

# Paul Bogdan

## List of Publications by Year in descending order

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Version: 2024-02-01

141  
papers

2,737  
citations

304602

22  
h-index

330025

37  
g-index

145  
all docs

145  
docs citations

145  
times ranked

2073  
citing authors

#	ARTICLE	IF	CITATIONS
1	An in silico deep learning approach to multi-epitope vaccine design: a SARS-CoV-2 case study. Scientific Reports, 2021, 11, 3238.	1.6	126
2	An Analytical Approach for Network-on-Chip Performance Analysis. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2010, 29, 2001-2013.	1.9	100
3	The Chip Is the Network: Toward a Science of Network-on-Chip Design. Foundations and Trends in Electronic Design Automation, 2007, 2, 371-461.	1.0	75
4	Reliable Multi-Fractal Characterization of Weighted Complex Networks: Algorithms and Implications. Scientific Reports, 2017, 7, 7487.	1.6	69
5	Stochastic Communication: A New Paradigm for Fault-Tolerant Networks-on-Chip. VLSI Design, 2007, 2007, 1-17.	0.5	69
6	Biomorphic structural batteries for robotics. Science Robotics, 2020, 5, .	9.9	67
7	Efficient Modeling and Simulation of Bacteria-Based Nanonetworks with BNSim. IEEE Journal on Selected Areas in Communications, 2013, 31, 868-878.	9.7	55
8	Ollivier-Ricci Curvature-Based Method to Community Detection in Complex Networks. Scientific Reports, 2019, 9, 9800.	1.6	55
9	Self-Optimizing and Self-Programming Computing Systems: A Combined Compiler, Complex Networks, and Machine Learning Approach. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 1416-1427.	2.1	53
10	An Optimal Control Approach to Power Management for Multi-Voltage and Frequency Islands Multiprocessor Platforms under Highly Variable Workloads. , 2012, , .		52
11	Bumpy Rides: Modeling the Dynamics of Chemotactic Interacting Bacteria. IEEE Journal on Selected Areas in Communications, 2013, 31, 879-890.	9.7	48
12	Multicast-Aware High-Performance Wireless Network-on-Chip Architectures. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2017, 25, 1126-1139.	2.1	46
13	Reinforcement learning based power management for hybrid electric vehicles. , 2014, , .		45
14	Statistical physics approaches for network-on-chip traffic characterization. , 2009, , .		44
15	Dynamic power management for multidomain system-on-chip platforms. ACM Transactions on Design Automation of Electronic Systems, 2013, 18, 1-20.	1.9	41
16	Clustering drug-drug interaction networks with energy model layouts: community analysis and drug repurposing. Scientific Reports, 2016, 6, 32745.	1.6	41
17	A case for wireless 3D NoCs for CMPs. , 2013, , .		40
18	Workload characterization and its impact on multicore platform design. , 2010, , .		39

