Pankaj Mehta

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/7798821/publications.pdf

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49	4,305	201674	206112
papers	citations	27 h-index	48 g-index

60	60	60	5225
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Emergent simplicity in microbial community assembly. Science, 2018, 361, 469-474.	12.6	706
2	A high-bias, low-variance introduction to Machine Learning for physicists. Physics Reports, 2019, 810, 1-124.	25.6	607
3	Metabolic Resource Allocation in Individual Microbes Determines Ecosystem Interactions and Spatial Dynamics. Cell Reports, 2014, 7, 1104-1115.	6.4	428
4	Identifying Keystone Species in the Human Gut Microbiome from Metagenomic Timeseries Using Sparse Linear Regression. PLoS ONE, 2014, 9, e102451.	2.5	273
5	Reinforcement Learning in Different Phases of Quantum Control. Physical Review X, 2018, 8, .	8.9	192
6	A quantitative comparison of sRNAâ€based and proteinâ€based gene regulation. Molecular Systems Biology, 2008, 4, 221.	7.2	176
7	Energetic costs of cellular computation. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 17978-17982.	7.1	172
8	Information processing and signal integration in bacterial quorum sensing. Molecular Systems Biology, 2009, 5, 325.	7.2	165
9	The transition between the niche and neutral regimes in ecology. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 13111-13116.	7.1	145
10	Available energy fluxes drive a transition in the diversity, stability, and functional structure of microbial communities. PLoS Computational Biology, 2019, 15, e1006793.	3.2	101
11	Epigenetic Landscapes Explain Partially Reprogrammed Cells and Identify Key Reprogramming Genes. PLoS Computational Biology, 2014, 10, e1003734.	3.2	100
12	Zipfâ€™s Law and Criticality in Multivariate Data without Fine-Tuning. Physical Review Letters, 2014, 113, 068102.	7.8	88
13	Emergence of a Stage-Dependent Human Liver Disease Signature with Directed Differentiation of Alpha-1 Antitrypsin-Deficient iPS Cells. Stem Cell Reports, 2015, 4, 873-885.	4.8	77
14	Thermodynamics of Statistical Inference by Cells. Physical Review Letters, 2014, 113, 148103.	7.8	75
15	Defective glycosylation and multisystem abnormalities characterize the primary immunodeficiency XMEN disease. Journal of Clinical Investigation, 2019, 130, 507-522.	8.2	74
16	From intracellular signaling to population oscillations: bridging sizeâ€and timeâ€scales in collective behavior. Molecular Systems Biology, 2015, 11, 779.	7.2	56
17	Statistical physics of community ecology: a cavity solution to MacArthurâ€™s consumer resource model. Journal of Statistical Mechanics: Theory and Experiment, 2018, 2018, 033406.	2.3	56
18	A minimal model for microbial biodiversity can reproduce experimentally observed ecological patterns. Scientific Reports, 2020, 10, 3308.	3.3	56

