Aram W Harrow

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/8722593/publications.pdf

Version: 2024-02-01

78	6,321	147801	144013
papers	citations	31 h-index	57 g-index

80	80	80	3770
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Quantum Algorithm for Linear Systems of Equations. Physical Review Letters, 2009, 103, 150502.	7.8	1,596
2	Supervised learning with quantum-enhanced feature spaces. Nature, 2019, 567, 209-212.	27.8	939
3	Quantum computational supremacy. Nature, 2017, 549, 203-209.	27.8	497
4	Practical Scheme for Quantum Computation with Any Two-Qubit Entangling Gate. Physical Review Letters, 2002, 89, 247902.	7.8	195
5	Random Quantum Circuits are Approximate 2-designs. Communications in Mathematical Physics, 2009, 291, 257-302.	2.2	186
6	Local Random Quantum Circuits are Approximate Polynomial-Designs. Communications in Mathematical Physics, 2016, 346, 397-434.	2.2	174
7	Arbitrarily accurate composite pulse sequences. Physical Review A, 2004, 70, .	2.5	163
8	A Resource Framework for Quantum Shannon Theory. IEEE Transactions on Information Theory, 2008, 54, 4587-4618.	2.4	142
9	Superdense Coding of Quantum States. Physical Review Letters, 2004, 92, 187901.	7.8	133
10	Quantum dynamics as a physical resource. Physical Review A, 2003, 67, .	2.5	129
11	Efficient distributed quantum computing. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20120686.	2.1	126
12	The Quantum Reverse Shannon Theorem and Resource Tradeoffs for Simulating Quantum Channels. IEEE Transactions on Information Theory, 2014, 60, 2926-2959.	2.4	122
13	Robustness of quantum gates in the presence of noise. Physical Review A, 2003, 68, .	2.5	113
14	On the capacities of bipartite hamiltonians and unitary gates. IEEE Transactions on Information Theory, 2003, 49, 1895-1911.	2.4	112
15	Efficient Quantum Circuits for Schur and Clebsch-Gordan Transforms. Physical Review Letters, 2006, 97, 170502.	7.8	97
16	Simulating Large Quantum Circuits on a Small Quantum Computer. Physical Review Letters, 2020, 125, 150504.	7.8	93
17	Hypercontractivity, sum-of-squares proofs, and their applications. , 2012, , .		84
18	Sample-optimal tomography of quantum states. IEEE Transactions on Information Theory, 2017, , 1-1.	2.4	80

#	Article	IF	Citations
19	A Family of Quantum Protocols. Physical Review Letters, 2004, 93, 230504.	7.8	79
20	Adaptive versus nonadaptive strategies for quantum channel discrimination. Physical Review A, 2010, 81, .	2.5	73
21	Coherent Communication of Classical Messages. Physical Review Letters, 2004, 92, 097902.	7.8	66
22	Efficient discrete approximations of quantum gates. Journal of Mathematical Physics, 2002, 43, 4445-4451.	1.1	64
23	Quantum computing at the frontiers of biological sciences. Nature Methods, 2021, 18, 701-709.	19.0	64
24	Nonzero Kronecker Coefficients and What They Tell us about Spectra. Communications in Mathematical Physics, 2007, 270, 575-585.	2.2	58
25	Quantum Conditional Mutual Information, Reconstructed States, and State Redistribution. Physical Review Letters, 2015, 115, 050501.	7.8	55
26	Simulated Quantum Annealing Can Be Exponentially Faster Than Classical Simulated Annealing. , 2016, , .		51
27	Testing Product States, Quantum Merlin-Arthur Games and Tensor Optimization. Journal of the ACM, 2013, 60, 1-43.	2.2	50
28	Superactivation of the Asymptotic Zero-Error Classical Capacity of a Quantum Channel. IEEE Transactions on Information Theory, 2011, 57, 8114-8126.	2.4	49
29	Low-Depth Gradient Measurements Can Improve Convergence in Variational Hybrid Quantum-Classical Algorithms. Physical Review Letters, 2021, 126, 140502.	7.8	47
30	Strengthened Monotonicity of Relative Entropy via Pinched Petz Recovery Map. IEEE Transactions on Information Theory, 2016, 62, 2907-2913.	2.4	45
31	How many qubits are needed for quantum computational supremacy?. Quantum - the Open Journal for Quantum Science, 0, 4, 264.	0.0	42
32	Counterexamples to Additivity of Minimum Output p-RÃ©nyi Entropy for p Close to 0. Communications in Mathematical Physics, 2008, 284, 281-290.	2.2	39
33	Quantum algorithms for jet clustering. Physical Review D, 2020, 101, .	4.7	38
34	Efficient Quantum Pseudorandomness. Physical Review Letters, 2016, 116, 170502.	7.8	35
35	Universal quantum data compression via nondestructive tomography. Physical Review A, 2006, 73, .	2.5	27
36	Efficient Classical Simulation of Random Shallow 2D Quantum Circuits. Physical Review X, 2022, 12, .	8.9	27

