Sergi Valverde

List of Publications by Year
in descending order

71 papers	4,150 citations	136885 32 h-index	133188 59 g-index
79 all docs	79 docs citations	79 times ranked	4433 citing authors

#	Article	IF	Citations
1	Data completenessâ€"the Achilles heel of drug-target networks. Nature Biotechnology, 2008, 26, 983-984.	9.4	290
2	Statistical structure of hostâ€"phage interactions. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, E288-97.	3.3	275
3	Phageâ€"bacteria infection networks. Trends in Microbiology, 2013, 21, 82-91.	3.5	273
4	TOPOLOGICAL VULNERABILITY OF THE EUROPEAN POWER GRID UNDER ERRORS AND ATTACKS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2007, 17, 2465-2475.	0.7	262
5	Scale-free networks from optimal design. Europhysics Letters, 2002, 60, 512-517.	0.7	241
6	Topological patterns in street networks of self-organized urban settlements. European Physical Journal B, 2006, 49, 513-522.	0.6	227
7	Robustness of the European power grids under intentional attack. Physical Review E, 2008, 77, 026102.	0.8	227
8	The topology of drugâ€"target interaction networks: implicit dependence on drug properties and target families. Molecular BioSystems, 2009, 5, 1051.	2.9	196
9	Information transfer and phase transitions in a model of internet traffic. Physica A: Statistical Mechanics and Its Applications, 2001, 289, 595-605.	1.2	173
10	Multi-scale structure and geographic drivers of cross-infection within marine bacteria and phages. ISME Journal, 2013, 7, 520-532.	4.4	155
11	Selection, tinkering, and emergence in complex networks. Complexity, 2002, 8, 20-33.	0.9	146
12	Efficiency and robustness in ant networks of galleries. European Physical Journal B, 2004, 42, 123-129.	0.6	115
13	Network motifs in computational graphs: A case study in software architecture. Physical Review E, 2005, 72, 026107.	0.8	102
14	Topology and evolution of technology innovation networks. Physical Review E, 2007, 76, 056118.	0.8	93
15	THE ONTOGENY OF SCALE-FREE SYNTAX NETWORKS: PHASE TRANSITIONS IN EARLY LANGUAGE ACQUISITION. International Journal of Modeling, Simulation, and Scientific Computing, 2009, 12, 371-392.	0.9	82
16	Spontaneous emergence of modularity in cellular networks. Journal of the Royal Society Interface, 2008, 5, 129-133.	1.5	79
17	Self-organized critical traffic in parallel computer networks. Physica A: Statistical Mechanics and Its Applications, 2002, 312, 636-648.	1.2	77
18	The evolutionary ecology of technological innovations. Complexity, 2013, 18, 15-27.	0.9	75

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19	Are network motifs the spandrels of cellular complexity?. Trends in Ecology and Evolution, 2006, 21, 419-422.	4.2	74
20	The structure of gallery networks in the nests of termite Cubitermes spp. revealed by X-ray tomography. Die Naturwissenschaften, 2008, 95, 877-884.	0.6	73
21	Understanding the complexity of IgE-related phenotypes from childhood to young adulthood: A Mechanisms of the Development of Allergy (MeDALL) Seminar. Journal of Allergy and Clinical Immunology, 2012, 129, 943-954.e4.	1.5	68
22	Self-organization versus hierarchy in open-source social networks. Physical Review E, 2007, 76, 046118.	0.8	65
23	The architecture of mutualistic networks as an evolutionary spandrel. Nature Ecology and Evolution, 2018, 2, 94-99.	3.4	63
24	BiMat: a MATLAB package to facilitate the analysis of bipartite networks. Methods in Ecology and Evolution, 2016, 7, 127-132.	2.2	58
25	Logarithmic growth dynamics in software networks. Europhysics Letters, 2005, 72, 858-864.	0.7	48
26	Topological efficiency in three-dimensional gallery networks of termite nests. Physica A: Statistical Mechanics and Its Applications, 2008, 387, 6235-6244.	1.2	47
27	Language networks: Their structure, function, and evolution. Complexity, 2010, 15, 20-26.	0.9	44
28	EXPERIMENTAL EVOLUTION OF AN EMERGING PLANT VIRUS IN HOST GENOTYPES THAT DIFFER IN THEIR SUSCEPTIBILITY TO INFECTION. Evolution; International Journal of Organic Evolution, 2014, 68, 2467-2480.	1.1	43
29	Coexistence of nestedness and modularity in hostâ€"pathogen infection networks. Nature Ecology and Evolution, 2020, 4, 568-577.	3.4	43
30	Punctuated equilibrium in the large-scale evolution of programming languages <sup />. Journal of the Royal Society Interface, 2015, 12, 20150249.	1.5	42
31	Ecological network complexity scales with area. Nature Ecology and Evolution, 2022, 6, 307-314.	3.4	35
32	Internet?s critical path horizon. European Physical Journal B, 2004, 38, 245-252.	0.6	34
33	Computational analysis of multimorbidity between asthma, eczema and rhinitis. PLoS ONE, 2017, 12, e0179125.	1.1	33
34	Structural determinants of criticality in biological networks. Frontiers in Physiology, 2015, 6, 127.	1.3	32
35	Self-Organization Patterns in Wasp and Open Source Communities. IEEE Intelligent Systems, 2006, 21, 36-40.	4.0	31
36	Major transitions in information technology. Philosophical Transactions of the Royal Society B: Biological Sciences, 2016, 371, 20150450.	1.8	22

