

J D Biamonte

List of Publications by Year in descending order

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Version: 2024-02-01

61
papers

4,969
citations

186209

28
h-index

161767

54
g-index

63
all docs

63
docs citations

63
times ranked

4232
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantum machine learning. Nature, 2017, 549, 195-202.	13.7	1,973
2	Towards quantum chemistry on a quantum computer. Nature Chemistry, 2010, 2, 106-111.	6.6	568
3	Simulation of electronic structure Hamiltonians using quantum computers. Molecular Physics, 2011, 109, 735-750.	0.8	310
4	High-fidelity spin entanglement using optimal control. Nature Communications, 2014, 5, 3371.	5.8	244
5	The urgent need for integrated science to fight COVID-19 pandemic and beyond. Journal of Translational Medicine, 2020, 18, 205.	1.8	128
6	Realizable Hamiltonians for universal adiabatic quantum computers. Physical Review A, 2008, 78, .	1.0	120
7	Quantum Simulation of Helium Hydride Cation in a Solid-State Spin Register. ACS Nano, 2015, 9, 7769-7774.	7.3	113
8	Experimental neural network enhanced quantum tomography. Npj Quantum Information, 2020, 6, .	2.8	109
9	Complex networks from classical to quantum. Communications Physics, 2019, 2, .	2.0	92
10	Sign- and Magnitude-Tunable Coupler for Superconducting Flux Qubits. Physical Review Letters, 2007, 98, .	2.9	89
11	Reachability Deficits in Quantum Approximate Optimization. Physical Review Letters, 2020, 124, 090504.	2.9	84
12	Nonperturbative k -body to two-body commuting conversion Hamiltonians and embedding problem instances into Ising spins. Physical Review A, 2008, 77, .	1.0	75
13	Spectral Entropies as Information-Theoretic Tools for Complex Network Comparison. Physical Review X, 2016, 6, .	2.8	66
14	Adiabatic quantum simulators. AIP Advances, 2011, 1, .	0.6	57
15	On the universality of the quantum approximate optimization algorithm. Quantum Information Processing, 2020, 19, 1.	1.0	54
16	On barren plateaus and cost function locality in variational quantum algorithms. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 245301.	0.7	54
17	Universal variational quantum computation. Physical Review A, 2021, 103, .	1.0	52
18	Ground-state spin logic. Europhysics Letters, 2012, 99, 57004.	0.7	51

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19	Quantum Transport Enhancement by Time-Reversal Symmetry Breaking. Scientific Reports, 2013, 3, 2361.	1.6	49
20	Parameter concentrations in quantum approximate optimization. Physical Review A, 2021, 104, .	1.0	49
21	Degree Distribution in Quantum Walks on Complex Networks. Physical Review X, 2013, 3, .	2.8	40
22	Machine learning phase transitions with a quantum processor. Physical Review A, 2020, 102, .	1.0	39
23	Variational learning of Grover's quantum search algorithm. Physical Review A, 2018, 98, .	1.0	38
24	Variational quantum eigensolver for frustrated quantum systems. Physical Review B, 2020, 102, .	1.1	37
25	Chiral quantum walks. Physical Review A, 2016, 93, .	1.0	36
26	Categorical Tensor Network States. AIP Advances, 2011, 1, .	0.6	33
27	Tensor networks and graphical calculus for open quantum systems. Quantum Information and Computation, 2015, 15, 759-811.	0.1	33
28	Community Detection in Quantum Complex Networks. Physical Review X, 2014, 4, .	2.8	28
29	Test Generation and Fault Localization for Quantum Circuits. , 0, , .		27
30	Abrupt transitions in variational quantum circuit training. Physical Review A, 2021, 103, .	1.0	26
31	Quantum technologies in Russia. Quantum Science and Technology, 2019, 4, 040501.	2.6	24
32	Tensor Network Contractions for #SAT. Journal of Statistical Physics, 2015, 160, 1389-1404.	0.5	23
33	Algebraically contractible topological tensor network states. Journal of Physics A: Mathematical and Theoretical, 2012, 45, 015309.	0.7	21
34	Reachability Deficits in Quantum Approximate Optimization of Graph Problems. Quantum - the Open Journal for Quantum Science, 0, 5, 532.	0.0	20
35	Training saturation in layerwise quantum approximate optimization. Physical Review A, 2021, 104, .	1.0	20
36	Hamiltonian gadgets with reduced resource requirements. Physical Review A, 2015, 91, .	1.0	19

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37	Categorical quantum circuits. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 245304.	0.7	16
38	Tensor network methods for invariant theory. Journal of Physics A: Mathematical and Theoretical, 2013, 46, 475301.	0.7	14
39	Fault Models for Quantum Mechanical Switching Networks. Journal of Electronic Testing: Theory and Applications (JETTA), 2010, 26, 499-511.	0.9	13
40	Quantum Machine Learning Tensor Network States. Frontiers in Physics, 2021, 8, .	1.0	13
41	Solving search problems by strongly simulating quantum circuits. Scientific Reports, 2013, 3, 1235.	1.6	11
42	Undecidability in tensor network states. Physical Review A, 2012, 86, .	1.0	10
43	Certified variational quantum algorithms for eigenstate preparation. Physical Review A, 2020, 102, .	1.0	10
44	Variational simulation of Schwinger's Hamiltonian with polarization qubits. Applied Physics Letters, 2021, 118, .	1.5	10
45	Unraveling the effects of multiscale network entanglement on empirical systems. Communications Physics, 2021, 4, .	2.0	10
46	Numerical hardware-efficient variational quantum simulation of a soliton solution. Physical Review A, 2021, 104, .	1.0	10
47	Keep quantum computing global and open. Nature, 2019, 573, 190-191.	13.7	7
48	Topological classification of time-asymmetry in unitary quantum processes. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 235301.	0.7	6
49	Four-level realisation of 3-qubit reversible functions. IET Computers and Digital Techniques, 2007, 1, 382.	0.9	5
50	Probing criticality in quantum spin chains with neural networks. Journal of Physics Complexity, 2020, 1, 03LT01.	0.9	5
51	Charged string tensor networks. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 2447-2449.	3.3	3
52	Entanglement scaling in quantum advantage benchmarks. Physical Review A, 2020, 101, .	1.0	3
53	Extending classical test to quantum. , 2005, , .		2
54	Publisher's Note: Nonperturbative k -body to two-body commuting conversion Hamiltonians and embedding problem instances into Ising spins [Phys. Rev. A 77 , 052331 (2008)]. Physical Review A, 2008, 77, .	1.0	2

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55	Editorial: Adiabatic Quantum Computation. <i>Frontiers in Physics</i> , 2019, 7, .	1.0	2
56	Automated Test Pattern Generation for Quantum Circuits. <i>PSU McNair Scholars Online Journal</i> , 2005, 1, 38-47.	0.3	2
57	Racing a quantum computer through Minkowski spacetime. <i>Journal of Physics: Conference Series</i> , 2010, 229, 012020.	0.3	1
58	Pushing Tensor Networks to the Limit. <i>Physics Magazine</i> , 2019, 12, .	0.1	0
59	Computational phase transitions: benchmarking Ising machines and quantum optimisers. <i>Journal of Physics Complexity</i> , 2021, 2, 011002.	0.9	0
60	Deep learning super-diffusion in multiplex networks. <i>Journal of Physics Complexity</i> , 2021, 2, 035011.	0.9	0
61	Quantum Chemistry on a Quantum Computer: First Steps and Prospects. , 2009, , .		0