

# 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	Biological Networks across Scales—The Theoretical and Empirical Foundations for Time-Varying Complex Networks that Connect Structure and Function across Levels of Biological Organization. <i>Integrative and Comparative Biology</i> , 2022, 61, 1991-2010.	0.9	5
2	A Design Methodology for Energy-Aware Processing in Unmanned Aerial Vehicles. <i>ACM Transactions on Design Automation of Electronic Systems</i> , 2022, 27, 1-20.	1.9	3
3	Quantification of Fractional Dynamical Stability of EEG Signals as a Bio-Marker for Cognitive Motor Control. <i>Frontiers in Control Engineering</i> , 2022, 2, .	0.4	1
4	Spanning Network Gels from Nanoparticles and Graph Theoretical Analysis of Their Structure and Properties. <i>Advanced Materials</i> , 2022, 34, e2201313.	11.1	7
5	Editorial: Inference, Causality and Control in Networks of Dynamical Systems: Data Science and Modeling Perspectives to Network Physiology With Implications for Artificial Intelligence. <i>Frontiers in Physiology</i> , 2022, 13, .	1.3	0
6	Unifying structural descriptors for biological and bioinspired nanoscale complexes. <i>Nature Computational Science</i> , 2022, 2, 243-252.	3.8	23
7	Inferring functional communities from partially observed biological networks exploiting geometric topology and side information. <i>Scientific Reports</i> , 2022, 12, .	1.6	6
8	Fractional cyber-neural systems — A brief survey. <i>Annual Reviews in Control</i> , 2022, 54, 386-408.	4.4	6
9	An in silico deep learning approach to multi-epitope vaccine design: a SARS-CoV-2 case study. <i>Scientific Reports</i> , 2021, 11, 3238.	1.6	126
10	From Reductionism to Reintegration: Solving society’s most pressing problems requires building bridges between data types across the life sciences. <i>PLoS Biology</i> , 2021, 19, e3001129.	2.6	6
11	From rumor to genetic mutation detection with explanations: a GAN approach. <i>Scientific Reports</i> , 2021, 11, 5861.	1.6	11
12	Deep Learning for Reintegrating Biology. <i>Integrative and Comparative Biology</i> , 2021, , .	0.9	2
13	A COVID-19 Rumor Dataset. <i>Frontiers in Psychology</i> , 2021, 12, 644801.	1.1	37
14	Fractional Dynamics of PMU Data. <i>IEEE Transactions on Smart Grid</i> , 2021, 12, 2578-2588.	6.2	7
15	Deciphering the laws of social network-transcendent COVID-19 misinformation dynamics and implications for combating misinformation phenomena. <i>Scientific Reports</i> , 2021, 11, 10424.	1.6	10
16	Plasticity-on-Chip Design: Exploiting Self-Similarity for Data Communications. <i>IEEE Transactions on Computers</i> , 2021, 70, 950-962.	2.4	18
17	A stochastic quantum program synthesis framework based on Bayesian optimization. <i>Scientific Reports</i> , 2021, 11, 13138.	1.6	7
18	Hidden network generating rules from partially observed complex networks. <i>Communications Physics</i> , 2021, 4, .	2.0	15

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19	Generator based approach to analyze mutations in genomic datasets. Scientific Reports, 2021, 11, 21084.	1.6	5
20	Trust-aware Control for Intelligent Transportation Systems. , 2021, , .		2
21	Deciphering the generating rules and functionalities of complex networks. Scientific Reports, 2021, 11, 22964.	1.6	24
22	Non-Markovian Reinforcement Learning using Fractional Dynamics. , 2021, , .		5
23	Learning Code Representations Using Multifractal-based Graph Networks. , 2021, , .		2
24	Hâ,,O-Cloud: A Resource and Quality of Service-Aware Task Scheduling Framework for Warehouse-Scale Data Centers. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 2925-2937.	1.9	17
25	Network science characteristics of brain-derived neuronal cultures deciphered from quantitative phase imaging data. Scientific Reports, 2020, 10, 15078.	1.6	26
26	There Is Hope After All: Quantifying Opinion and Trustworthiness in Neural Networks. Frontiers in Artificial Intelligence, 2020, 3, 54.	2.0	19
27	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
28	On the effects of memory and topology on the controllability of complex dynamical networks. Scientific Reports, 2020, 10, 17346.	1.6	7
29	An Efficient Task Mapping for Manycore Systems. , 2020, , .		1
30	Uncovering New Drug Properties in Target-Based Drug"Drug Similarity Networks. Pharmaceutics, 2020, 12, 879.	2.0	14
31	Biomorphic structural batteries for robotics. Science Robotics, 2020, 5, .	9.9	67
32	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
33	Identifying Arguments of Space-Time Fractional Diffusion: Data-Driven Approach. Frontiers in Applied Mathematics and Statistics, 2020, 6, .	0.7	9
34	Controlling the Multifractal Generating Measures of Complex Networks. Scientific Reports, 2020, 10, 5541.	1.6	14
35	VRoC: Variational Autoencoder-aided Multi-task Rumor Classifier Based on Text. , 2020, , .		37
36	On the Stability and Fairness of Submodular Allocations. , 2020, , .		0