#	ARTICLE	IF	CITATIONS
19	Dealing with Unknown Unknowns: Identification and Selection of Minimal Sensing for Fractional Dynamics with Unknown Inputs. , 2018, , .		39
20	A Support Vector Regression (SVR)-Based Latency Model for Network-on-Chip (NoC) Architectures. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2016, 35, 471-484.	1.9	38
21	A Spatio-Temporal Fractal Model for a CPS Approach to Brain-Machine-Body Interfaces. , 2016, , .		38
22	Towards a Science of Cyber-Physical Systems Design. , 2011, , .		37
23	SVR-NoC: A Performance Analysis Tool for Network-on-Chips Using Learning-based Support Vector Regression Model. , 2013, , .		37
24	Mathematical Modeling and Control of Multifractal Workloads for Data-Center-on-a-Chip Optimization. , 2015, , .		37
25	A COVID-19 Rumor Dataset. Frontiers in Psychology, 2021, 12, 644801.	1.1	37
26	VRoC: Variational Autoencoder-aided Multi-task Rumor Classifier Based on Text. , 2020, , .		37
27	Constructing compact causal mathematical models for complex dynamics. , 2017, , .		36
28	QuaLe: A Quantum-Leap Inspired Model for Non-stationary Analysis of NoC Traffic in Chip Multi-processors. , 2010, , .		32
29	Cyberphysical Systems: Workload Modeling and Design Optimization. IEEE Design and Test of Computers, 2011, 28, 78-87.	1.4	32
30	A traffic-aware adaptive routing algorithm on a highly reconfigurable network-on-chip architecture. , 2012, , .		31
31	Heterogeneous Structure of Stem Cells Dynamics: Statistical Models and Quantitative Predictions. Scientific Reports, 2014, 4, 4826.	1.6	29
32	Machine learning-based energy management in a hybrid electric vehicle to minimize total operating cost. , 2015, , .		29
33	User Cooperation Network Coding Approach for NoC Performance Improvement. , 2015, , .		29
34	A load balancing inspired optimization framework for exascale multicore systems: A complex networks approach. , 2017, , .		29
35	Exploiting Emergence in On-Chip Interconnects. IEEE Transactions on Computers, 2014, 63, 570-582.	2.4	28
36	Quantifying emergence and self-organisation of Enterobacter cloacae microbial communities. Scientific Reports, 2018, 8, 12416.	1.6	28

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37	A Statistical Physics Characterization of the Complex Systems Dynamics: Quantifying Complexity from Spatio-Temporal Interactions. Scientific Reports, 2016, 6, 27602.	1.6	27
38	Prediction and control of bursty cloud workloads. , 2014, , .		26
39	Reconstructing missing complex networks against adversarial interventions. Nature Communications, 2019, 10, 1738.	5.8	26
40	Network science characteristics of brain-derived neuronal cultures deciphered from quantitative phase imaging data. Scientific Reports, 2020, 10, 15078.	1.6	26
41	Minimum number of sensors to ensure observability of physiological systems: A case study. , 2016, , .		24
42	Re-Thinking EEG-Based Non-Invasive Brain Interfaces: Modeling and Analysis. , 2018, , .		24
43	Deciphering the generating rules and functionalities of complex networks. Scientific Reports, 2021, 11, 22964.	1.6	24
44	Implantable Pacemakers Control and Optimization via Fractional Calculus Approaches: A Cyber-Physical Systems Perspective. , 2012, , .		23
45	An efficient Network-on-Chip (NoC) based multicore platform for hierarchical parallel genetic algorithms. , 2014, , .		23
46	A comprehensive and accurate latency model for Network-on-Chip performance analysis. , 2014, , .		23
47	Unifying structural descriptors for biological and bioinspired nanoscale complexes. Nature Computational Science, 2022, 2, 243-252.	3.8	23
48	Dynamic Power Management of Voltage-Frequency Island Partitioned Networks-on-Chip using Intel Sing-Chip Cloud Computer. , 2011, , .		21
49	A cyber-physical system approach to artificial pancreas design. , 2013, , .		21
50	Multi-fractal characterization of bacterial swimming dynamics: a case study on real and simulated <i>Serratia marcescens</i> . Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20170154.	1.0	21
51	Selecting Sensors in Biological Fractional-Order Systems. IEEE Transactions on Control of Network Systems, 2018, 5, 709-721.	2.4	21
52	Minimum number of probes for brain dynamics observability. , 2015, , .		20
53	Improving NoC performance under spatio-temporal variability by runtime reconfiguration: a general mathematical framework. , 2016, , .		20
54	Fundamental Challenges Toward Making the IoT a Reachable Reality. ACM Transactions on Design Automation of Electronic Systems, 2017, 22, 1-25.	1.9	20