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37	Can a minimal replicating construct be identified as the embodiment of cancer?. BioEssays, 2014, 36, 503-512.	1.2	18
38	The Role of Colony Size on Tunnel Branching Morphogenesis in Ant Nests. PLoS ONE, 2014, 9, e109436.	1.1	15
39	Before the Endless Forms: Embodied Model of Transition from Single Cells to Aggregates to Ecosystem Engineering. PLoS ONE, 2013, 8, e59664.	1.1	14
40	Emergence of proto-organisms from bistable stochastic differentiation and adhesion. Journal of the Royal Society Interface, 2016, 13, 20160108.	1.5	14
41	Crossover from endogenous to exogenous activity in open-source software development. Europhysics Letters, 2007, 77, 20002.	0.7	11
42	Convergent Evolutionary Paths in Biological and Technological Networks. Evolution: Education and Outreach, 2011, 4, 415-426.	0.3	10
43	Spatially induced nestedness in a neutral model of phage-bacteria networks. Virus Evolution, 2017, 3, vex021.	2.2	10
44	The Topological Fortress of Termites. Lecture Notes in Computer Science, 2008, , 165-173.	1.0	10
45	Evolving complexity: how tinkering shapes cells, software and ecological networks. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190325.	1.8	9
46	K-scaffold subgraphs of complex networks. Europhysics Letters, 2007, 77, 18004.	0.7	8
47	Mapping co-ancestry connections between the genome of a Medieval individual and modern Europeans. Scientific Reports, 2020, 10, 6843.	1.6	8
48	Percolation in insect nest networks: Evidence for optimal wiring. Physical Review E, 2009, 79, 066106.	0.8	7
49	Breakdown of Modularity in Complex Networks. Frontiers in Physiology, 2017, 8, 497.	1.3	7
50	A Simple Spatiotemporal Evolution Model of a Transmission Power Grid. IEEE Systems Journal, 2018, 12, 3747-3754.	2.9	7
51	Habitat loss causes long extinction transients in small trophic chains. Theoretical Ecology, 2021, 14, 641-661.	0.4	7
52	Neutral models are a tool, not a syndrome. Nature Human Behaviour, 2021, 5, 807-808.	6.2	7
53	Macroevolution <i>in silico</i>: scales, constraints and universals. Palaeontology, 2013, 56, 1327-1340.	1.0	6
54	On Singularities and Black Holes in Combination-Driven Models of Technological Innovation Networks. PLoS ONE, 2016, 11, e0146180.	1.1	6

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55	Emergence of Scale-Free Syntax Networks. , 2010, , 83-101.		6
56	Discerning Electricity Consumption Patterns from Urban Allometric Scaling. , 2010, , .		5
57	Models of Protocell Replication. , 2008, , 213-231.		4
58	Chromatic transitions in the emergence of syntax networks. Royal Society Open Science, 2018, 5, 181286.	1.1	3
59	Explaining Technology. SSRN Electronic Journal, 0, , .	0.4	3
60	Evolution of patent citation networks. , 2014, , .		2
61	A Cultural Diffusion Model for the Rise and Fall of Programming Languages. Human Biology, 2015, 87, 224-34.	0.4	2
62	A New Science for a Connected WorldNexus: Small Worlds and the Groundbreaking Science of Networks. By Mark Buchanan. New York: W. W. Norton, 2002. 236 pp.Six Degrees: The Science of a Connected Age. By Duncan J. Watts. New York: W. W. Norton, 2003. 368 pp.. Current Anthropology, 2004, 45, 565-566.	0.8	1
63	MODULARITY IN BIOLOGICAL NETWORKS. Complex Systems and Interdisciplinary Science, 2007, , 21-40.	0.2	1
64	Networks and the City. Architectural Design, 2013, 83, 112-119.	0.1	1
65	Visualizing the Evolution of Programming Languages. Leonardo, 2017, 50, 505-505.	0.2	0
66	MotifsMotifs in graphs in GraphsGraph motifs in. , 2009, , 5692-5702.		0
67	MotifsMotifs ingraphs inGraphsGraph motifs in. , 2012, , 1919-1928.		0
68	Evolved Modular Epistasis in Artificial Organisms. , 0, , .		0
69	Motifs in Graphs. , 2013, , 1-15.		0
70	The long and winding road: Accidents and tinkering in software standardization. Metode, 2020, , .	0.0	0
71	Rashevskyâ€™s dream: A physico-mathematical foundation of history and culture. Metode, 2022, , .	0.0	0