

Pankaj Mehta

List of Publications by Year in descending order

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Version: 2024-02-01

49
papers

4,305
citations

201674

27
h-index

206112

48
g-index

60
all docs

60
docs citations

60
times ranked

5225
citing authors

#	ARTICLE	IF	CITATIONS
1	Memorizing without overfitting: Bias, variance, and interpolation in overparameterized models. <i>Physical Review Research</i> , 2022, 4, .	3.6	14
2	Arnold tongues in oscillator systems with nonuniform spatial driving. <i>Physical Review E</i> , 2021, 103, 042211.	2.1	0
3	Diverse communities behave like typical random ecosystems. <i>Physical Review E</i> , 2021, 104, 034416.	2.1	26
4	Tregs self-organize into a computing ecosystem and implement a sophisticated optimization algorithm for mediating immune response. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, e2011709118.	7.1	4
5	Effect of Resource Dynamics on Species Packing in Diverse Ecosystems. <i>Physical Review Letters</i> , 2020, 125, 048101.	7.8	39
6	The Minimum Environmental Perturbation Principle: A New Perspective on Niche Theory. <i>American Naturalist</i> , 2020, 196, 291-305.	2.1	26
7	Spatial gradient sensing and chemotaxis via excitability in $\langle \text{Dictyostelium} \hat{\Delta} \text{discoideum} \rangle$. <i>Physical Review E</i> , 2020, 101, 062410.	2.1	3
8	The Community Simulator: A Python package for microbial ecology. <i>PLoS ONE</i> , 2020, 15, e0230430.	2.5	31
9	The in vivo genetic program of murine primordial lung epithelial progenitors. <i>Nature Communications</i> , 2020, 11, 635.	12.8	46
10	A minimal model for microbial biodiversity can reproduce experimentally observed ecological patterns. <i>Scientific Reports</i> , 2020, 10, 3308.	3.3	56
11	Machine learning as ecology. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2020, 53, 334001.	2.1	4
12	Constrained optimization as ecological dynamics with applications to random quadratic programming in high dimensions. <i>Physical Review E</i> , 2019, 99, 052111.	2.1	17
13	Available energy fluxes drive a transition in the diversity, stability, and functional structure of microbial communities. <i>PLoS Computational Biology</i> , 2019, 15, e1006793.	3.2	101
14	A high-bias, low-variance introduction to Machine Learning for physicists. <i>Physics Reports</i> , 2019, 810, 1-124.	25.6	607
15	Glassy Phase of Optimal Quantum Control. <i>Physical Review Letters</i> , 2019, 122, 020601.	7.8	41
16	Defective glycosylation and multisystem abnormalities characterize the primary immunodeficiency XMEN disease. <i>Journal of Clinical Investigation</i> , 2019, 130, 507-522.	8.2	74
17	Statistical physics of community ecology: a cavity solution to MacArthur's consumer resource model. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2018, 2018, 033406.	2.3	56
18	Cellular reprogramming dynamics follow a simple 1D reaction coordinate. <i>Physical Biology</i> , 2018, 15, 016001.	1.8	13