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55	Gene Expression Is Not Random: Scaling, Long-Range Cross-Dependence, and Fractal Characteristics of Gene Regulatory Networks. <i>Frontiers in Physiology</i> , 2018, 9, 1446.	1.3	20
56	Hitting Time Analysis for Fault-Tolerant Communication at Nanoscale in Future Multiprocessor Platforms. <i>IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems</i> , 2011, 30, 1197-1210.	1.9	19
57	Scalable and realistic benchmark synthesis for efficient NoC performance evaluation. , 2016, , .		19
58	There Is Hope After All: Quantifying Opinion and Trustworthiness in Neural Networks. <i>Frontiers in Artificial Intelligence</i> , 2020, 3, 54.	2.0	19
59	Quantum-like effects in network-on-chip buffers behavior. <i>Proceedings - Design Automation Conference</i> , 2007, , .	0.0	18
60	Analytical modeling and experimental characterization of chemotaxis in <i>Serratia marcescens</i> . <i>Physical Review E</i> , 2014, 89, 052704.	0.8	18
61	Learning Latent Fractional dynamics with Unknown Unknowns. , 2019, , .		18
62	Plasticity-on-Chip Design: Exploiting Self-Similarity for Data Communications. <i>IEEE Transactions on Computers</i> , 2021, 70, 950-962.	2.4	18
63	Pacemaker control of heart rate variability. <i>Transactions on Embedded Computing Systems</i> , 2013, 12, 1-22.	2.1	17
64	H <sub>∞</sub> -O-Cloud: A Resource and Quality of Service-Aware Task Scheduling Framework for Warehouse-Scale Data Centers. <i>IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems</i> , 2020, 39, 2925-2937.	1.9	17
65	A fractional calculus approach to modeling fractal dynamic games. , 2011, , .		16
66	Performance Evaluation of NoC-Based Multicore Systems. <i>ACM Transactions on Design Automation of Electronic Systems</i> , 2016, 21, 1-38.	1.9	16
67	Trace-Based Analysis and Prediction of Cloud Computing User Behavior Using the Fractal Modeling Technique. , 2014, , .		15
68	A Cyber-Physical Systems Approach to Personalized Medicine: Challenges and Opportunities for NoC-based Multicore Platforms. , 2015, , .		15
69	Making the internet-of-things a reality. , 2016, , .		15
70	Prometheus: Processing-in-memory heterogeneous architecture design from a multi-layer network theoretic strategy. , 2018, , .		15
71	Hidden network generating rules from partially observed complex networks. <i>Communications Physics</i> , 2021, 4, .	2.0	15
72	Modeling populations of micro-robots for biological applications. , 2012, , .		14

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73	Disease Diagnosis-on-a-Chip. , 2014, , .		14
74	Taming the Unknown Unknowns in Complex Systems: Challenges and Opportunities for Modeling, Analysis and Control of Complex (Biological) Collectives. Frontiers in Physiology, 2019, 10, 1452.	1.3	14
75	Uncovering New Drug Properties in Target-Based Drug-Drug Similarity Networks. Pharmaceutics, 2020, 12, 879.	2.0	14
76	Controlling the Multifractal Generating Measures of Complex Networks. Scientific Reports, 2020, 10, 5541.	1.6	14
77	Reducing risk of closed loop control of blood glucose in artificial pancreas using fractional calculus. , 2014, 2014, 4839-42.		11
78	From rumor to genetic mutation detection with explanations: a GAN approach. Scientific Reports, 2021, 11, 5861.	1.6	11
79	Dynamic power management for multicores: Case study using the intel SCC. , 2012, , .		10
80	Network-on-Chip-Enabled Multicore Platforms for Parallel Model Predictive Control. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2016, 24, 2837-2850.	2.1	10
81	Specification Mining and Robust Design under Uncertainty. Transactions on Embedded Computing Systems, 2019, 18, 1-21.	2.1	10
82	Deciphering the laws of social network-transcendent COVID-19 misinformation dynamics and implications for combating misinformation phenomena. Scientific Reports, 2021, 11, 10424.	1.6	10
83	Kendall's tau of frequency Hurst exponent as blackout proximity Margin. , 2016, , .		9
84	Identifying Arguments of Space-Time Fractional Diffusion: Data-Driven Approach. Frontiers in Applied Mathematics and Statistics, 2020, 6, .	0.7	9
85	Toward Enabling Automated Cognition and Decision-Making in Complex Cyber-Physical Systems. , 2018, , .		8
86	Autonomous Design Space Exploration of Computing Systems for Sustainability: Opportunities and Challenges. IEEE Design and Test, 2019, 36, 35-43.	1.1	7
87	On the effects of memory and topology on the controllability of complex dynamical networks. Scientific Reports, 2020, 10, 17346.	1.6	7
88	Fractional Dynamics of PMU Data. IEEE Transactions on Smart Grid, 2021, 12, 2578-2588.	6.2	7
89	A stochastic quantum program synthesis framework based on Bayesian optimization. Scientific Reports, 2021, 11, 13138.	1.6	7
90	Spanning Network Gels from Nanoparticles and Graph Theoretical Analysis of Their Structure and Properties. Advanced Materials, 2022, 34, e2201313.	11.1	7

