

Adriano Barra

List of Publications by Year in descending order

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93
papers

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citations

236833

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315616

38
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95
all docs

95
docs citations

95
times ranked

1072
citing authors

#	ARTICLE	IF	CITATIONS
1	Multitasking Associative Networks. <i>Physical Review Letters</i> , 2012, 109, 268101.	2.9	90
2	On the equivalence of Hopfield networks and Boltzmann Machines. <i>Neural Networks</i> , 2012, 34, 1-9.	3.3	88
3	Towards the development of human immune-system-on-a-chip platforms. <i>Drug Discovery Today</i> , 2019, 24, 517-525.	3.2	75
4	Organs on chip approach: a tool to evaluate cancer-immune cells interactions. <i>Scientific Reports</i> , 2017, 7, 12737.	1.6	69
5	Cancer-driven dynamics of immune cells in a microfluidic environment. <i>Scientific Reports</i> , 2014, 4, 6639.	1.6	68
6	Phase diagram of restricted Boltzmann machines and generalized Hopfield networks with arbitrary priors. <i>Physical Review E</i> , 2018, 97, 022310.	0.8	54
7	Equilibrium statistical mechanics of bipartite spin systems. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2011, 44, 245002.	0.7	53
8	The Mean Field Ising Model through Interpolating Techniques. <i>Journal of Statistical Physics</i> , 2008, 132, 787.	0.5	52
9	Multi-Species Mean Field Spin Glasses. Rigorous Results. <i>Annales Henri Poincare</i> , 2015, 16, 691-708.	0.8	49
10	The Replica Symmetric Approximation of the Analogical Neural Network. <i>Journal of Statistical Physics</i> , 2010, 140, 784-796.	0.5	46
11	Extensive Parallel Processing on Scale-Free Networks. <i>Physical Review Letters</i> , 2014, 113, 238106.	2.9	46
12	Retrieval Capabilities of Hierarchical Networks: From Dyson to Hopfield. <i>Physical Review Letters</i> , 2015, 114, 028103.	2.9	46
13	PARAMETER EVALUATION OF A SIMPLE MEAN-FIELD MODEL OF SOCIAL INTERACTION. <i>Mathematical Models and Methods in Applied Sciences</i> , 2009, 19, 1427-1439.	1.7	43
14	Immune networks: multitasking capabilities near saturation. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2013, 46, 415003.	0.7	43
15	Phase transitions in restricted Boltzmann machines with generic priors. <i>Physical Review E</i> , 2017, 96, 042156.	0.8	40
16	Dreaming neural networks: Forgetting spurious memories and reinforcing pure ones. <i>Neural Networks</i> , 2019, 112, 24-40.	3.3	39
17	A mechanical approach to mean field spin models. <i>Journal of Mathematical Physics</i> , 2009, 50, .	0.5	36
18	An analysis of a large dataset on immigrant integration in Spain. The Statistical Mechanics perspective on Social Action. <i>Scientific Reports</i> , 2014, 4, 4174.	1.6	35

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19	Irreducible Free Energy Expansion and Overlaps Locking in Mean Field Spin Glasses. Journal of Statistical Physics, 2006, 123, 601-614.	0.5	34
20	A thermodynamic perspective of immune capabilities. Journal of Theoretical Biology, 2011, 287, 48-63.	0.8	34
21	Detecting cardiac pathologies via machine learning on heart-rate variability time series and related markers. Scientific Reports, 2020, 10, 8845.	1.6	34
22	A Hebbian approach to complex-network generation. Europhysics Letters, 2011, 94, 10002.	0.7	32
23	How glassy are neural networks?. Journal of Statistical Mechanics: Theory and Experiment, 2012, 2012, P07009.	0.9	32
24	Energy in self-directed B lymphocytes: A statistical mechanics perspective. Journal of Theoretical Biology, 2015, 375, 21-31.	0.8	28
25	Parallel retrieval of correlated patterns: From Hopfield networks to Boltzmann machines. Neural Networks, 2013, 38, 52-63.	3.3	27
26	A new mechanical approach to handle generalized Hopfield neural networks. Neural Networks, 2018, 106, 205-222.	3.3	27
27	Replica symmetry breaking in mean-field spin glasses through the Hamilton-Jacobi technique. Journal of Statistical Mechanics: Theory and Experiment, 2010, 2010, P09006.	0.9	26
28	Mean field spin glasses treated with PDE techniques. European Physical Journal B, 2013, 86, 1.	0.6	26
29	A statistical mechanics approach to autopoietic immune networks. Journal of Statistical Mechanics: Theory and Experiment, 2010, 2010, P07004.	0.9	25
30	A statistical mechanics approach to Granovetter theory. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 3017-3026.	1.2	24
31	Mean field bipartite spin models treated with mechanical techniques. European Physical Journal B, 2014, 87, 1.	0.6	21
32	Stochastic dynamics for idiotypic immune networks. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 5903-5911.	1.2	20
33	Notes on stochastic (bio)-logic gates: computing with allosteric cooperativity. Scientific Reports, 2015, 5, 9415.	1.6	20
34	Neural Networks Retrieving Boolean Patterns in a Sea of Gaussian Ones. Journal of Statistical Physics, 2017, 168, 1085-1104.	0.5	19
35	Neural Networks with a Redundant Representation: Detecting the Undetectable. Physical Review Letters, 2020, 124, 028301.	2.9	19
36	About the ergodic regime in the analogical Hopfield neural networks: Moments of the partition function. Journal of Mathematical Physics, 2008, 49, 125217.	0.5	18