#	ARTICLE	IF	CITATIONS
19	Reinforcement Learning in Different Phases of Quantum Control. <i>Physical Review X</i> , 2018, 8, .	8.9	192
20	Identifying feasible operating regimes for early T-cell recognition: The speed, energy, accuracy trade-off in kinetic proofreading and adaptive sorting. <i>PLoS ONE</i> , 2018, 13, e0202331.	2.5	18
21	Broken symmetry in a two-qubit quantum control landscape. <i>Physical Review A</i> , 2018, 97, .	2.5	15
22	Emergent simplicity in microbial community assembly. <i>Science</i> , 2018, 361, 469-474.	12.6	706
23	Thyroid Progenitors Are Robustly Derived from Embryonic Stem Cells through Transient, Developmental Stage-Specific Overexpression of <i>Nkx2-1</i> . <i>Stem Cell Reports</i> , 2017, 8, 216-225.	4.8	44
24	Thermodynamic Paradigm for Solution Demixing Inspired by Nuclear Transport in Living Cells. <i>Physical Review Letters</i> , 2017, 118, 158101.	7.8	4
25	Analytically tractable model for community ecology with many species. <i>Physical Review E</i> , 2016, 94, 022423.	2.1	19
26	Landauer in the Age of Synthetic Biology: Energy Consumption and Information Processing in Biochemical Networks. <i>Journal of Statistical Physics</i> , 2016, 162, 1153-1166.	1.2	31
27	Modeling oscillations and spiral waves in <i>Dictyostelium</i> populations. <i>Physical Review E</i> , 2015, 91, 062711.	2.1	36
28	Bayesian feature selection for high-dimensional linear regression via the Ising approximation with applications to genomics. <i>Bioinformatics</i> , 2015, 31, 1754-1761.	4.1	15
29	Emergence of a Stage-Dependent Human Liver Disease Signature with Directed Differentiation of Alpha-1 Antitrypsin-Deficient iPSCs. <i>Stem Cell Reports</i> , 2015, 4, 873-885.	4.8	77
30	Bayesian Feature Selection with Strongly Regularizing Priors Maps to the Ising Model. <i>Neural Computation</i> , 2015, 27, 2411-2422.	2.2	6
31	From intracellular signaling to population oscillations: bridging size and time scales in collective behavior. <i>Molecular Systems Biology</i> , 2015, 11, 779.	7.2	56
32	Identifying Keystone Species in the Human Gut Microbiome from Metagenomic Timeseries Using Sparse Linear Regression. <i>PLoS ONE</i> , 2014, 9, e102451.	2.5	273
33	Epigenetic Landscapes Explain Partially Reprogrammed Cells and Identify Key Reprogramming Genes. <i>PLoS Computational Biology</i> , 2014, 10, e1003734.	3.2	100
34	Two-Dimensionality of Yeast Colony Expansion Accompanied by Pattern Formation. <i>PLoS Computational Biology</i> , 2014, 10, e1003979.	3.2	40
35	Zipf's Law and Criticality in Multivariate Data without Fine-Tuning. <i>Physical Review Letters</i> , 2014, 113, 068102.	7.8	88
36	Nonlinear Midinfrared Photothermal Spectroscopy Using Zharov Splitting and Quantum Cascade Lasers. <i>ACS Photonics</i> , 2014, 1, 696-702.	6.6	32

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37	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
38	Thermodynamics of Statistical Inference by Cells. Physical Review Letters, 2014, 113, 148103.	7.8	75
39	Metabolic Resource Allocation in Individual Microbes Determines Ecosystem Interactions and Spatial Dynamics. Cell Reports, 2014, 7, 1104-1115.	6.4	428
40	Intrinsic Noise of microRNA-Regulated Genes and the ceRNA Hypothesis. PLoS ONE, 2013, 8, e72676.	2.5	32
41	Kuramoto model with coupling through an external medium. Chaos, 2012, 22, 043139.	2.5	15
42	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
43	Dynamical quorum-sensing in oscillators coupled through an external medium. Physica D: Nonlinear Phenomena, 2012, 241, 1782-1788.	2.8	44
44	Statistical Mechanics of Transcription-Factor Binding Site Discovery Using Hidden Markov Models. Journal of Statistical Physics, 2011, 142, 1187-1205.	1.2	9
45	Approaching the molecular origins of collective dynamics in oscillating cell populations. Current Opinion in Genetics and Development, 2010, 20, 574-580.	3.3	26
46	Information processing and signal integration in bacterial quorum sensing. Molecular Systems Biology, 2009, 5, 325.	7.2	165
47	A quantitative comparison of sRNA-based and protein-based gene regulation. Molecular Systems Biology, 2008, 4, 221.	7.2	176
48	Exponential sensitivity of noise-driven switching in genetic networks. Physical Biology, 2008, 5, 026005.	1.8	51
49	Nonequilibrium Quantum Impurities: From Entropy Production to Information Theory. Physical Review Letters, 2008, 100, 086804.	7.8	21