

# Mikhail Prokopenko

## List of Articles by Year in descending order

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97

PR articles

2,991

PR citations

181881

27

PR h-index

163917

52

g-index

167

documents

4448

doc citations

164512

30

h-index

6284

citing authors

#	ARTICLE	IF	CITATIONS
1	Biological arrow of time: emergence of tangled information hierarchies and self-modelling dynamics. <i>Journal of Physics Complexity</i> , 2025, 6, 015006.	1.4	4
2	Emergence of shield immunity during spatial contagions. <i>npj complexity</i> , 2025, 2, .	0.0	0
3	Multi-scale phylodynamic modelling of rapid punctuated pathogen evolution. <i>PLoS Computational Biology</i> , 2025, 21, e1013295.	3.1	0
4	Bounded risk disposition explains Turing patterns and tipping points during spatial contagions. <i>Royal Society Open Science</i> , 2024, 11, .	2.4	2
5	An Ansatz for computational undecidability in RNA automata. <i>Artificial Life</i> , 2023, , 1-28.	0.8	1
6	Bounded strategic reasoning explains crisis emergence in multi-agent market games. <i>Royal Society Open Science</i> , 2023, 10, .	2.4	1
7	Persistence of the Omicron variant of SARS-CoV-2 in Australia: The impact of fluctuating social distancing. <i>PLOS Global Public Health</i> , 2023, 3, e0001427.	2.1	12
8	Bounded rationality for relaxing best response and mutual consistency: the quantal hierarchy model of decision making. <i>Theory and Decision</i> , 2023, 96, 71-111.	0.4	3
9	Genome entropy and network centrality contrast exploration and exploitation in evolution of foodborne pathogens. <i>Physical Biology</i> , 2023, 20, 046006.	1.6	1
10	Measuring unequal distribution of pandemic severity across census years, variants of concern and interventions. <i>Population Health Metrics</i> , 2023, 21, .	2.2	9
11	Genome-wide networks reveal emergence of epidemic strains of <i>Salmonella Enteritidis</i> . <i>International Journal of Infectious Diseases</i> , 2022, 117, 65-73.	2.1	11
12	Simulating Transmission Scenarios of the Delta Variant of SARS-CoV-2 in Australia. <i>Frontiers in Public Health</i> , 2022, 10, .	2.7	21
13	The effects of local homogeneity assumptions in metapopulation models of infectious disease. <i>Royal Society Open Science</i> , 2022, 9, .	2.4	14
14	Impacts of climate change and extreme weather on food supply chains cascade across sectors and regions in Australia. <i>Nature Food</i> , 2022, 3, 631-643.	14.6	80
15	A framework for considering the utility of models when facing tough decisions in public health: a guideline for policy-makers. <i>Health Research Policy and Systems</i> , 2022, 20, .	2.5	17
16	A general framework for optimising cost-effectiveness of pandemic response under partial intervention measures. <i>Scientific Reports</i> , 2022, 12, .	3.4	12
17	Diffusive Resettlement: Irreversible Urban Transitions in Closed Systems. <i>Entropy</i> , 2021, 23, 66.	1.7	5
18	The impact of social influence in Australian real estate: market forecasting with a spatial agent-based model. <i>Journal of Economic Interaction and Coordination</i> , 2021, 18, 5-57.	0.6	19

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19	A Maximum Entropy Model of Bounded Rational Decision-Making with Prior Beliefs and Market Feedback. <i>Entropy</i> , 2021, 23, 669.	1.7	16
20	Explaining herding and volatility in the cyclical price dynamics of urban housing markets using a large-scale agent-based model. <i>SN Business &amp; Economics</i> , 2021, 1, .	0.9	23
21	Thermodynamic Efficiency of Interactions in Self-Organizing Systems. <i>Entropy</i> , 2021, 23, 757.	1.7	11
22	Revealing configurational attractors in the evolution of modern Australian and US cities. <i>Chaos, Solitons and Fractals</i> , 2021, 148, 111079.	4.8	1
23	How will mass-vaccination change COVID-19 lockdown requirements in Australia?. <i>The Lancet Regional Health - Western Pacific</i> , 2021, 14, 100224.	3.4	37
24	The Polycentric Dynamics of Melbourne and Sydney: suburb attractiveness divides a city at the home ownership level. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2021, 477, .	2.0	8
25	Beyond COVID-19: network science and sustainable exit strategies. <i>Journal of Physics Complexity</i> , 2021, 2, 021001.	1.4	15
26	Modelling transmission and control of the COVID-19 pandemic in Australia. <i>Nature Communications</i> , 2020, 11, .	13.7	455
27	Structure-Preserving Imitation Learning With Delayed Reward: An Evaluation Within the RoboCup Soccer 2D Simulation Environment. <i>Frontiers in Robotics and AI</i> , 2020, 7, .	1.9	6
28	Impact of network assortativity on epidemic and vaccination behaviour. <i>Chaos, Solitons and Fractals</i> , 2020, 140, 110143.	4.8	26
29	Interfering with influenza: nonlinear coupling of reactive and static mitigation strategies. <i>Journal of the Royal Society Interface</i> , 2020, 17, 20190728.	3.2	18
30	City structure shapes directional resettlement flows in Australia. <i>Scientific Reports</i> , 2020, 10, .	3.4	18
31	Population mobility induced phase separation in SIS epidemic and social dynamics. <i>Scientific Reports</i> , 2020, 10, .	3.4	16
32	Revealing COVID-19 transmission in Australia by SARS-CoV-2 genome sequencing and agent-based modeling. <i>Nature Medicine</i> , 2020, 26, 1398-1404.	33.0	316
33	Global socio-economic losses and environmental gains from the Coronavirus pandemic. <i>PLoS ONE</i> , 2020, 15, e0235654.	2.3	269
34	Game theoretic modelling of infectious disease dynamics and intervention methods: a review. <i>Journal of Biological Dynamics</i> , 2020, 14, 57-89.	1.9	149
35	Phase Transitions in Spatial Connectivity during Influenza Pandemics. <i>Entropy</i> , 2020, 22, 133.	1.7	14
36	Inferring evolutionary pathways and directed genotype networks of foodborne pathogens. <i>PLoS Computational Biology</i> , 2020, 16, e1008401.	3.1	5

