Aram W Harrow

List of Publications by Year
in descending order

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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	Efficient Classical Simulation of Random Shallow 2D Quantum Circuits. Physical Review X, 2022, 12, .	8.9	27
2	Nonlinear Bell inequality for macroscopic measurements. Physical Review A, 2021, 103, .	2.5	4
3	Quantum computing at the frontiers of biological sciences. Nature Methods, 2021, 18, 701-709.	19.0	64
4	Low-Depth Gradient Measurements Can Improve Convergence in Variational Hybrid Quantum-Classical Algorithms. Physical Review Letters, 2021, 126, 140502.	7.8	47
5	Separation of Out-Of-Time-Ordered Correlation and Entanglement. PRX Quantum, 2021, 2, .	9.2	18
6	Simulating Large Quantum Circuits on a Small Quantum Computer. Physical Review Letters, 2020, 125, 150504.	7.8	93
7	Quantum algorithms for jet clustering. Physical Review D, 2020, 101, .	4.7	38
8	Quantum blackjack: Advantages offered by quantum strategies in communication-limited games. Physical Review A, 2020, 102, .	2.5	4
9	Adaptive Quantum Simulated Annealing for Bayesian Inference and Estimating Partition Functions. , 2020, , 193-212.		13
10	Adversarial Hypothesis Testing and a Quantum Steinâ€™s Lemma for Restricted Measurements. IEEE Transactions on Information Theory, 2020, 66, 5037-5054.	2.4	10
11	Classical algorithms, correlation decay, and complex zeros of partition functions of Quantum many-body systems. , 2020, , .		12
12	Limitations of Semidefinite Programs for Separable States and Entangled Games. Communications in Mathematical Physics, 2019, 366, 423-468.	2.2	8
13	Supervised learning with quantum-enhanced feature spaces. Nature, 2019, 567, 209-212.	27.8	939
14	Expected Communication Cost of Distributed Quantum Tasks. , 2018, , .		0
15	Expected Communication Cost of Distributed Quantum Tasks. IEEE Transactions on Information Theory, 2018, 64, 7395-7423.	2.4	1
16	Sparse Quantum Codes From Quantum Circuits. IEEE Transactions on Information Theory, 2017, 63, 2464-2479.	2.4	14
17	Sequential measurements, disturbance and property testing. , 2017, , .		5
18	Quantum de Finetti Theorems Under Local Measurements with Applications. Communications in Mathematical Physics, 2017, 353, 469-506.	2.2	17

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19	An Improved Semidefinite Programming Hierarchy for Testing Entanglement. Communications in Mathematical Physics, 2017, 352, 881-904.	2.2	18
20	Quantum computational supremacy. Nature, 2017, 549, 203-209.	27.8	497
21	Sample-optimal tomography of quantum states. IEEE Transactions on Information Theory, 2017, , 1-1.	2.4	80
22	Local Hamiltonians Whose Ground States Are Hard to Approximate. , 2017, , .		23
23	Simulated Quantum Annealing Can Be Exponentially Faster Than Classical Simulated Annealing. , 2016, , .		51
24	Strengthened Monotonicity of Relative Entropy via Pinched Petz Recovery Map. IEEE Transactions on Information Theory, 2016, 62, 2907-2913.	2.4	45
25	Sample-optimal tomography of quantum states. , 2016, , .		19
26	Local Random Quantum Circuits are Approximate Polynomial-Designs. Communications in Mathematical Physics, 2016, 346, 397-434.	2.2	174
27	Efficient Quantum Pseudorandomness. Physical Review Letters, 2016, 116, 170502.	7.8	35
28	Compressibility of Positive Semidefinite Factorizations and Quantum Models. IEEE Transactions on Information Theory, 2016, 62, 2867-2880.	2.4	11
29	Product-State Approximations to Quantum States. Communications in Mathematical Physics, 2016, 342, 47-80.	2.2	19
30	Quantum Algorithms for Systems of Linear Equations. , 2016, , 1680-1683.		2
31	Quantum Conditional Mutual Information, Reconstructed States, and State Redistribution. Physical Review Letters, 2015, 115, 050501.	7.8	55
32	Limitations on quantum dimensionality reduction. International Journal of Quantum Information, 2015, 13, 1440001.	1.1	2
33	Sparse Quantum Codes from Quantum Circuits. , 2015, , .		7
34	Adversarial hypothesis testing and a quantum stein's lemma for restricted measurements. , 2014, , .		2
35	The Quantum Reverse Shannon Theorem and Resource Tradeoffs for Simulating Quantum Channels. IEEE Transactions on Information Theory, 2014, 60, 2926-2959.	2.4	122
36	Local Tests of Global Entanglement and a Counterexample to the Generalized Area Law. , 2014, , .		15