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37	Discovering Laws from Observations: A Data-Driven Approach. Lecture Notes in Computer Science, 2020, , 302-310.	1.0	2
38	Actuator Placement for Heterogeneous Complex Dynamical Networks with Long-Term Memory. , 2020, , .		1
39	Ollivier-Ricci Curvature-Based Method to Community Detection in Complex Networks. Scientific Reports, 2019, 9, 9800.	1.6	55
40	Specification Mining and Robust Design under Uncertainty. Transactions on Embedded Computing Systems, 2019, 18, 1-21.	2.1	10
41	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
42	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
43	Autonomous Design Space Exploration of Computing Systems for Sustainability: Opportunities and Challenges. IEEE Design and Test, 2019, 36, 35-43.	1.1	7
44	Data-driven perception of neuron point process with unknown unknowns. , 2019, , .		5
45	Reconstructing missing complex networks against adversarial interventions. Nature Communications, 2019, 10, 1738.	5.8	26
46	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
47	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
48	Taming extreme heterogeneity via machine learning based design of autonomous manycore systems. , 2019, , .		3
49	Learning Latent Fractional dynamics with Unknown Unknowns. , 2019, , .		18
50	Selecting Sensors in Biological Fractional-Order Systems. IEEE Transactions on Control of Network Systems, 2018, 5, 709-721.	2.4	21
51	Modeling of PMU Data Using ARFIMA Models. , 2018, , .		3
52	Gene Expression Is Not Random: Scaling, Long-Range Cross-Dependence, and Fractal Characteristics of Gene Regulatory Networks. Frontiers in Physiology, 2018, 9, 1446.	1.3	20
53	Stochastic Temporal Logic Abstractions: Challenges and Opportunities. Lecture Notes in Computer Science, 2018, , 3-16.	1.0	4
54	Re-Thinking EEG-Based Non-Invasive Brain Interfaces: Modeling and Analysis. , 2018, , .		24

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55	Prometheus: Processing-in-memory heterogeneous architecture design from a multi-layer network theoretic strategy. , 2018, , .		15
56	Dealing with Unknown Unknowns: Identification and Selection of Minimal Sensing for Fractional Dynamics with Unknown Inputs. , 2018, , .		39
57	Quantifying emergence and self-organisation of <i>Enterobacter cloacae</i> microbial communities. Scientific Reports, 2018, 8, 12416.	1.6	28
58	Scalable Network-on-Chip Architectures for Brain-Machine Interface Applications. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2018, 26, 1895-1907.	2.1	5
59	Hierarchical and hybrid energy storage devices in data centers: Architecture, control and provisioning. PLoS ONE, 2018, 13, e0191450.	1.1	2
60	Toward Enabling Automated Cognition and Decision-Making in Complex Cyber-Physical Systems. , 2018, , .		8
61	Fundamental Challenges Toward Making the IoT a Reachable Reality. ACM Transactions on Design Automation of Electronic Systems, 2017, 22, 1-25.	1.9	20
62	Constructing compact causal mathematical models for complex dynamics. , 2017, , .		36
63	A Reconfigurable Wireless NoC for Large Scale Microbiome Community Analysis. IEEE Transactions on Computers, 2017, 66, 1653-1666.	2.4	6
64	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
65	Reliable Multi-Fractal Characterization of Weighted Complex Networks: Algorithms and Implications. Scientific Reports, 2017, 7, 7487.	1.6	69
66	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
67	Distributed placement of power generation resources in uncertain environments. , 2017, , .		3
68	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
69	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
70	A load balancing inspired optimization framework for exascale multicore systems: A complex networks approach. , 2017, , .		29
71	A low-computation-complexity, energy-efficient, and high-performance linear program solver using memristor crossbars. , 2016, , .		4
72	Power-aware virtual machine mapping in the data-center-on-a-chip paradigm. , 2016, , .		1