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91	Multiscale modeling of biological communication. , 2015, , .		6
92	A Reconfigurable Wireless NoC for Large Scale Microbiome Community Analysis. IEEE Transactions on Computers, 2017, 66, 1653-1666.	2.4	6
93	From Reductionism to Reintegration: Solving societyâ€™s most pressing problems requires building bridges between data types across the life sciences. PLoS Biology, 2021, 19, e3001129.	2.6	6
94	Quantum-Like Effects in Network-on-Chip Buffers Behavior. Proceedings - Design Automation Conference, 2007, , .	0.0	6
95	Low-latency wireless 3D NoCs via randomized shortcut chips. , 2014, , .		6
96	Inferring functional communities from partially observed biological networks exploiting geometric topology and side information. Scientific Reports, 2022, 12, .	1.6	6
97	Fractional cyber-neural systems â€™ A brief survey. Annual Reviews in Control, 2022, 54, 386-408.	4.4	6
98	NoC-Enabled Multicore Architectures for Stochastic Analysis of Biomolecular Reactions. , 2015, , .		5
99	Mathematical models and control algorithms for dynamic optimization of multicore platforms: A complex dynamics approach. , 2015, , .		5
100	Energy-efficient computing from systems-on-chip to micro-server and data centers. , 2015, , .		5
101	Analyzing the Dark Silicon Phenomenon in a Many-Core Chip Multi-Processor under Deeply-Scaled Process Technologies. , 2015, , .		5
102	Power and thermal management in massive multicore chips. , 2016, , .		5
103	Multi-fractal geometry of finite networks of spins: Nonequilibrium dynamics beyond thermalization and many-body-localization. Chaos, Solitons and Fractals, 2017, 103, 622-631.	2.5	5
104	Scalable Network-on-Chip Architectures for Brainâ€™Machine Interface Applications. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2018, 26, 1895-1907.	2.1	5
105	Data-driven perception of neuron point process with unknown unknowns. , 2019, , .		5
106	Biological Networks across Scalesâ€™The Theoretical and Empirical Foundations for Time-Varying Complex Networks that Connect Structure and Function across Levels of Biological Organization. Integrative and Comparative Biology, 2022, 61, 1991-2010.	0.9	5
107	Generator based approach to analyze mutations in genomic datasets. Scientific Reports, 2021, 11, 21084.	1.6	5
108	Non-Markovian Reinforcement Learning using Fractional Dynamics. , 2021, , .		5