#	Article	IF	Citations
37	Quantum de finetti theorems under local measurements with applications. , 2013, , .		24
38	Local Hamiltonians Whose Ground States Are Hard to Approximate. , 2017, , .		23
39	Product-state approximations to quantum ground states. , 2013, , .		19
40	Sample-optimal tomography of quantum states. , 2016, , .		19
41	Product-State Approximations to Quantum States. Communications in Mathematical Physics, 2016, 342, 47-80.	2.2	19
42	How Many Copies are Needed for State Discrimination?. IEEE Transactions on Information Theory, 2012, 58, 1-2.	2.4	18
43	An Improved Semidefinite Programming Hierarchy for Testing Entanglement. Communications in Mathematical Physics, 2017, 352, 881-904.	2.2	18
44	Separation of Out-Of-Time-Ordered Correlation and Entanglement. PRX Quantum, 2021, 2, .	9.2	18
45	Quantum Algorithms for Testing Properties of Distributions. IEEE Transactions on Information Theory, 2011, 57, 3971-3981.	2.4	17
46	Random Tensor Theory: Extending Random Matrix Theory to Mixtures of Random Product States. Communications in Mathematical Physics, 2012, 310, 25-74.	2.2	17
47	Quantum de Finetti Theorems Under Local Measurements with Applications. Communications in Mathematical Physics, 2017, 353, 469-506.	2.2	17
48	An Efficient Test for Product States with Applications to Quantum Merlin-Arthur Games. , 2010, , .		15
49	Local Tests of Global Entanglement and a Counterexample to the Generalized Area Law. , 2014, , .		15
50	Sparse Quantum Codes From Quantum Circuits. IEEE Transactions on Information Theory, 2017, 63, 2464-2479.	2.4	14
51	Adaptive Quantum Simulated Annealing for Bayesian Inference and Estimating Partition Functions. , 2020, , 193-212.		13
52	Efficient Quantum Tensor Product Expanders and k-Designs. Lecture Notes in Computer Science, 2009, , 548-561.	1.3	12
53	Classical algorithms, correlation decay, and complex zeros of partition functions of Quantum many-body systems. , 2020, , .		12
54	Compressibility of Positive Semidefinite Factorizations and Quantum Models. IEEE Transactions on Information Theory, 2016, 62, 2867-2880.	2.4	11

#	Article	IF	Citations
55	Adversarial Hypothesis Testing and a Quantum Steinâ€™s Lemma for Restricted Measurements. IEEE Transactions on Information Theory, 2020, 66, 5037-5054.	2.4	10
56	Weak Fourier-Schur Sampling, the Hidden Subgroup Problem, and the Quantum Collision Problem. , 2007, , 598-609.		10
57	Extremal eigenvalues of local Hamiltonians. Quantum - the Open Journal for Quantum Science, 0, 1, 6.	0.0	10
58	Time Reversal and Exchange Symmetries of Unitary Gate Capacities. IEEE Transactions on Information Theory, 2010, 56, 462-475.	2.4	8
59	Limitations of Semidefinite Programs for Separable States and Entangled Games. Communications in Mathematical Physics, 2019, 366, 423-468.	2.2	8
60	Quantum bit commitment with misaligned reference frames. Physical Review A, 2006, 73, .	2.5	7
61	Sparse Quantum Codes from Quantum Circuits. , 2015, , .		7
62	Rapid mixing of path integral Monte Carlo for 1D stoquastic Hamiltonians. Quantum - the Open Journal for Quantum Science, 0, 5, 395.	0.0	7
63	ENTANGLEMENT SPREAD AND CLEAN RESOURCE INEQUALITIES. , 2010, , .		6
64	A Communication-Efficient Nonlocal Measurement With Application to Communication Complexity and Bipartite Gate Capacities. IEEE Transactions on Information Theory, 2011, 57, 5504-5508.	2.4	6
65	Entanglement can Completely Defeat Quantum Noise. Physical Review Letters, 2011, 107, 250504.	7.8	5
66	Sequential measurements, disturbance and property testing. , 2017, , .		5
67	Superpolynomial Speedups Based on Almost Any Quantum Circuit. Lecture Notes in Computer Science, 2008, , 782-795.	1.3	5
68	Why now is the right time to study quantum computing. Xrds, 2012, 18, 32-37.	0.3	4
69	Quantum blackjack: Advantages offered by quantum strategies in communication-limited games. Physical Review A, 2020, 102, .	2.5	4
70	Nonlinear Bell inequality for macroscopic measurements. Physical Review A, 2021, 103, .	2.5	4
71	Title is missing!. Theory of Computing, 2014, 10, 55-75.	0.5	4
72	An exponential separation between the entanglement and communication capacities of a bipartite unitary interaction. , 2008, , .		3

#	Article	IF	Citations
73	Super-duper-activation of the zero-error quantum capacity. , 2010, , .		3
74	Adversarial hypothesis testing and a quantum stein's lemma for restricted measurements. , 2014, , .		2
75	Limitations on quantum dimensionality reduction. International Journal of Quantum Information, 2015, 13, 1440001.	1.1	2
76	Quantum Algorithms for Systems of Linear Equations. , 2016, , 1680-1683.		2
77	Expected Communication Cost of Distributed Quantum Tasks. IEEE Transactions on Information Theory, 2018, 64, 7395-7423.	2.4	1
78	Expected Communication Cost of Distributed Quantum Tasks. , 2018, , .		0