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73	A Statistical Physics Characterization of the Complex Systems Dynamics: Quantifying Complexity from Spatio-Temporal Interactions. Scientific Reports, 2016, 6, 27602.	1.6	27
74	Kendall's tau of frequency Hurst exponent as blackout proximity Margin. , 2016, , .		9
75	Performance Evaluation of NoC-Based Multicore Systems. ACM Transactions on Design Automation of Electronic Systems, 2016, 21, 1-38.	1.9	16
76	Improving NoC performance under spatio-temporal variability by runtime reconfiguration: a general mathematical framework. , 2016, , .		20
77	Power and thermal management in massive multicore chips. , 2016, , .		5
78	Scalable and realistic benchmark synthesis for efficient NoC performance evaluation. , 2016, , .		19
79	Clustering drug-drug interaction networks with energy model layouts: community analysis and drug repurposing. Scientific Reports, 2016, 6, 32745.	1.6	41
80	Making the internet-of-things a reality. , 2016, , .		15
81	Minimum number of sensors to ensure observability of physiological systems: A case study. , 2016, , .		24
82	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
83	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
84	A Spatio-Temporal Fractal Model for a CPS Approach to Brain-Machine-Body Interfaces. , 2016, , .		38
85	Mathematical Modeling and Control of Multifractal Workloads for Data-Center-on-a-Chip Optimization. , 2015, , .		37
86	NoC-Enabled Multicore Architectures for Stochastic Analysis of Biomolecular Reactions. , 2015, , .		5
87	A Cyber-Physical Systems Approach to Personalized Medicine: Challenges and Opportunities for NoC-based Multicore Platforms. , 2015, , .		15
88	Mathematical models and control algorithms for dynamic optimization of multicore platforms: A complex dynamics approach. , 2015, , .		5
89	Machine learning-based energy management in a hybrid electric vehicle to minimize total operating cost. , 2015, , .		29
90	Energy-efficient computing from systems-on-chip to micro-server and data centers. , 2015, , .		5

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91	Minimum number of probes for brain dynamics observability. , 2015, , .		20
92	Guest Editors' Introduction: Cyber-Physical Systems for Medical Applications. IEEE Design and Test, 2015, 32, 6-8.	1.1	3
93	Workload Modeling and its Implications on Data-Center-on-a-Chip Optimization: From Mathematical Models to Control Algorithms. , 2015, , .		1
94	Optimizing fuel economy of hybrid electric vehicles using a Markov decision process model. , 2015, , .		4
95	User Cooperation Network Coding Approach for NoC Performance Improvement. , 2015, , .		29
96	Cyber-physical systems for personalized and precise medicine. , 2015, , .		1
97	NoC Architectures as Enablers of Biological Discovery for Personalized and Precision Medicine. , 2015, , .		2
98	Multiscale modeling of biological communication. , 2015, , .		6
99	Analyzing the Dark Silicon Phenomenon in a Many-Core Chip Multi-Processor under Deeply-Scaled Process Technologies. , 2015, , .		5
100	An efficient Network-on-Chip (NoC) based multicore platform for hierarchical parallel genetic algorithms. , 2014, , .		23
101	Disease Diagnosis-on-a-Chip. , 2014, , .		14
102	Reducing risk of closed loop control of blood glucose in artificial pancreas using fractional calculus. , 2014, 2014, 4839-42.		11
103	Analytical modeling and experimental characterization of chemotaxis in <i>Serratia marcescens</i> . Physical Review E, 2014, 89, 052704.	0.8	18
104	Prediction and control of bursty cloud workloads. , 2014, , .		26
105	Reinforcement learning based power management for hybrid electric vehicles. , 2014, , .		45
106	Exploiting Emergence in On-Chip Interconnects. IEEE Transactions on Computers, 2014, 63, 570-582.	2.4	28
107	Trace-Based Analysis and Prediction of Cloud Computing User Behavior Using the Fractal Modeling Technique. , 2014, , .		15
108	A comprehensive and accurate latency model for Network-on-Chip performance analysis. , 2014, , .		23