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109	A Theoretical Framework for On-chip Stochastic Communication Analysis. , 2006, , .		4
110	Optimizing fuel economy of hybrid electric vehicles using a Markov decision process model. , 2015, , .		4
111	A low-computation-complexity, energy-efficient, and high-performance linear program solver using memristor crossbars. , 2016, , .		4
112	Stochastic Temporal Logic Abstractions: Challenges and Opportunities. Lecture Notes in Computer Science, 2018, , 3-16.	1.0	4
113	THE ACTUATION SPECTRUM OF SPATIOTEMPORAL NETWORKS WITH POWER-LAW TIME DEPENDENCIES. International Journal of Modeling, Simulation, and Scientific Computing, 2019, 22, 1950023.	0.9	4
114	S <sup>4</sup> oC: A Self-Optimizing, Self-Adapting Secure System-on-Chip Design Framework to Tackle Unknown Threats – A Network Theoretic, Learning Approach. , 2020, , .		4
115	Editorial: Fractal and Multifractal Facets in the Structure and Dynamics of Physiological Systems and Applications to Homeostatic Control, Disease Diagnosis and Integrated Cyber-Physical Platforms. Frontiers in Physiology, 2020, 11, 447.	1.3	4
116	Guest Editors' Introduction: Cyber-Physical Systems for Medical Applications. IEEE Design and Test, 2015, 32, 6-8.	1.1	3
117	Distributed placement of power generation resources in uncertain environments. , 2017, , .		3
118	Modeling of PMU Data Using ARFIMA Models. , 2018, , .		3
119	Taming extreme heterogeneity via machine learning based design of autonomous manycore systems. , 2019, , .		3
120	A Design Methodology for Energy-Aware Processing in Unmanned Aerial Vehicles. ACM Transactions on Design Automation of Electronic Systems, 2022, 27, 1-20.	1.9	3
121	Exploring congestion phase transitions in vehicular traffic via topology and driver behavior modeling. , 2011, , .		2
122	NoC Architectures as Enablers of Biological Discovery for Personalized and Precision Medicine. , 2015, , .		2
123	Hierarchical and hybrid energy storage devices in data centers: Architecture, control and provisioning. PLoS ONE, 2018, 13, e0191450.	1.1	2
124	Deep Learning for Reintegrating Biology. Integrative and Comparative Biology, 2021, , .	0.9	2
125	Hitting Time Analysis for Stochastic Communication. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2009, , 39-43.	0.2	2
126	Discovering Laws from Observations: A Data-Driven Approach. Lecture Notes in Computer Science, 2020, , 302-310.	1.0	2



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127	Trust-aware Control for Intelligent Transportation Systems. , 2021, , .		2
128	Learning Code Representations Using Multifractal-based Graph Networks. , 2021, , .		2
129	Workload Modeling and its Implications on Data-Center-on-a-Chip Optimization: From Mathematical Models to Control Algorithms. , 2015, , .		1
130	Cyber-physical systems for personalized and precise medicine. , 2015, , .		1
131	Power-aware virtual machine mapping in the data-center-on-a-chip paradigm. , 2016, , .		1
132	Analyzing Complexity and Fractality of Glucose Dynamics in a Pregnant Woman with Type 2 Diabetes under Treatment. International Journal of Biological Sciences, 2019, 15, 2373-2380.	2.6	1
133	An Efficient Task Mapping for Manycore Systems. , 2020, , .		1
134	A software framework for trace analysis targeting multicore platforms design. , 2011, , .		1
135	Actuator Placement for Heterogeneous Complex Dynamical Networks with Long-Term Memory. , 2020, , .		1
136	Quantification of Fractional Dynamical Stability of EEG Signals as a Bio-Marker for Cognitive Motor Control. Frontiers in Control Engineering, 2022, 2, .	0.4	1
137	Dynamic power management for multicores: Case study using the intel SCC. , 2012, , .		0
138	Performance evaluation of multicore systems: From traffic analysis to latency predictions (Embedded) Tj ETQqO O 0 rgBT /Overlock 10 Tf		0
139	Modeling, Analysis and Design of Bio-hybrid Micro-robotic Swarms for Medical Applications. Modeling and Optimization in Science and Technologies, 2017, , 517-539.	0.7	0
140	On the Stability and Fairness of Submodular Allocations. , 2020, , .		0
141	Editorial: Inference, Causality and Control in Networks of Dynamical Systems: Data Science and Modeling Perspectives to Network Physiology With Implications for Artificial Intelligence. Frontiers in Physiology, 2022, 13, .	1.3	0