

Susan Stepney

List of Publications by Year in descending order

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Version: 2024-02-01

121
papers

1,731
citations

346980

22
h-index

406436

35
g-index

127
all docs

127
docs citations

127
times ranked

1134
citing authors

#	ARTICLE	IF	CITATIONS
1	Julian Francis Miller, 1955â€“2022. <i>Artificial Life</i> , 2022, , 1-3.	1.0	0
2	Editorial Introduction for 28:1. <i>Artificial Life</i> , 2022, 28, 1-2.	1.0	0
3	Measuring When a Music Generation Algorithm Copies Too Much: The Originality Report, Cardinality Score, and Symbolic Fingerprinting by Geometric Hashing. <i>SN Computer Science</i> , 2022, 3, .	2.3	2
4	The representational entity in physical computing. <i>Natural Computing</i> , 2021, 20, 233-242.	1.8	4
5	Evolving graphs with semantic neutral drift. <i>Natural Computing</i> , 2021, 20, 127-143.	1.8	2
6	Computing with Open Dynamical Systems. , 2021, , .		1
7	Robot Narratives. , 2021, , 221-246.		0
8	Nothing in evolution makes sense except in the light of parasitism: evolution of complex replication strategies. <i>Royal Society Open Science</i> , 2021, 8, 210441.	1.1	6
9	What is a Parasite? Defining reaction and network properties in an open ended automata chemistry. , 2021, , .		2
10	Reservoir Computing in Material Substrates. <i>Natural Computing Series</i> , 2021, , 141-166.	2.2	7
11	Reservoir computing quality: connectivity and topology. <i>Natural Computing</i> , 2021, 20, 205-216.	1.8	16
12	Computing with Magnetic Thin Films: Using Film Geometry to Improve Dynamics. <i>Lecture Notes in Computer Science</i> , 2021, , 19-34.	1.0	3
13	Mechanical computing. <i>Nature</i> , 2021, 598, 39-48.	13.7	101
14	Editorial: News from the New Co-Editors in Chief. <i>Artificial Life</i> , 2021, 27, 73-74.	1.0	0
15	Tradeoffs with physical delay feedback reservoir computing. , 2021, , .		2
16	MetaChem: An Algebraic Framework for Artificial Chemistries. <i>Artificial Life</i> , 2020, 26, 153-195.	1.0	1
17	Horizontal gene transfer for recombining graphs. <i>Genetic Programming and Evolvable Machines</i> , 2020, 21, 321-347.	1.5	6
18	UCNC 2018 special issue editorial. <i>Natural Computing</i> , 2019, 18, 513-514.	1.8	0

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19	Co-Designing the Computational Model and the Computing Substrate. Lecture Notes in Computer Science, 2019, , 5-14.	1.0	9
20	A substrate-independent framework to characterize reservoir computers. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2019, 475, 20180723.	1.0	38
21	Evolving graphs with horizontal gene transfer. , 2019, , .		5
22	The Role of Structure and Complexity on Reservoir Computing Quality. Lecture Notes in Computer Science, 2019, , 52-64.	1.0	6
23	The Role of the Representational Entity in Physical Computing. Lecture Notes in Computer Science, 2019, , 219-231.	1.0	2
24	Modular combinations of Artificial Chemistries. , 2018, , .		1
25	Complex Systems for Narrative Theorists. , 2018, , 27-36.		5
26	Evolving Living Technologiesâ€™ Insights from the EvoEvo Project. Lecture Notes in Computer Science, 2018, , 46-62.	1.0	1
27	Dynamical Music with Musical Boolean Networks. Lecture Notes in Computer Science, 2018, , 18-33.	1.0	1
28	Sub-Symbolic Artificial Chemistries. Emergence, Complexity and Computation, 2018, , 287-322.	0.2	5
29	Evolving Graphs by Graph Programming. Lecture Notes in Computer Science, 2018, , 35-51.	1.0	21
30	Probabilistic Graph Programs for Randomised and Evolutionary Algorithms. Lecture Notes in Computer Science, 2018, , 63-78.	1.0	5
31	Artificial Epigenetic Networks: Automatic Decomposition of Dynamical Control Tasks Using Topological Self-Modification. IEEE Transactions on Neural Networks and Learning Systems, 2017, 28, 218-230.	7.2	12
32	Introduction to Unconventional Computing. , 2017, , 1-21.		0
33	Ternary graph as a questionnaire: a new approach to assessment of quality of life?. British Journal of Oral and Maxillofacial Surgery, 2017, 55, 679-684.	0.4	3
34	Abstraction and Representation in Living Organisms: When Does a Biological System Compute?. Studies in Applied Philosophy, Epistemology and Rational Ethics, 2017, , 91-116.	0.2	18
35	The natural science of computing. Communications of the ACM, 2017, 60, 31-34.	3.3	34
36	The Geometry of Speed Limiting Resources in Physical Models of Computation. International Journal of Foundations of Computer Science, 2017, 28, 321-333.	0.8	7

