-scale, and frequency-scale representations of time-varying channels. <i>Communications in Information and Systems</i> , 2005, 5, 197-226.	0.6	18
64	Universal Algorithms for Channel Decoding of Uncompressed Sources. <i>IEEE Transactions on Information Theory</i> , 2008, 54, 2243-2262.	2.6	17
65	New channel coding achievability bounds. , 2008, , .		17
66	On $\hat{\epsilon}$ -decodability and $\hat{\epsilon}$ -likelihood decoder. , 2017, , .		17
67	Brascamp-Lieb inequality and its reverse: An information theoretic view. , 2016, , .		16
68	A Single-Shot Approach to Lossy Source Coding Under Logarithmic Loss. <i>IEEE Transactions on Information Theory</i> , 2018, 64, 129-147.	2.6	15
69	Minimum energy to send k bits with and without feedback. , 2010, , .		14
70	Universal lossy compression under logarithmic loss. , 2017, , .		14
71	A Forward-Reverse Brascamp-Lieb Inequality: Entropic Duality and Gaussian Optimality. <i>Entropy</i> , 2018, 20, 418.	2.3	14
72	Erasure Entropy. , 2006, , .		13

#	ARTICLE	IF	CITATIONS
73	Minimum energy per bit for Gaussian broadcast channels with common message and cooperating receivers. , 2009, , .		13
74	Nonlinear Sparse-Graph Codes for Lossy Compression of Discrete Nonredundant Sources. , 2007, , .		11
75	A new converse in rate-distortion theory. , 2012, , .		11
76	Optimal lossless compression: Source varentropy and dispersion. , 2013, , .		11
77	Variable-length lossy compression and channel coding: Non-asymptotic converses via cumulant generating functions. , 2014, , .		11
78	Conditional Rényi Divergence Saddlepoint and the Maximization of \hat{I}_{\pm} -Mutual Information. Entropy, 2019, 21, 969.	2.3	11
79	Asymptotic efficiency of linear multiuser detectors. , 1986, , .		10
80	Dispersion of the Gilbert-Elliott channel. , 2009, , .		10
81	Variable-length coding with feedback in the non-asymptotic regime. , 2010, , .		10
82	Multicasting in Large Wireless Networks: Bounds on the Minimum Energy Per Bit. IEEE Transactions on Information Theory, 2011, 57, 14-32.	2.6	10
83	On the transport capacity of a broadcast Gaussian channel. Communications in Information and Systems, 2002, 2, 183-216.	0.6	10
84	Backward, forward and backward-forward dynamic programming models under commutativity conditions. , 1984, , .		9
85	Lossless data compression rate: Asymptotics and non-asymptotics. , 2012, , .		9
86	Upper bounds on the relative entropy and Rényi divergence as a function of total variation distance for finite alphabets. , 2015, , .		9
87	A Universal Scheme for Wyner's Ziv Coding of Discrete Sources. IEEE Transactions on Information Theory, 2010, 56, 1737-1750.	2.6	8
88	Fixed-length lossy compression in the finite blocklength regime: Discrete memoryless sources. , 2011, , .		8
89	Smoothing Brascamp-Lieb inequalities and strong converses for common randomness generation. , 2016, , .		8
90	Mismatched estimation and relative entropy. , 2009, , .		7

#	ARTICLE	IF	CITATIONS
91	Energy efficient lossy transmission over sensor networks with feedback. , 2010, , .		7
92	Energy Efficiency of Decode-and-Forward for Wideband Wireless Multicasting. IEEE Transactions on Information Theory, 2011, 57, 7695-7713.	2.6	7
93	Universal Erasure Entropy Estimation. , 2006, , .		6
94	Minimum Energy per Bit for Wideband Wireless Multicasting: Performance of Decode-and-Forward. , 2010, , .		6
95	Estimation of entropy rate and Rényi entropy rate for Markov chains. , 2016, , .		6
96	Error Exponents and \hat{I} -Mutual Information. Entropy, 2021, 23, 199.	2.3	6
97	A Universal Wyner-Ziv Scheme for Discrete Sources. , 2007, , .		5
98	Fundamental limits of almost lossless analog compression. , 2009, , .		5
99	MMSE dimension. , 2010, , .		5
100	Relative entropy at the channel output of a capacity-achieving code. , 2011, , .		5
101	A Coding Theorem for f -Separable Distortion Measures. Entropy, 2018, 20, 111.	2.3	5
102	Multicasting in large random wireless networks: Bounds on the minimum energy per bit. , 2009, , .		4
103	Universal Estimation of Erasure Entropy. IEEE Transactions on Information Theory, 2009, 55, 350-357.	2.6	4
104	Derivative of Mutual Information at Zero SNR: The Gaussian-Noise Case. IEEE Transactions on Information Theory, 2011, 57, 7307-7312.	2.6	4
105	To code or not to code: Revisited. , 2012, , .		4
106	Minimax Rényi Redundancy. IEEE Transactions on Information Theory, 2018, 64, 3715-3733.	2.6	4
107	The Error Probability of Generalized Perfect Codes via the Meta-Converse. IEEE Transactions on Information Theory, 2019, 65, 5705-5717.	2.6	4
108	A "Small World" Approach to Heterogeneous Networks. Communications in Information and Systems, 2003, 3, 325-348.	0.6	4

#	ARTICLE	IF	CITATIONS
109	Conditional entropy and error probability. , 2008, , .		3
110	Energy-distortion tradeoffs in multiple-access channels with feedback. , 2010, , .		3
111	Operational duality between Gelfand-Pinsker and Wyner-Ziv coding. , 2010, , .		3
112	Fixed-length lossy compression in the finite blocklength regime: Gaussian source. , 2011, , .		3
113	Nonasymptotic noisy lossy source coding. , 2013, , .		3
114	Channels with cost constraints: Strong converse and dispersion. , 2013, , .		3
115	Minimum expected length of fixed-to-variable lossless compression of memoryless sources. , 2009, , .		2
116	Approaching the DT Bound Using Linear Codes in the Short Blocklength Regime. IEEE Communications Letters, 2015, 19, 123-126.	4.4	2
117	Universal Compression, List Decoding, and Logarithmic Loss. , 2018, , .		2
118	Energy efficiency of wireless cooperation. , 2016, , .		1
119	f-Divergence inequalities via functional domination. , 2016, , .		1
120	Arimoto-Rényi conditional entropy and Bayesian hypothesis testing. , 2017, , .		1
121	Sharp Bounds for Mutual Covering. IEEE Transactions on Information Theory, 2019, 65, 8067-8083.	2.6	1
122	Multiuser Detection for Out-of-Cell Cochannel Interference Mitigation in the IS-95 Downlink. Journal of Signal Processing Systems, 2002, 30, 217-233.	1.0	0
123	Universal Lossless Compression of Erased Symbols. IEEE Transactions on Information Theory, 2008, 54, 5563-5574.	2.6	0
124	Energy-distortion tradeoff with multiple sources and feedback. , 2010, , .		0
125	Non-Asymptotic Bounds for Optimal Fixed-to-Variable Lossless Compression without Prefix Constraints. , 2018, , .		0
126	Improved Bounds on Guessing Moments via Rényi Measures. , 2018, , .		0

#	ARTICLE	IF	CITATIONS
127	Optimal Universal Lossless Compression with Side Information. IEEE Transactions on Information Theory, 2024, , 1-1.	2.6	0