David J T Sumpter

List of Publications by Year
in descending order

72 papers	5,994 citations	126907 33 h-index	91884 69 g-index
75 all docs	75 docs citations	75 times ranked	4259 citing authors

#	Article	IF	Citations
1	Quantifying the structure and dynamics of fish shoals under predation threat in three dimensions. Behavioral Ecology, 2020, 31, 311-321.	2.2	42
2	Rapid evolution of coordinated and collective movement in response to artificial selection. Science Advances, 2020, 6, .	10.3	25
3	Last Night in Sweden? Using Gaussian Processes to Study Changing Demographics at the Level of Municipalities. European Journal of Crime, Criminal Law and Criminal Justice, 2020, 28, 46-75.	0.2	0
4	Phenotypic variability predicts decision accuracy in unicellular organisms. Proceedings of the Royal Society B: Biological Sciences, 2019, 286, 20182825.	2.6	17
5	Inferring the dynamics of rising radical right-wing party support using Gaussian processes. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20190145.	3.4	2
6	Using activity and sociability to characterize collective motion. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20170015.	4.0	25
7	Identifying Complex Dynamics in Social Systems. Sociological Methods and Research, 2018, 47, 103-135.	6.8	11
8	Brain size does not impact shoaling dynamics in unfamiliar groups of guppies (Poecilia reticulata). Behavioural Processes, 2018, 147, 13-20.	1.1	11
9	Choice modelling with Gaussian processes in the social sciences: A case study of neighbourhood choice in Stockholm. PLoS ONE, 2018, 13, e0206687.	2.5	5
10	Mathematical modeling reveals spontaneous emergence of self-replication in chemical reaction systems. Journal of Biological Chemistry, 2018, 293, 18854-18863.	3.4	21
11	Using Bayesian dynamical systems, model averaging and neural networks to determine interactions between socio-economic indicators. PLoS ONE, 2018, 13, e0196355.	2.5	4
12	Is the golden ratio a universal constant for self-replication?. PLoS ONE, 2018, 13, e0200601.	2.5	7
13	Insights into resource consumption, cross-feeding, system collapse, stability and biodiversity from an artificial ecosystem. Journal of the Royal Society Interface, 2017, 14, 20160816.	3.4	7
14	How predation shapes the social interaction rules of shoaling fish. Proceedings of the Royal Society B: Biological Sciences, 2017, 284, 20171126.	2.6	120
15	Local interactions and global properties of wild, free-ranging stickleback shoals. Royal Society Open Science, 2017, 4, 170043.	2.4	30
16	Body size affects the strength of social interactions and spatial organization of a schooling fish (Pseudomugil signifer). Royal Society Open Science, 2017, 4, 161056.	2.4	28
17	An efficient method for sorting and quantifying individual social traits based on groupâ€level behaviour. Methods in Ecology and Evolution, 2017, 8, 1735-1744.	5.2	8
18	The sustainable development oxymoron: quantifying and modelling the incompatibility of sustainable development goals. International Journal of Sustainable Development and World Ecology, 2017, 24, 457-470.	5.9	214

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19	Modelling optimal allocation of resources in the context of an incurable disease. PLoS ONE, 2017, 12, e0172401.	2.5	2
20	Setting development goals using stochastic dynamical system models. PLoS ONE, 2017, 12, e0171560.	2.5	7
21	Emergent Structural Mechanisms for High-Density Collective Motion Inspired by Human Crowds. Physical Review Letters, 2016, 117, 228301.	7.8	35
22	Collective selection of food patches in Drosophila. Journal of Experimental Biology, 2016, 219, 668-675.	1.7	55
23	Phenotypic variability in unicellular organisms: from calcium signalling to social behaviour. Proceedings of the Royal Society B: Biological Sciences, 2015, 282, 20152322.	2.6	24
24	Initiation and spread of escape waves within animal groups. Royal Society Open Science, 2015, 2, 140355.	2.4	91
25	Integration of Social Information by Human Groups. Topics in Cognitive Science, 2015, 7, 469-493.	1.9	13
26	Understanding Democracy and Development Traps Using a Data-Driven Approach. Big Data, 2015, 3, 22-33.	3.4	13
27	The Impact of Human Mobility on HIV Transmission in Kenya. PLoS ONE, 2015, 10, e0142805.	2.5	31
28	Bayesian Dynamical Systems Modelling in the Social Sciences. PLoS ONE, 2014, 9, e86468.	2.5	45
29	The Dynamics of Democracy, Development and Cultural Values. PLoS ONE, 2014, 9, e97856.	2.5	45
30	Symmetry Restoring Bifurcation in Collective Decision-Making. PLoS Computational Biology, 2014, 10, e1003960.	3.2	18
31	Solving the shepherding problem: heuristics for herding autonomous, interacting agents. Journal of the Royal Society Interface, 2014, 11, 20140719.	3.4	140
32	Flying insect swarms. Current Biology, 2014, 24, R828-R830.	3.9	14
33	Interaction rules underlying group decisions in homing pigeons. Journal of the Royal Society Interface, 2013, 10, 20130529.	3.4	82
34	Current-reinforced random walks for constructing transport networks. Journal of the Royal Society Interface, 2013, 10, 20120864.	3.4	30
35	The dynamics of audience applause. Journal of the Royal Society Interface, 2013, 10, 20130466.	3.4	57
36	Initiators, Leaders, and Recruitment Mechanisms in the Collective Movements of Damselfish. American Naturalist, 2013, 181, 748-760.	2.1	27