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37	Toward a quantitative approach to migrants integration. <i>Europhysics Letters</i> , 2010, 89, 68001.	0.7	18
38	Generalized Guerra's interpolation schemes for dense associative neural networks. <i>Neural Networks</i> , 2020, 128, 254-267.	3.3	18
39	Annealing and Replica-Symmetry in Deep Boltzmann Machines. <i>Journal of Statistical Physics</i> , 2020, 180, 665-677.	0.5	18
40	Hierarchical neural networks perform both serial and parallel processing. <i>Neural Networks</i> , 2015, 66, 22-35.	3.3	17
41	The emergence of a concept in shallow neural networks. <i>Neural Networks</i> , 2022, 148, 232-253.	3.3	17
42	Criticality in diluted ferromagnets. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2008, 2008, P10003.	0.9	16
43	Machine learning and statistical physics: preface. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2020, 53, 500401.	0.7	16
44	Interpolating the Sherrington-Kirkpatrick replica trick. <i>Philosophical Magazine</i> , 2012, 92, 78-97.	0.7	15
45	About a solvable mean field model of a Gaussian spin glass. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2014, 47, 155002.	0.7	15
46	Stability properties and probability distributions of multi-overlaps in dilute spin glasses. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2007, 2007, P08025-P08025.	0.9	14
47	Mean-field cooperativity in chemical kinetics. <i>Theoretical Chemistry Accounts</i> , 2012, 131, 1.	0.5	14
48	Collective behaviours: from biochemical kinetics to electronic circuits. <i>Scientific Reports</i> , 2013, 3, 3458.	1.6	14
49	Notes on the p-spin glass studied via Hamilton-Jacobi and smooth-cavity techniques. <i>Journal of Mathematical Physics</i> , 2012, 53, .	0.5	13
50	A stochastic approach for quantifying immigrant integration: the Spanish test case. <i>New Journal of Physics</i> , 2014, 16, 103034.	1.2	13
51	On quantum and relativistic mechanical analogues in mean-field spin models. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2014, 470, 20140589.	1.0	13
52	Exact solution of the van der Waals model in the critical region. <i>Annals of Physics</i> , 2015, 359, 290-299.	1.0	13
53	Metastable states in the hierarchical Dyson model drive parallel processing in the hierarchical Hopfield network. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2015, 48, 015001.	0.7	13
54	Complete integrability of information processing by biochemical reactions. <i>Scientific Reports</i> , 2016, 6, 36314.	1.6	13

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55	Dreaming neural networks: rigorous results. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2019, 2019, 083503.	0.9	13
56	Replica symmetry breaking in neural networks: a few steps toward rigorous results. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2020, 53, 415005.	0.7	13
57	Application of a Stochastic Modeling to Assess the Evolution of Tuberculous and Non-Tuberculous Mycobacterial Infection in Patients Treated with Tumor Necrosis Factor Inhibitors. <i>PLoS ONE</i> , 2013, 8, e55017.	1.1	13
58	Can persistent Epstein-Barr virus infection induce chronic fatigue syndrome as a Pavlov reflex of the immune response?. <i>Journal of Biological Dynamics</i> , 2012, 6, 740-762.	0.8	12
59	Parallel processing in immune networks. <i>Physical Review E</i> , 2013, 87, 042701.	0.8	12
60	On the effective initialisation for restricted Boltzmann machines via duality with Hopfield model. <i>Neural Networks</i> , 2021, 143, 314-326.	3.3	12
61	Equilibrium statistical mechanics on correlated random graphs. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2011, 2011, P02027.	0.9	10
62	Retrieving infinite numbers of patterns in a spin-glass model of immune networks. <i>Europhysics Letters</i> , 2017, 117, 28003.	0.7	10
63	Positive-overlap transition and critical exponents in mean field spin glasses. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2006, 2006, P11015-P11015.	0.9	9
64	Organization and evolution of synthetic idiotypic networks. <i>Physical Review E</i> , 2012, 85, 051909.	0.8	9
65	Free-Energy Bounds for Hierarchical Spin Models. <i>Journal of Statistical Physics</i> , 2014, 155, 211-222.	0.5	9
66	Topological properties of hierarchical networks. <i>Physical Review E</i> , 2015, 91, 062807.	0.8	9
67	Multitasking attractor networks with neuronal threshold noise. <i>Neural Networks</i> , 2014, 49, 19-29.	3.3	8
68	Social interaction effects on immigrant integration. <i>Palgrave Communications</i> , 2018, 4, .	4.7	8
69	Free energies of Boltzmann machines: self-averaging, annealed and replica symmetric approximations in the thermodynamic limit. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2019, 2019, 033301.	0.9	8
70	A statistical inference approach to reconstruct intercellular interactions in cell migration experiments. <i>Science Advances</i> , 2020, 6, eaay2103.	4.7	8
71	Emerging Heterogeneities in Italian Customs and Comparison with Nearby Countries. <i>PLoS ONE</i> , 2015, 10, e0144643.	1.1	7
72	Fully Automated Computational Approach for Precisely Measuring Organelle Acidification with Optical pH Sensors. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 18133-18149.	4.0	7