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109	Heterogeneous Structure of Stem Cells Dynamics: Statistical Models and Quantitative Predictions. Scientific Reports, 2014, 4, 4826.	1.6	29
110	Low-latency wireless 3D NoCs via randomized shortcut chips. , 2014, , .		6
111	Performance evaluation of multicore systems: From traffic analysis to latency predictions (Embedded) Tj ETQq1 1 0.784314 rgBT /Over		8
112	A cyber-physical system approach to artificial pancreas design. , 2013, , .		21
113	SVR-NoC: A Performance Analysis Tool for Network-on-Chips Using Learning-based Support Vector Regression Model. , 2013, , .		37
114	A case for wireless 3D NoCs for CMPs. , 2013, , .		40
115	Efficient Modeling and Simulation of Bacteria-Based Nanonetworks with BNSim. IEEE Journal on Selected Areas in Communications, 2013, 31, 868-878.	9.7	55
116	Pacemaker control of heart rate variability. Transactions on Embedded Computing Systems, 2013, 12, 1-22.	2.1	17
117	Bumpy Rides: Modeling the Dynamics of Chemotactic Interacting Bacteria. IEEE Journal on Selected Areas in Communications, 2013, 31, 879-890.	9.7	48
118	Dynamic power management for multidomain system-on-chip platforms. ACM Transactions on Design Automation of Electronic Systems, 2013, 18, 1-20.	1.9	41
119	Modeling populations of micro-robots for biological applications. , 2012, , .		14
120	A traffic-aware adaptive routing algorithm on a highly reconfigurable network-on-chip architecture. , 2012, , .		31
121	Dynamic power management for multicores: Case study using the intel SCC. , 2012, , .		0
122	Implantable Pacemakers Control and Optimization via Fractional Calculus Approaches: A Cyber-Physical Systems Perspective. , 2012, , .		23
123	Dynamic power management for multicores: Case study using the intel SCC. , 2012, , .		10
124	An Optimal Control Approach to Power Management for Multi-Voltage and Frequency Islands Multiprocessor Platforms under Highly Variable Workloads. , 2012, , .		52
125	Towards a Science of Cyber-Physical Systems Design. , 2011, , .		37
126	Dynamic Power Management of Voltage-Frequency Island Partitioned Networks-on-Chip using Intel Sing-Chip Cloud Computer. , 2011, , .		21



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127	A fractional calculus approach to modeling fractal dynamic games. , 2011, , .		16
128	Cyberphysical Systems: Workload Modeling and Design Optimization. IEEE Design and Test of Computers, 2011, 28, 78-87.	1.4	32
129	Hitting Time Analysis for Fault-Tolerant Communication at Nanoscale in Future Multiprocessor Platforms. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2011, 30, 1197-1210.	1.9	19
130	Exploring congestion phase transitions in vehicular traffic via topology and driver behavior modeling. , 2011, , .		2
131	A software framework for trace analysis targeting multicore platforms design. , 2011, , .		1
132	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
133	Workload characterization and its impact on multicore platform design. , 2010, , .		39
134	QuaLe: A Quantum-Leap Inspired Model for Non-stationary Analysis of NoC Traffic in Chip Multi-processors. , 2010, , .		32
135	Statistical physics approaches for network-on-chip traffic characterization. , 2009, , .		44
136	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
137	Quantum-like effects in network-on-chip buffers behavior. Proceedings - Design Automation Conference, 2007, , .	0.0	18
138	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
139	Quantum-Like Effects in Network-on-Chip Buffers Behavior. Proceedings - Design Automation Conference, 2007, , .	0.0	6
140	Stochastic Communication: A New Paradigm for Fault-Tolerant Networks-on-Chip. VLSI Design, 2007, 2007, 1-17.	0.5	69
141	A Theoretical Framework for On-chip Stochastic Communication Analysis. , 2006, , .		4