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37	Ant colonies outperform individuals when a sensory discrimination task is difficult but not when it is easy. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 13769-13773.	7.1	85
38	Multi-scale Inference of Interaction Rules in Animal Groups Using Bayesian Model Selection. PLoS Computational Biology, 2013, 9, e1002961.	3.2	39
39	How dancing honey bees keep track of changes: the role of inspector bees. Behavioral Ecology, 2012, 23, 588-596.	2.2	44
40	Individual Rules for Trail Pattern Formation in Argentine Ants (Linepithema humile). PLoS Computational Biology, 2012, 8, e1002592.	3.2	137
41	Visual attention and the acquisition of information in human crowds. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 7245-7250.	7.1	174
42	The modelling cycle for collective animal behaviour. Interface Focus, 2012, 2, 764-773.	3.0	90
43	Synergy and Group Size in Microbial Cooperation. American Naturalist, 2012, 180, 296-305.	2.1	69
44	The Dynamics, Causes and Possible Prevention of Hepatitis E Outbreaks. PLoS ONE, 2012, 7, e41135.	2.5	13
45	Six Predictions about the Decision Making of Animal and Human Groups. Managerial and Decision Economics, 2012, 33, 295-309.	2.5	18
46	Murmurations. Current Biology, 2012, 22, R112-R114.	3.9	26
47	Tuning positive feedback for signal detection in noisy dynamic environments. Journal of Theoretical Biology, 2012, 309, 88-95.	1.7	0
48	Multi-scale Inference of Interaction Rules in Animal Groups Using Bayesian Model Selection. PLoS Computational Biology, 2012, 8, e1002308.	3.2	10
49	Quorum Decision-Making in Foraging Fish Shoals. PLoS ONE, 2012, 7, e32411.	2.5	65
50	Moving calls: a vocal mechanism underlying quorum decisions in cohesive groups. Proceedings of the Royal Society B: Biological Sciences, 2011, 278, 1482-1488.	2.6	90
51	Collective Irrationality and Positive Feedback. PLoS ONE, 2011, 6, e18901.	2.5	27
52	Understanding Animal Group-Size Distributions. PLoS ONE, 2011, 6, e23438.	2.5	37
53	A first principles derivation of animal group size distributions. Journal of Theoretical Biology, 2011, 283, 35-43.	1.7	28
54	Structure and formation of ant transportation networks. Journal of the Royal Society Interface, 2011, 8, 1298-1306.	3.4	64

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55	Inferring the rules of interaction of shoaling fish. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 18726-18731.	7.1	459
56	Fast and accurate decisions through collective vigilance in fish shoals. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 2312-2315.	7.1	302
57	Optimisation in a natural system: Argentine ants solve the Towers of Hanoi. Journal of Experimental Biology, 2011, 214, 50-58.	1.7	81
58	Risk management in spatio-temporally varying field by true slime mold. Nonlinear Theory and Its Applications IEICE, 2010, 1, 26-36.	0.6	12
59	Inherent noise can facilitate coherence in collective swarm motion. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 5464-5469.	7.1	240
60	Peer selection in EU intergovernmental negotiations. Journal of European Public Policy, 2009, 16, 356-377.	4.0	1
61	Quorum responses and consensus decision making. Philosophical Transactions of the Royal Society B: Biological Sciences, 2009, 364, 743-753.	4.0	285
62	Group Behaviour: Leadership by Those in Need. Current Biology, 2009, 19, R325-R327.	3.9	11
63	Shape and efficiency of wood ant foraging networks. Behavioral Ecology and Sociobiology, 2009, 63, 451-460.	1.4	70
64	Information transfer in moving animal groups. Theory in Biosciences, 2008, 127, 177-186.	1.4	134
65	Consensus Decision Making by Fish. Current Biology, 2008, 18, 1773-1777.	3.9	231
66	EU institutional reforms. Journal of Policy Modeling, 2008, 30, 71-86.	3.1	4
67	Quorum decision-making facilitates information transfer in fish shoals. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 6948-6953.	7.1	395
68	What makes a honeybee scout?. Behavioral Ecology and Sociobiology, 2007, 61, 985-995.	1.4	58
69	From Compromise to Leadership in Pigeon Homing. Current Biology, 2006, 16, 2123-2128.	3.9	247
70	A tunable algorithm for collective decision-making. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 15906-15910.	7.1	131
71	Quorum sensing, recruitment, and collective decision-making during colony emigration by the ant Leptothorax albipennis. Behavioral Ecology and Sociobiology, 2002, 52, 117-127.	1.4	381
72	Explaining and Predicting the Rise of a Radical Right-Wing Party Using Gaussian Processes. SSRN Electronic Journal, 0, , .	0.4	1