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73	Overlap fluctuations from the Boltzmann random overlap structure. <i>Journal of Mathematical Physics</i> , 2006, 47, 103305.	0.5	6
74	Notes on ferromagnetic p -spin and REM. <i>Mathematical Methods in the Applied Sciences</i> , 2009, 32, 783-797.	1.2	6
75	Notes on ferromagnetic diluted p -spin model. <i>Reports on Mathematical Physics</i> , 2011, 68, 1-22.	0.4	6
76	Critical behavior of mean-field spin glasses on a dilute random graph. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2008, 41, 215005.	0.7	5
77	The relativistic Hopfield network: Rigorous results. <i>Journal of Mathematical Physics</i> , 2019, 60, 033302.	0.5	4
78	New perspectives in the equilibrium statistical mechanics approach to social and economic sciences. <i>Modeling and Simulation in Science, Engineering and Technology</i> , 2010, , 137-174.	0.4	4
79	Outperforming RBM Feature-Extraction Capabilities by "Dreaming" Mechanism. <i>IEEE Transactions on Neural Networks and Learning Systems</i> , 2024, 35, 1172-1181.	7.2	4
80	On the mean-field spin glass transition. <i>European Physical Journal B</i> , 2008, 64, 119-124.	0.6	3
81	Dilution robustness for mean field ferromagnets. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2009, 2009, P03028.	0.9	3
82	DRIVEN TRANSITIONS AT THE ONSET OF ERGODICITY BREAKING IN GAUGE-INVARIANT COMPLEX NETWORKS. <i>International Journal of Modern Physics B</i> , 2010, 24, 5995-6011.	1.0	3
83	Spin glass polynomial identities from entropic constraints. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2012, 45, 485001.	0.7	3
84	Notes on the Polynomial Identities in Random Overlap Structures. <i>Journal of Statistical Physics</i> , 2012, 147, 351-374.	0.5	3
85	Assessing the role of migration as trade-facilitator using the statistical mechanics of cooperative systems. <i>Palgrave Communications</i> , 2016, 2, .	4.7	3
86	Complex Reaction Kinetics in Chemistry: A Unified Picture Suggested by Mechanics in Physics. <i>Complexity</i> , 2018, 2018, 1-16.	0.9	3
87	A NUMERICAL INVESTIGATION OF THE JAMMING TRANSITION IN TRAFFIC FLOW ON DILUTED PLANAR NETWORKS. <i>International Journal of Modern Physics B</i> , 2010, 24, 6351-6363.	1.0	2
88	Analogue neural networks on correlated random graphs. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2012, 45, 365001.	0.7	2
89	On the Marchenko-Pastur law in analog bipartite spin-glasses. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2019, 52, 254002.	0.7	2
90	FLUCTUATIONS INDUCE TRANSITIONS IN FRUSTRATED SPARSE NETWORKS. <i>Fluctuation and Noise Letters</i> , 2008, 08, L341-L348.	1.0	1

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91	An evolutionary game model for behavioral gambit of loyalists: Global awareness and risk-aversion. Europhysics Letters, 2018, 121, 38001.	0.7	1
92	Ferromagnetic Models for Cooperative Behavior: Revisiting Universality in Complex Phenomena. Springer INdAM Series, 2014, , 73-86.	0.4	0
93	Some Thoughts on the Ontogenesis in B-Cell Immune Networks. Springer Proceedings in Mathematics and Statistics, 2014, , 71-79.	0.1	0