James B Aimone

List of Publications by Year
in descending order

76 papers	6,826 citations	201385 27 h-index	205818 48 g-index
77 all docs	77 docs citations	77 times ranked	8146 citing authors

#	Article	IF	Citations
1	Neuromorphic scaling advantages for energy-efficient random walk computations. Nature Electronics, 2022, 5, 102-112.	13.1	16
2	A Roadmap for Reaching the Potential of Brainâ€Derived Computing. Advanced Intelligent Systems, 2021, 3, 2000191.	3.3	10
3	Intermittent fasting enhances long-term memory consolidation, adult hippocampal neurogenesis, and expression of longevity gene Klotho. Molecular Psychiatry, 2021, 26, 6365-6379.	4.1	54
4	Provable Advantages for Graph Algorithms in Spiking Neural Networks. , 2021, , .		7
5	Assessing a Neuromorphic Platform for use in Scientific Stochastic Sampling. , 2021, , .		3
6	Spiking Neural Streaming Binary Arithmetic. , 2021, , .		2
7	Motoneuron expression profiling identifies an association between an axonal splice variant of HDGF-related protein 3 and peripheral myelination. Journal of Biological Chemistry, 2020, 295, 12233-12246.	1.6	1
8	Crossing the Cleft: Communication Challenges Between Neuroscience and Artificial Intelligence. Frontiers in Computational Neuroscience, 2020, 14, 39.	1.2	12
9	Truly Heterogeneous HPC: Co-design to Achieve What Science Needs from HPC. Communications in Computer and Information Science, 2020, , 349-365.	0.4	5
10	Provable Neuromorphic Advantages for Computing Shortest Paths. , 2020, , .		8
11	Solving a steady-state PDE using spiking networks and neuromorphic hardware. , 2020, , .		17
12	Low-Power Deep Learning Inference using the SpiNNaker Neuromorphic Platform. , 2019, , .		4
13	Dynamic Programming with Spiking Neural Computing. , 2019, , .		16
14	Training deep neural networks for binary communication with the Whetstone method. Nature Machine Intelligence, 2019, 1, 86-94.	8.3	67
15	Sparse Data Acquisition on Emerging Memory Architectures. IEEE Access, 2019, 7, 1685-1693.	2.6	0
16	Neural algorithms and computing beyond Moore's law. Communications of the ACM, 2019, 62, 110-110.	3.3	30
17	Memristors learn to play. Nature Electronics, 2019, 2, 96-97.	13.1	3
18	Composing neural algorithms with Fugu. , 2019, , .		10

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19	International Neuroscience Initiatives through the Lens of High-Performance Computing. Computer, 2018, 51, 50-59.	1.2	8
20	Resilient Computing with Reinforcement Learning on a Dynamical System: Case Study in Sorting. , 2018, , .		1
21	Constant-Depth and Subcubic-Size Threshold Circuits for Matrix Multiplication. , 2018, , .		15
22	Dynamic Analysis of Executables to Detect and Characterize Malware. , 2018, , .		8
23	Spiking Neural Algorithms for Markov Process Random Walk. , 2018, , .		13
24	Computing with Spikes: The Advantage of Fine-Grained Timing. Neural Computation, 2018, 30, 2660-2690.	1.3	15
25	Sparse Coding for N-Gram Feature Extraction and Training for File Fragment Classification. IEEE Transactions on Information Forensics and Security, 2018, 13, 2553-2562.	4.5	28
26	Neural-Inspired Anomaly Detection. Springer Proceedings in Complexity, 2018, , 202-209.	0.2	1
27	A historical survey of algorithms and hardware architectures for neural-inspired and neuromorphic computing applications. Biologically Inspired Cognitive Architectures, 2017, 19, 49-64.	0.9	54
28	A novel digital neuromorphic architecture efficiently facilitating complex synaptic response functions applied to liquid state machines. , 2017, , .		8
29	Optimization-based computation with spiking neurons. , 2017, , .		6
30	Neurogenesis deep learning: Extending deep networks to accommodate new classes. , 2017, , .		39
31	A Combinatorial Model for Dentate Gyrus Sparse Coding. Neural Computation, 2017, 29, 94-117.	1.3	16
32	A Spike-Timing Neuromorphic Architecture. , 2017, , .		5
33	Computational Perspectives on Adult Neurogenesis. , 2017, , 425-441.		0
34	Neuromorphic data microscope. , 2017, , .		1
35	Tracking Cyber Adversaries with Adaptive Indicators of Compromise. , 2017, , .		1
36	Neural computing for scientific computing applications. , 2017, , .		7