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37	East-West paths to unconventional computing. <i>Progress in Biophysics and Molecular Biology</i> , 2017, 131, 469-493.	1.4	14
38	Reservoir Computing as a Model for In-Materio Computing. <i>Emergence, Complexity and Computation</i> , 2017, , 533-571.	0.2	29
39	Reservoir computing in materio: A computational framework for in materio computing. , 2017, , .		15
40	A conceptual and computational framework for modelling and understanding the non-equilibrium gene regulatory networks of mouse embryonic stem cells. <i>PLoS Computational Biology</i> , 2017, 13, e1005713.	1.5	7
41	Semantic closure demonstrated by the evolution of a universal constructor architecture in an artificial chemistry. <i>Journal of the Royal Society Interface</i> , 2017, 14, 20161033.	1.5	10
42	Tuning Jordan algebra artificial chemistries with probability spawning functions. , 2017, , .		1
43	Reservoir computing in materio: An evaluation of configuration through evolution. , 2016, , .		16
44	Defining and simulating open-ended novelty: requirements, guidelines, and challenges. <i>Theory in Biosciences</i> , 2016, 135, 131-161.	0.6	54
45	Editorial/Introduction to the Artificial Life 2015 Conference Special Issue. <i>Artificial Life</i> , 2016, 22, 429-430.	1.0	0
46	Evolving Carbon Nanotube Reservoir Computers. <i>Lecture Notes in Computer Science</i> , 2016, , 49-61.	1.0	28
47	Maximizing the Adjacent Possible in Automata Chemistries. <i>Artificial Life</i> , 2016, 22, 49-75.	1.0	8
48	Augmenting Live Coding with Evolved Patterns. <i>Lecture Notes in Computer Science</i> , 2016, , 31-46.	1.0	7
49	Bio-Reflective Architectures for Evolutionary Innovation. , 2016, , .		2
50	Jordan Algebra AChems: Exploiting Mathematical Richness for Open Ended Design. , 2016, , .		2
51	Emergent Bonding Properties in the Spiky RBN AChem. , 2016, , .		3
52	Heterotic computing: exploiting hybrid computational devices. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2015, 373, 20150091.	1.6	10
53	Zermelo navigation in the quantum brachistochrone. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2015, 48, 115303.	0.7	37
54	Heterotic computing: past, present and future. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2015, 373, 20140225.	1.6	14