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19	Exponential sensitivity of noise-driven switching in genetic networks. Physical Biology, 2008, 5, 026005.	1.8	51
20	The in vivo genetic program of murine primordial lung epithelial progenitors. Nature Communications, 2020, 11, 635.	12.8	46
21	Dynamical quorum-sensing in oscillators coupled through an external medium. Physica D: Nonlinear Phenomena, 2012, 241, 1782-1788.	2.8	44
22	Thyroid Progenitors Are Robustly Derived from Embryonic Stem Cells through Transient, Developmental Stage-Specific Overexpression of Nkx2-1. Stem Cell Reports, 2017, 8, 216-225.	4.8	44
23	Glassy Phase of Optimal Quantum Control. Physical Review Letters, 2019, 122, 020601.	7.8	41
24	Two-Dimensionality of Yeast Colony Expansion Accompanied by Pattern Formation. PLoS Computational Biology, 2014, 10, e1003979.	3.2	40
25	Effect of Resource Dynamics on Species Packing in Diverse Ecosystems. Physical Review Letters, 2020, 125, 048101.	7.8	39
26	Modeling oscillations and spiral waves inDictyosteliumpopulations. Physical Review E, 2015, 91, 062711.	2.1	36
27	Nonlinear Midinfrared Photothermal Spectroscopy Using Zharov Splitting and Quantum Cascade Lasers. ACS Photonics, 2014, 1, 696-702.	6.6	32
28	Intrinsic Noise of microRNA-Regulated Genes and the ceRNA Hypothesis. PLoS ONE, 2013, 8, e72676.	2.5	32
29	Landauer in the Age of Synthetic Biology: Energy Consumption and Information Processing in Biochemical Networks. Journal of Statistical Physics, 2016, 162, 1153-1166.	1.2	31
30	The Community Simulator: A Python package for microbial ecology. PLoS ONE, 2020, 15, e0230430.	2.5	31
31	Approaching the molecular origins of collective dynamics in oscillating cell populations. Current Opinion in Genetics and Development, 2010, 20, 574-580.	3.3	26
32	The Minimum Environmental Perturbation Principle: A New Perspective on Niche Theory. American Naturalist, 2020, 196, 291-305.	2.1	26
33	Diverse communities behave like typical random ecosystems. Physical Review E, 2021, 104, 034416.	2.1	26
34	Nonequilibrium Quantum Impurities: From Entropy Production to Information Theory. Physical Review Letters, 2008, 100, 086804.	7.8	21
35	Analytically tractable model for community ecology with many species. Physical Review E, 2016, 94, 022423.	2.1	19
36	Identifying feasible operating regimes for early T-cell recognition: The speed, energy, accuracy trade-off in kinetic proofreading and adaptive sorting. PLoS ONE, 2018, 13, e0202331.	2.5	18

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37	Constrained optimization as ecological dynamics with applications to random quadratic programming in high dimensions. Physical Review E, 2019, 99, 052111.	2.1	17
38	Kuramoto model with coupling through an external medium. Chaos, 2012, 22, 043139.	2.5	15
39	Bayesian feature selection for high-dimensional linear regression via the Ising approximation with applications to genomics. Bioinformatics, 2015, 31, 1754-1761.	4.1	15
40	Broken symmetry in a two-qubit quantum control landscape. Physical Review A, 2018, 97, .	2.5	15
41	Memorizing without overfitting: Bias, variance, and interpolation in overparameterized models. Physical Review Research, 2022, 4, .	3.6	14
42	Cellular reprogramming dynamics follow a simple 1D reaction coordinate. Physical Biology, 2018, 15, 016001.	1.8	13
43	Statistical Mechanics of Transcription-Factor Binding Site Discovery Using Hidden Markov Models. Journal of Statistical Physics, 2011, 142, 1187-1205.	1.2	9
44	Bayesian Feature Selection with Strongly Regularizing Priors Maps to the Ising Model. Neural Computation, 2015, 27, 2411-2422.	2.2	6
45	Thermodynamic Paradigm for Solution Demixing Inspired by Nuclear Transport in Living Cells. Physical Review Letters, 2017, 118, 158101.	7.8	4
46	Tregs self-organize into a computing ecosystem and implement a sophisticated optimization algorithm for mediating immune response. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, e2011709118.	7.1	4
47	Machine learning as ecology. Journal of Physics A: Mathematical and Theoretical, 2020, 53, 334001.	2.1	4
48	Spatial gradient sensing and chemotaxis via excitability in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="italic">Dictyostelium</mml:mi></mml:mrow><mml:mo>Â</mml:mo><mml:mrow><mml:mi mathvariant="italic">discoideum</mml:mi></mml:mrow></mml:math>. Physical Review E, 2020, 101, 062410.	2.1	3
49	Arnold tongues in oscillator systems with nonuniform spatial driving. Physical Review E, 2021, 103, 042211.	2.1	0