#	Article	IF	Citations
37	Title is missing!. Theory of Computing, 2014, 10, 55-75.	0.5	4
38	Product-state approximations to quantum ground states. , 2013, , .		19
39	Testing Product States, Quantum Merlin-Arthur Games and Tensor Optimization. Journal of the ACM, 2013, 60, 1-43.	2.2	50
40	Efficient distributed quantum computing. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20120686.	2.1	126
41	Quantum de finetti theorems under local measurements with applications. , 2013, , .		24
42	Why now is the right time to study quantum computing. Xrds, 2012, 18, 32-37.	0.3	4
43	Hypercontractivity, sum-of-squares proofs, and their applications. , 2012, , .		84
44	How Many Copies are Needed for State Discrimination?. IEEE Transactions on Information Theory, 2012, 58, 1-2.	2.4	18
45	Random Tensor Theory: Extending Random Matrix Theory to Mixtures of Random Product States. Communications in Mathematical Physics, 2012, 310, 25-74.	2.2	17
46	Quantum Algorithms for Testing Properties of Distributions. IEEE Transactions on Information Theory, 2011, 57, 3971-3981.	2.4	17
47	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
48	Superactivation of the Asymptotic Zero-Error Classical Capacity of a Quantum Channel. IEEE Transactions on Information Theory, 2011, 57, 8114-8126.	2.4	49
49	Entanglement can Completely Defeat Quantum Noise. Physical Review Letters, 2011, 107, 250504.	7.8	5
50	ENTANGLEMENT SPREAD AND CLEAN RESOURCE INEQUALITIES. , 2010, , .		6
51	Time Reversal and Exchange Symmetries of Unitary Gate Capacities. IEEE Transactions on Information Theory, 2010, 56, 462-475.	2.4	8
52	An Efficient Test for Product States with Applications to Quantum Merlin-Arthur Games. , 2010, , .		15
53	Super-duper-activation of the zero-error quantum capacity. , 2010, , .		3
54	Adaptive versus nonadaptive strategies for quantum channel discrimination. Physical Review A, 2010, 81, .	2.5	73

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55	Random Quantum Circuits are Approximate 2-designs. Communications in Mathematical Physics, 2009, 291, 257-302.	2.2	186
56	Quantum Algorithm for Linear Systems of Equations. Physical Review Letters, 2009, 103, 150502.	7.8	1,596
57	Efficient Quantum Tensor Product Expanders and k-Designs. Lecture Notes in Computer Science, 2009, , 548-561.	1.3	12
58	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
59	A Resource Framework for Quantum Shannon Theory. IEEE Transactions on Information Theory, 2008, 54, 4587-4618.	2.4	142
60	An exponential separation between the entanglement and communication capacities of a bipartite unitary interaction. , 2008, , .		3
61	Superpolynomial Speedups Based on Almost Any Quantum Circuit. Lecture Notes in Computer Science, 2008, , 782-795.	1.3	5
62	Nonzero Kronecker Coefficients and What They Tell us about Spectra. Communications in Mathematical Physics, 2007, 270, 575-585.	2.2	58
63	Weak Fourier-Schur Sampling, the Hidden Subgroup Problem, and the Quantum Collision Problem. , 2007, , 598-609.		10
64	Efficient Quantum Circuits for Schur and Clebsch-Gordan Transforms. Physical Review Letters, 2006, 97, 170502.	7.8	97
65	Quantum bit commitment with misaligned reference frames. Physical Review A, 2006, 73, .	2.5	7
66	Universal quantum data compression via nondestructive tomography. Physical Review A, 2006, 73, .	2.5	27
67	Coherent Communication of Classical Messages. Physical Review Letters, 2004, 92, 097902.	7.8	66
68	A Family of Quantum Protocols. Physical Review Letters, 2004, 93, 230504.	7.8	79
69	Superdense Coding of Quantum States. Physical Review Letters, 2004, 92, 187901.	7.8	133
70	Arbitrarily accurate composite pulse sequences. Physical Review A, 2004, 70, .	2.5	163
71	On the capacities of bipartite hamiltonians and unitary gates. IEEE Transactions on Information Theory, 2003, 49, 1895-1911.	2.4	112
72	Robustness of quantum gates in the presence of noise. Physical Review A, 2003, 68, .	2.5	113

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73	Quantum dynamics as a physical resource. Physical Review A, 2003, 67, .	2.5	129
74	Practical Scheme for Quantum Computation with Any Two-Qubit Entangling Gate. Physical Review Letters, 2002, 89, 247902.	7.8	195
75	Efficient discrete approximations of quantum gates. Journal of Mathematical Physics, 2002, 43, 4445-4451.	1.1	64
76	Rapid mixing of path integral Monte Carlo for 1D stoquastic Hamiltonians. Quantum - the Open Journal for Quantum Science, 0, 5, 395.	0.0	7
77	Extremal eigenvalues of local Hamiltonians. Quantum - the Open Journal for Quantum Science, 0, 1, 6.	0.0	10
78	How many qubits are needed for quantum computational supremacy?. Quantum - the Open Journal for Quantum Science, 0, 4, 264.	0.0	42