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55	Environment orientation: a structured simulation approach for agent-based complex systems. <i>Natural Computing</i> , 2015, 14, 83-97.	1.8	3
56	CoSMoS special issue editorial. <i>Natural Computing</i> , 2015, 14, 1-6.	1.8	11
57	APPLICATIONS OF FINSLER GEOMETRY TO SPEED LIMITS TO QUANTUM INFORMATION PROCESSING. <i>International Journal of Foundations of Computer Science</i> , 2014, 25, 489-505.	0.8	11
58	When does a physical system compute?. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2014, 470, 20140182.	1.0	95
59	Local and global models of physics and computation. <i>International Journal of General Systems</i> , 2014, 43, 673-681.	1.2	4
60	Zermelo navigation and a speed limit to quantum information processing. <i>Physical Review A</i> , 2014, 90, .	1.0	53
61	Atomicity failure and the retrenchment atomicity pattern. <i>Formal Aspects of Computing</i> , 2013, 25, 439-464.	1.4	1
62	The incorporation of epigenetics in artificial gene regulatory networks. <i>BioSystems</i> , 2013, 112, 56-62.	0.9	19
63	Biochemical connectionism. <i>Natural Computing</i> , 2013, 12, 453-472.	1.8	10
64	Special issue on the frontiers of natural computing. <i>Natural Computing</i> , 2013, 12, 441-442.	1.8	0
65	Adaptive robotic gait control using coupled artificial signalling networks, hopf oscillators and inverse kinematics. , 2013, , .		8
66	Computational models of signalling networks for non-linear control. <i>BioSystems</i> , 2013, 112, 122-130.	0.9	7
67	The artificial epigenetic network. , 2013, , .		9
68	Programming Unconventional Computers: Dynamics, Development, Self-Reference. <i>Entropy</i> , 2012, 14, 1939-1952.	1.1	22
69	Heterotic Computing Examples with Optics, Bacteria, and Chemicals. <i>Lecture Notes in Computer Science</i> , 2012, , 198-209.	1.0	4
70	Preface: EmergeNET4: engineering emergence. <i>Natural Computing</i> , 2012, 11, 415-416.	1.8	0
71	Nonclassical Computation â€™ A Dynamical Systems Perspective. , 2012, , 1979-2025.		13
72	Engineering Simulations for Cancer Systems Biology. <i>Current Drug Targets</i> , 2012, 13, 1560-1574.	1.0	14

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73	Gardening Cyber-Physical Systems. Lecture Notes in Computer Science, 2012, , 237-238.	1.0	2
74	Editorial for special issue on the interaction between computation and biology. Natural Computing, 2011, 10, 187-188.	1.8	0
75	RBN-World. Lecture Notes in Computer Science, 2011, , 377-384.	1.0	8
76	Heterotic Computing. Lecture Notes in Computer Science, 2011, , 113-124.	1.0	9
77	Computer simulation: The imaginary friend of auxin transport biology. BioEssays, 2010, 32, 828-835.	1.2	23
78	Reflections on the Simulation of Complex Systems for Science. , 2010, , .		15
79	Controlling Complex Dynamics with Artificial Biochemical Networks. Lecture Notes in Computer Science, 2010, , 159-170.	1.0	15
80	From Binary to Continuous Gates “and Back Again. Lecture Notes in Computer Science, 2010, , 335-347.	1.0	4
81	Exploiting Loose Horizontal Coupling in Evolutionary Swarm Robotics. Lecture Notes in Computer Science, 2010, , 432-439.	1.0	1
82	Representation and structural biases in CGP. , 2009, , .		3
83	Gene regulation in a particle metabolome. , 2009, , .		1
84	Grammatical Evolution of L-systems. , 2009, , .		9
85	Highly entangled multi-qubit states with simple algebraic structure. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 415301.	0.7	12
86	The certification of the Mondex electronic purse to ITSEC Level E6. Formal Aspects of Computing, 2008, 20, 5-19.	1.4	29
87	The neglected pillar of material computation. Physica D: Nonlinear Phenomena, 2008, 237, 1157-1164.	1.3	93
88	Searching for Quantum Programs and Quantum Protocols. Journal of Computational and Theoretical Nanoscience, 2008, 5, 942-969.	0.4	9
89	Evolutionary Search Applied to Reconfigurable Analogue Control. , 2007, , .		0
90	Retrenchment and the Atomicity Pattern. , 2007, , .		2