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37	Computing with dynamical systems. , 2016, , .		0
38	Dopaminergic inputs in the dentate gyrus direct the choice of memory encoding. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E5501-10.	3.3	34
39	Quantifying neural information content: A case study of the impact of hippocampal adult neurogenesis. , 2016, , .		5
40	Spiking network algorithms for scientific computing. , 2016, , .		8
41	Low excitatory innervation balances high intrinsic excitability of immature dentate neurons. Nature Communications, 2016, 7, 11313.	5.8	83
42	High-Performance Computing in Neuroscience for Data-Driven Discovery, Integration, and Dissemination. Neuron, 2016, 92, 628-631.	3.8	31
43	Computational Modeling of Adult Neurogenesis. Cold Spring Harbor Perspectives in Biology, 2016, 8, a018960.	2.3	25
44	A Signal Processing Approach for Cyber Data Classification with Deep Neural Networks. Procedia Computer Science, 2015, 61, 349-354.	1.2	31
45	MapReduce SVM Game. Procedia Computer Science, 2015, 53, 298-307.	1.2	1
46	Training neural hardware with noisy components. , 2015, , .		2
47	The energy scaling advantages of RRAM crossbars. , 2015, , .		8
48	Repeated play of the SVM game as a means of adaptive classification. , 2015, , .		4
49	Energy Scaling Advantages of Resistive Memory Crossbar Based Computation and Its Application to Sparse Coding. Frontiers in Neuroscience, 2015, 9, 484.	1.4	77
50	N2A: a computational tool for modeling from neurons to algorithms. Frontiers in Neural Circuits, 2014, 8, 1.	1.4	113
51	(Invited) Development, Characterization, and Modeling of a TaOx ReRAM for a Neuromorphic Accelerator. ECS Transactions, 2014, 64, 37-42.	0.3	1
52	Adult Neurogenesis in the Dentate Gyrus. , 2014, , 409-429.		2
53	Temporally selective contextual encoding in the dentate gyrus of the hippocampus. Nature Communications, 2014, 5, 3181.	5.8	82
54	Regulation and Function of Adult Neurogenesis: From Genes to Cognition. Physiological Reviews, 2014, 94, 991-1026.	13.1	516

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55	Memristors as Synapses in Artificial Neural Networks: Biomimicry Beyond Weight Change. Advances in Information Security, 2014, , 135-150.	0.9	3
56	Molecular layer perforant path-associated cells contribute to feed-forward inhibition in the adult dentate gyrus. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 9106-9111.	3.3	73
57	Perspectives for computational modeling of cell replacement for neurological disorders. Frontiers in Computational Neuroscience, 2013, 7, 150.	1.2	12
58	A hypothesis for temporal coding of young and mature granule cells. Frontiers in Neuroscience, 2013, 7, 75.	1.4	25
59	Adult Neurogenesis: Implications on Human And Computational Decision Making. Lecture Notes in Computer Science, 2013, , 531-540.	1.0	1
60	Development of GABAergic inputs controls the contribution of maturing neurons to the adult hippocampal network. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 4290-4295.	3.3	53
61	Resolving New Memories: A Critical Look at the Dentate Gyrus, Adult Neurogenesis, and Pattern Separation. Neuron, 2011, 70, 589-596.	3.8	570
62	Modeling new neuron function: a history of using computational neuroscience to study adult neurogenesis. European Journal of Neuroscience, 2011, 33, 1160-1169.	1.2	59
63	Put Them Out to Pasture? What Are Old Granule Cells Good for, Anywayâ€¦?. Hippocampus, 2010, 20, 1124-1125.	0.9	20
64	New neurons and new memories: how does adult hippocampal neurogenesis affect learning and memory?. Nature Reviews Neuroscience, 2010, 11, 339-350.	4.9	1,766
65	Adult neurogenesis: integrating theories and separating functions. Trends in Cognitive Sciences, 2010, 14, 325-337.	4.0	262
66	Computational Influence of Adult Neurogenesis on Memory Encoding. Neuron, 2009, 61, 187-202.	3.8	335
67	ADULT NEURAL PROGENITOR CELLS IN CNS FUNCTION AND DISEASE. , 2008, , 181-200.		1
68	Synapse formation on neurons born in the adult hippocampus. Nature Neuroscience, 2007, 10, 727-734.	7.1	499
69	Mecp2 deficiency leads to delayed maturation and altered gene expression in hippocampal neurons. Neurobiology of Disease, 2007, 27, 77-89.	2.1	196
70	Potential role for adult neurogenesis in the encoding of time in new memories. Nature Neuroscience, 2006, 9, 723-727.	7.1	589
71	Identification of Astrocyte-expressed Factors That Modulate Neural Stem/Progenitor Cell Differentiation. Stem Cells and Development, 2006, 15, 407-421.	1.1	273
72	Cholinergic Input Is Required during Embryonic Development to Mediate Proper Assembly of Spinal Locomotor Circuits. Neuron, 2005, 46, 37-49.	3.8	138

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73	IGF-I instructs multipotent adult neural progenitor cells to become oligodendrocytes. Journal of Cell Biology, 2004, 164, 111-122.	2.3	294
74	Unbiased characterization of high-density oligonucleotide microarrays using probe-level statistics. Journal of Neuroscience Methods, 2004, 135, 27-33.	1.3	7
75	Spatial and temporal gene expression profiling of the contused rat spinal cord. Experimental Neurology, 2004, 189, 204-221.	2.0	93
76	Routes to calcified porous silicon: implications for drug delivery and biosensing. Physica Status Solidi A, 2003, 197, 336-339.	1.7	42