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37	The Effects of Imitation Dynamics on Vaccination Behaviours in SIR-Network Model. International Journal of Environmental Research and Public Health, 2019, 16, 2477.	2.9	33
38	Irreversibility and emergent structure in active matter. Physical Review E, 2019, 100, .	2.1	34
39	Creating a surrogate commuter network from Australian Bureau of Statistics census data. Scientific Data, 2019, 6, .	5.7	25
40	Network properties of salmonella epidemics. Scientific Reports, 2019, 9, .	3.4	10
41	Dynamic resettlement as a mechanism of phase transitions in urban configurations. Physical Review E, 2019, 99, .	2.1	16
42	Conformity in the collective: differences in hunger affect individual and group behavior in a shoaling fish. Behavioral Ecology, 2019, 30, 968-974.	1.8	25
43	Self-referential basis of undecidable dynamics: From the Liar paradox and the halting problem to the edge of chaos. Physics of Life Reviews, 2019, 31, 134-156.	2.3	25
44	Informative and misinformative interactions in a school of fish. Swarm Intelligence, 2018, 12, 283-305.	1.1	64
45	Thermodynamics and computation during collective motion near criticality. Physical Review E, 2018, 97, .	2.1	24
46	Cohesion, order and information flow in the collective motion of mixed-species shoals. Royal Society Open Science, 2018, 5, 181132.	2.4	53
47	Minimising the Kullback-Leibler Divergence for Model Selection in Distributed Nonlinear Systems. Entropy, 2018, 20, 51.	1.7	21
48	Urbanization affects peak timing, prevalence, and bimodality of influenza pandemics in Australia: Results of a census-calibrated model. Science Advances, 2018, 4, .	10.9	72
49	Entropy balance and information processing in bipartite and nonbipartite composite systems. Physical Review E, 2018, 98, .	2.1	5
50	Computation by natural systems. Interface Focus, 2018, 8, 20180058.	3.0	6
51	On critical dynamics and thermodynamic efficiency of urban transformations. Royal Society Open Science, 2018, 5, 180863.	2.4	17
52	The demise of Angkor: Systemic vulnerability of urban infrastructure to climatic variations. Science Advances, 2018, 4, .	10.9	46
53	Thermodynamic efficiency of contagions: a statistical mechanical analysis of the SIS epidemic model. Interface Focus, 2018, 8, 20180036.	3.0	25
54	Investigating spatiotemporal dynamics and synchrony of influenza epidemics in Australia: An agent-based modelling approach. Simulation Modelling Practice and Theory, 2018, 87, 412-431.	3.9	76