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91	Frameworks Based on Templates for Rigorous Model-driven Development. <i>Electronic Notes in Theoretical Computer Science</i> , 2007, 191, 3-23.	0.9	17
92	Engineering and theoretical underpinnings of retrenchment. <i>Science of Computer Programming</i> , 2007, 67, 301-329.	1.5	44
93	Neutral Emergence and Coarse Graining. , 2007, , 1131-1140.		2
94	PLAZZMID: An Evolutionary Agent-Based Architecture Inspired by Bacteria and Bees. , 2007, , 1151-1160.		4
95	Retrenching the Purse: Finite Exception Logs, and Validating the Small. <i>2011 IEEE 34th Software Engineering Workshop</i> , 2006, , .	0.0	9
96	Human-Competitive Evolution of Quantum Computing Artefacts by Genetic Programming. <i>Evolutionary Computation</i> , 2006, 14, 21-40.	2.3	13
97	Journeys in non-classical computation II: initial journeys and waypoints. <i>International Journal of Parallel, Emergent and Distributed Systems</i> , 2006, 21, 97-125.	0.7	29
98	Retrenching the Purse: Hashing Injective CLEAR Codes, and Security Properties. , 2006, , .		10
99	Emergent Properties Do Not Refine. <i>Electronic Notes in Theoretical Computer Science</i> , 2005, 137, 163-181.	0.9	12
100	Desert Island Column. <i>Automated Software Engineering</i> , 2005, 12, 139-141.	2.2	0
101	Breaking the Model: Finalisation and a Taxonomy of Security Attacks. <i>Electronic Notes in Theoretical Computer Science</i> , 2005, 137, 225-242.	0.9	15
102	The design of S-boxes by simulated annealing. <i>New Generation Computing</i> , 2005, 23, 219-231.	2.5	101
103	Retrenching the Purse: Finite Sequence Numbers, and the Tower Pattern. <i>Lecture Notes in Computer Science</i> , 2005, , 382-398.	1.0	13
104	Journeys in non-classical computation I: A grand challenge for computing research. <i>International Journal of Parallel, Emergent and Distributed Systems</i> , 2005, 20, 5-19.	0.7	54
105	Penrose Life: Ash and Oscillators. <i>Lecture Notes in Computer Science</i> , 2005, , 471-480.	1.0	1
106	Teaching post-classical computation. <i>SIGCSE Bulletin</i> , 2004, 36, 3-3.	0.1	0
107	An Outline Pattern Language for Z: Five Illustrations and Two Tables. <i>Lecture Notes in Computer Science</i> , 2003, , 2-19.	1.0	11
108	Patterns to Guide Practical Refactoring: Examples Targetting Promotion in Z. <i>Lecture Notes in Computer Science</i> , 2003, , 20-39.	1.0	12

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109	Refactoring in Maintenance and Development of Z Specifications and Proofs. <i>Electronic Notes in Theoretical Computer Science</i> , 2002, 70, 50-69.	0.9	7
110	Evolving Boolean Functions Satisfying Multiple Criteria. <i>Lecture Notes in Computer Science</i> , 2002, , 246-259.	1.0	48
111	More Powerful Z Data Refinement: Pushing the State of the Art in Industrial Refinement. <i>Lecture Notes in Computer Science</i> , 1998, , 284-307.	1.0	33
112	A Tale of Two Proofs. , 1998, , .		6
113	Annotated Z bibliography. <i>Information and Software Technology</i> , 1995, 37, 317-332.	3.0	2
114	A survey of object orientation in Z. <i>Software Engineering Journal</i> , 1992, 7, 150.	0.7	19
115	A demonstrably correct compiler. <i>Formal Aspects of Computing</i> , 1991, 3, 58-101.	1.4	10
116	Formal specification of an access control system. <i>Software - Practice and Experience</i> , 1987, 17, 575-593.	2.5	26
117	Pair production, Comptonization and dynamics in astrophysical plasmas. <i>Monthly Notices of the Royal Astronomical Society</i> , 1985, 212, 523-544.	1.6	32
118	Two-body relaxation in relativistic thermal plasmas. <i>Monthly Notices of the Royal Astronomical Society</i> , 1983, 202, 467-481.	1.6	71
119	Abstraction/Representation Theory and the Natural Science of Computation. , 0, , 127-150.		10
120	A Framework for Heterotic Computing. <i>Electronic Proceedings in Theoretical Computer Science</i> , EPTCS, 0, 95, 263-273.	0.8	5
121	Reflective Grammatical Evolution. , 0, , .		0