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 Tensor Network States. Frontiers in Physics, 2021, 8, .	1.0	13
2	Computational phase transitions: benchmarking Ising machines and quantum optimisers. Journal of Physics Complexity, 2021, 2, 011002.	0.9	0
3	Universal variational quantum computation. Physical Review A, 2021, 103, .	1.0	52
4	Abrupt transitions in variational quantum circuit training. Physical Review A, 2021, 103, .	1.0	26
5	Variational simulation of Schwinger's Hamiltonian with polarization qubits. Applied Physics Letters, 2021, 118, .	1.5	10
6	Topological classification of time-asymmetry in unitary quantum processes. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 235301.	0.7	6
7	On barren plateaus and cost function locality in variational quantum algorithms. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 245301.	0.7	54
8	Deep learning super-diffusion in multiplex networks. Journal of Physics Complexity, 2021, 2, 035011.	0.9	0
9	Unraveling the effects of multiscale network entanglement on empirical systems. Communications Physics, 2021, 4, .	2.0	10
10	Parameter concentrations in quantum approximate optimization. Physical Review A, 2021, 104, .	1.0	49
11	Numerical hardware-efficient variational quantum simulation of a soliton solution. Physical Review A, 2021, 104, .	1.0	10
12	Training saturation in layerwise quantum approximate optimization. Physical Review A, 2021, 104, .	1.0	20
13	Machine learning phase transitions with a quantum processor. Physical Review A, 2020, 102, .	1.0	39
14	Variational quantum eigensolver for frustrated quantum systems. Physical Review B, 2020, 102, .	1.1	37
15	On the universality of the quantum approximate optimization algorithm. Quantum Information Processing, 2020, 19, 1.	1.0	54
16	Certified variational quantum algorithms for eigenstate preparation. Physical Review A, 2020, 102, .	1.0	10
17	The urgent need for integrated science to fight COVID-19 pandemic and beyond. Journal of Translational Medicine, 2020, 18, 205.	1.8	128
18	Reachability Deficits in Quantum Approximate Optimization. Physical Review Letters, 2020, 124, 090504.	2.9	84

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19	Entanglement scaling in quantum advantage benchmarks. Physical Review A, 2020, 101, .	1.0	3
20	Experimental neural network enhanced quantum tomography. Npj Quantum Information, 2020, 6, .	2.8	109
21	Probing criticality in quantum spin chains with neural networks. Journal of Physics Complexity, 2020, 1, 03LT01.	0.9	5
22	Editorial: Adiabatic Quantum Computation. Frontiers in Physics, 2019, 7, .	1.0	2
23	Pushing Tensor Networks to the Limit. Physics Magazine, 2019, 12, .	0.1	0
24	Keep quantum computing global and open. Nature, 2019, 573, 190-191.	13.7	7
25	Complex networks from classical to quantum. Communications Physics, 2019, 2, .	2.0	92
26	Quantum technologies in Russia. Quantum Science and Technology, 2019, 4, 040501.	2.6	24
27	Variational learning of Grover's quantum search algorithm. Physical Review A, 2018, 98, .	1.0	38
28	Charged string tensor networks. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 2447-2449.	3.3	3
29	Quantum machine learning. Nature, 2017, 549, 195-202.	13.7	1,973
30	Spectral Entropies as Information-Theoretic Tools for Complex Network Comparison. Physical Review X, 2016, 6, .	2.8	66
31	Chiral quantum walks. Physical Review A, 2016, 93, .	1.0	36
32	Tensor Network Contractions for #SAT. Journal of Statistical Physics, 2015, 160, 1389-1404.	0.5	23
33	Hamiltonian gadgets with reduced resource requirements. Physical Review A, 2015, 91, .	1.0	19
34	Quantum Simulation of Helium Hydride Cation in a Solid-State Spin Register. ACS Nano, 2015, 9, 7769-7774.	7.3	113
35	Tensor networks and graphical calculus for open quantum systems. Quantum Information and Computation, 2015, 15, 759-811.	0.1	33
36	High-fidelity spin entanglement using optimal control. Nature Communications, 2014, 5, 3371.	5.8	244

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37	Community Detection in Quantum Complex Networks. Physical Review X, 2014, 4, .	2.8	28
38	Tensor network methods for invariant theory. Journal of Physics A: Mathematical and Theoretical, 2013, 46, 475301.	0.7	14
39	Quantum Transport Enhancement by Time-Reversal Symmetry Breaking. Scientific Reports, 2013, 3, 2361.	1.6	49
40	Degree Distribution in Quantum Walks on Complex Networks. Physical Review X, 2013, 3, .	2.8	40
41	Solving search problems by strongly simulating quantum circuits. Scientific Reports, 2013, 3, 1235.	1.6	11
42	Ground-state spin logic. Europhysics Letters, 2012, 99, 57004.	0.7	51
43	Undecidability in tensor network states. Physical Review A, 2012, 86, .	1.0	10
44	Algebraically contractible topological tensor network states. Journal of Physics A: Mathematical and Theoretical, 2012, 45, 015309.	0.7	21
45	Simulation of electronic structure Hamiltonians using quantum computers. Molecular Physics, 2011, 109, 735-750.	0.8	310
46	Categorical Tensor Network States. AIP Advances, 2011, 1, .	0.6	33
47	Adiabatic quantum simulators. AIP Advances, 2011, 1, .	0.6	57
48	Categorical quantum circuits. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 245304.	0.7	16
49	Racing a quantum computer through Minkowski spacetime. Journal of Physics: Conference Series, 2010, 229, 012020.	0.3	1
50	Fault Models for Quantum Mechanical Switching Networks. Journal of Electronic Testing: Theory and Applications (JETTA), 2010, 26, 499-511.	0.9	13
51	Towards quantum chemistry on a quantum computer. Nature Chemistry, 2010, 2, 106-111.	6.6	568
52	Quantum Chemistry on a Quantum Computer: First Steps and Prospects. , 2009, , .		0
53	Realizable Hamiltonians for universal adiabatic quantum computers. Physical Review A, 2008, 78, .	1.0	120
54	Publisher's Note: Nonperturbative<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi mathvariant="italic">k</mml:mi></mml:math>-body to two-body commuting conversion Hamiltonians and embedding problem instances into Ising spins [Phys. Rev. A77, 052331 (2008)]. Physical Review A, 2008, 77, .	1.0	2

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55	Nonperturbative<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi mathvariant="italic">k</mml:mi></mml:math>-body to two-body commuting conversion Hamiltonians and embedding problem instances into Ising spins. Physical Review A, 2008, 77, .	1.0	75
56	Sign- and Magnitude-Tunable Coupler for Superconducting Flux Qubits. Physical Review Letters, 2007, 98, .	2.9	89
57	Four-level realisation of 3-qubit reversible functions. IET Computers and Digital Techniques, 2007, 1, 382.	0.9	5
58	Extending classical test to quantum. , 2005, , .		2
59	Automated Test Pattern Generation for Quantum Circuits. PSU McNair Scholars Online Journal, 2005, 1, 38-47.	0.3	2
60	Test Generation and Fault Localization for Quantum Circuits. , 0, , .		27
61	Reachability Deficits in Quantum Approximate Optimization of Graph Problems. Quantum - the Open Journal for Quantum Science, 0, 5, 532.	0.0	20