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55	Fisher information and criticality in the Kuramoto model of nonidentical oscillators. <i>Physical Review E</i> , 2018, 98, .	2.1	10
56	Information ratchets exploiting spatially structured information reservoirs. <i>Physical Review E</i> , 2018, 98, .	2.1	3
57	Quantifying Long-Range Interactions and Coherent Structure in Multi-Agent Dynamics. <i>Artificial Life</i> , 2017, 23, 34-57.	0.8	21
58	Transfer entropy in continuous time, with applications to jump and neural spiking processes. <i>Physical Review E</i> , 2017, 95, .	2.1	59
59	Quantifying the impact of communication on performance in multi-agent teams. <i>Artificial Life and Robotics</i> , 2017, 22, 357-373.	0.7	6
60	Criticality and Information Dynamics in Epidemiological Models. <i>Entropy</i> , 2017, 19, 194.	1.7	36
61	Instability of Mixed Nash Equilibria in Generalised Hawk-Dove Game: A Project Conflict Management Scenario. <i>Games</i> , 2017, 8, 42.	0.4	1
62	An Information Criterion for Inferring Coupling of Distributed Dynamical Systems. <i>Frontiers in Robotics and AI</i> , 2016, 3, .	1.9	13
63	The social brain: scale-invariant layering of Erdős-Rényi networks in small-scale human societies. <i>Journal of the Royal Society Interface</i> , 2016, 13, 20160044.	3.2	7
64	Transfer entropy in physical systems and the arrow of time. <i>Physical Review E</i> , 2016, 94, .	2.1	34
65	Information thermodynamics of near-equilibrium computation. <i>Physical Review E</i> , 2015, 91, .	2.1	21
66	Zipf's Law: Balancing Signal Usage Cost and Communication Efficiency. <i>PLoS ONE</i> , 2015, 10, e0139475.	2.3	16
67	Fisher transfer entropy: quantifying the gain in transient sensitivity. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2015, 471, 20150610.	2.0	9
68	RoboCup Simulation Leagues: Enabling Replicable and Robust Investigation of Complex Robotic Systems. <i>IEEE Robotics and Automation Magazine</i> , 2015, 22, 140-146.	1.1	10
69	Feature Selection for Chemical Sensor Arrays Using Mutual Information. <i>PLoS ONE</i> , 2014, 9, e89840.	2.3	17
70	Grand Challenges for Computational Intelligence. <i>Frontiers in Robotics and AI</i> , 2014, 1, .	1.9	9
71	Transfer Entropy and Transient Limits of Computation. <i>Scientific Reports</i> , 2014, 4, .	3.4	62
72	Comparing dynamics of cascading failures between network-centric and power flow models. <i>International Journal of Electrical Power and Energy Systems</i> , 2013, 49, 369-379.	5.0	34

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73	On Thermodynamic Interpretation of Transfer Entropy. Entropy, 2013, 15, 524-543.	1.7	81
74	Are motorways rational from slime mould's point of view?. International Journal of Parallel, Emergent and Distributed Systems, 2013, 28, 230-248.	0.8	25
75	Percolation Centrality: Quantifying Graph-Theoretic Impact of Nodes during Percolation in Networks. PLoS ONE, 2013, 8, e53095.	2.3	165
76	Assortative mixing in directed biological networks. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2012, 9, 66-78.	2.9	86
77	Slime mould evaluation of Australian motorways. International Journal of Parallel, Emergent and Distributed Systems, 2012, 27, 275-295.	0.8	24
78	Quantifying and Tracing Information Cascades in Swarms. PLoS ONE, 2012, 7, e40084.	2.3	74
79	Local measures of information storage in complex distributed computation. Information Sciences, 2012, 208, 39-54.	6.3	161
80	On congruity of nodes and assortative information content in complex networks. Networks and Heterogeneous Media, 2012, 7, 441-461.	1.1	18
81	Complex Networks. Artificial Life, 2011, 17, 259-261.	0.8	7
82	Fisher Information at the Edge of Chaos in Random Boolean Networks. Artificial Life, 2011, 17, 315-329.	0.8	38
83	Relating Fisher information to order parameters. Physical Review E, 2011, 84, .	2.1	100
84	Information Dynamics in Small-World Boolean Networks. Artificial Life, 2011, 17, 293-314.	0.8	85
85	Information-driven self-organization: the dynamical system approach to autonomous robot behavior. Theory in Biosciences, 2011, 131, 161-179.	1.4	36
86	Coherent information structure in complex computation. Theory in Biosciences, 2011, 131, 193-203.	1.4	36
87	Information modification and particle collisions in distributed computation. Chaos, 2010, 20, .	2.6	112
88	Phase transitions in least-effort communications. Journal of Statistical Mechanics: Theory and Experiment, 2010, 2010, P11025.	2.0	23
89	Multivariate information-theoretic measures reveal directed information structure and task relevant changes in fMRI connectivity. Journal of Computational Neuroscience, 2010, 30, 85-107.	1.6	186
90	Information and Self-Organization: A Macroscopic Approach to Complex Systems, (3rd enlarged ed.). H. Haken. (2006, Springer.) â¬79.95 (hardcover), 262 pages. ISBN: 978-3-540-33021-9. Artificial Life, 2009, 15, 377-383.	0.8	4

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91	Decentralised decision making in heterogeneous teams using anonymous optimisation. Robotics and Autonomous Systems, 2009, 57, 310-320.	3.8	32
92	Stigmergic gene transfer and emergence of universal coding. HFSP Journal, 2009, 3, 317-327.	2.2	6
93	Local information transfer as a spatiotemporal filter for complex systems. Physical Review E, 2008, 77, .	2.1	238
94	A preferential semantics for causal reasoning about action. Annals of Mathematics and Artificial Intelligence, 2006, 46, 375-413.	0.6	2
95	On connectivity of reconfigurable impact networks in ageless aerospace vehicles. Robotics and Autonomous Systems, 2005, 53, 36-58.	3.8	26
96	Self-Organizing Hierarchies in Sensor and Communication Networks. Artificial Life, 2005, 11, 407-426.	0.8	23
97	Impact of opinion dynamics on recurrent pandemic waves: balancing risk aversion and peer pressure. Interface Focus, 0, 15, .	3.0	1