Roland Bouffanais

List of Publications by Year
in descending order

114	1,507	361413	395702
papers	citations	20 h-index	33 g-index

117	117	117	1293
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	â€˜Data dregsâ€™ and its implications for AI ethics: Revelations from the pandemic. AI and Ethics, 2022, , 1-3.	6.8	0
2	A Framework for the Identification of Human Vertical Displacement Activity Based on Multi-Sensor Data. IEEE Sensors Journal, 2022, 22, 8011-8029.	4.7	3
3	Transition from simple to complex contagion in collective decision-making. Nature Communications, 2022, 13, 1442.	12.8	17
4	Complexity science for urban solutions. , 2022, , 39-58.		2
5	Randomized Constraints Consensus for Distributed Robust Mixed-Integer Programming. IEEE Transactions on Control of Network Systems, 2021, 8, 295-306.	3.7	4
6	External light control of three-dimensional ultrashort far-infrared pulses in an inhomogeneous array of carbon nanotubes. Physical Review B, 2021, 103, .	3.2	5
7	Tuning the clustering coefficient of generalized circulant networks. Physica A: Statistical Mechanics and Its Applications, 2021, 578, 126088.	2.6	1
8	Tracking Multiple Fast Targets With Swarms: Interplay Between Social Interaction and Agent Memory. , 2021, , .		6
9	Interplay between success and patterns of human collaboration: case study of a Thai Research Institute. Scientific Reports, 2021, 11, 318.	3.3	2
10	Entropy changes in crystalline material under phase transition and symmetry breaking. Physica A: Statistical Mechanics and Its Applications, 2021, 588, 126525.	2.6	0
11	Probabilistic Modelling of Demographic Changes in Singaporeâ€™s Neighbourhoods. IOP Conference Series: Materials Science and Engineering, 2021, 1203, 032032.	0.6	0
12	Balancing Collective Exploration and Exploitation in Multi-Agent and Multi-Robot Systems: A Review. Frontiers in Robotics and AI, 2021, 8, 771520.	3.2	16
13	Robust Stabilization of a Class of Nonlinear Systems via Aperiodic Sensing and Actuation. IEEE Access, 2020, 8, 157403-157417.	4.2	5
14	On the Challenges and Potential of Using Barometric Sensors to Track Human Activity. Sensors, 2020, 20, 6786.	3.8	20
15	Spatial super-spreaders and super-susceptibles in human movement networks. Scientific Reports, 2020, 10, 18642.	3.3	23
16	Viscoelastic laminar drag bounds in pipe flow. Physics of Fluids, 2020, 32, 031702.	4.0	5
17	Cities â€” try to predict superspreading hotspots for COVID-19. Nature, 2020, 583, 352-355.	27.8	41
18	Heterogeneous Swarms for Maritime Dynamic Target Search and Tracking. , 2020, , .		10

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19	A Sequential Algorithm for Sampled Mixed-integer Optimization Problems. IFAC-PapersOnLine, 2020, 53, 6749-6755.	0.9	2
20	Robust Stabilization of a Class of Networked Nonlinear Systems via Parsimonious Communication and Actuation. , 2020, , .		0
21	Multi-Agent Reinforcement Learning for Dynamic Ocean Monitoring by a Swarm of Buoys. , 2020, , .		13
22	Hydrodynamic object identification with artificial neural models. Scientific Reports, 2019, 9, 11242.	3.3	12
23	Data assimilation method to de-noise and de-filter particle image velocimetry data. Journal of Fluid Mechanics, 2019, 877, 196-213.	3.4	13
24	Design and Analysis of A Miniature Two-Wheg Climbing Robot with Robust Internal and External Transitioning Capabilities. , 2019, , .		9
25	Self-organizing maps for storage and transfer of knowledge in reinforcement learning. Adaptive Behavior, 2019, 27, 111-126.	1.9	46
26	Tail Design of A Miniature Two-Wheg Climbing Robot for External Transitioning. Mechanisms and Machine Science, 2019, , 2139-2148.	0.5	4
27	Optimal network topology for responsive collective behavior. Science Advances, 2019, 5, eaau0999.	10.3	47
28	A Physics-Based Attack Detection Technique in Cyber-Physical Systems: A Model Predictive Control Co-Design Approach. , 2019, , .		0
29	Tuning Networks for Prosocial Behavior: From Senseless Swarms to Smart Mobs [Commentary]. IEEE Technology and Society Magazine, 2019, 38, 17-19.	0.8	5
30	Robust Stabilization of Resource Limited Networked Control Systems Under Denial-of-Service Attack. , 2019, , .		2
31	Design innovation of mesoscale robotic swarms: applications to cooperative urban sensing and mapping. Frontiers of Information Technology and Electronic Engineering, 2019, 20, 1618-1631.	2.6	1
32	Decentralized Multi-Floor Exploration by a Swarm of Miniature Robots Teaming with Wall-Climbing Units. , 2019, , .		15
33	Stabilization of ultrashort pulses by external pumping in an array of carbon nanotubes subject to piezoelectric effects. Journal of Applied Physics, 2019, 126, .	2.5	10
34	Design, Modeling, and Experimentation of a Bio-Inspired Miniature Climbing Robot With Bilayer Dry Adhesives. Journal of Mechanisms and Robotics, 2019, 11, .	2.2	19
35	Asymptotic dynamics of three-dimensional bipolar ultrashort electromagnetic pulses in an array of semiconductor carbon nanotubes. Optics Express, 2019, 27, 27592.	3.4	10
36	Consensus in topologically interacting swarms under communication constraints and time-delays. Nonlinear Dynamics, 2018, 93, 1287-1300.	5.2	27

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37	Propagation of three-dimensional bipolar ultrashort electromagnetic pulses in an inhomogeneous array of carbon nanotubes. Physical Review A, 2018, 97, .	2.5	11
38	Two-dimensional electroacoustic waves in silicene. Applied Physics B: Lasers and Optics, 2018, 124, 1.	2.2	2
39	Distributed system of autonomous buoys for scalable deployment and monitoring of large waterbodies. Autonomous Robots, 2018, 42, 1669-1689.	4.8	41
40	Development of a Miniature Robot for Multi-robot Occupancy Grid Mapping. , 2018, , .		8
41	A Decentralized Mobile Computing Network for Multi-Robot Systems Operations. , 2018, , .		1
42	Are the different layers of a social network conveying the same information?. EPJ Data Science, 2018, 7, .	2.8	12
43	Gradual Collective Upgrade of a Swarm of Autonomous Buoys for Dynamic Ocean Monitoring. , 2018, , .		13
44	ORION-II: A Miniature Climbing Robot with Bilayer Compliant Tape for Autonomous Intelligent Surveillance and Reconnaissance. , 2018, , .		7
45	A Bio-Inspired Miniature Climbing Robot With Bilayer Dry Adhesives: Design, Modeling, and Experimentation. , 2018, , .		7
46	A spaceâ€“time integral minimisation method for the reconstruction of velocity fields from measured scalar fields. Journal of Fluid Mechanics, 2018, 854, 348-366.	3.4	6
47	Experience Replay Using Transition Sequences. Frontiers in Neurorobotics, 2018, 12, 32.	2.8	12
48	Growth mechanisms of perturbations in boundary layers over a compliant wall. Physical Review Fluids, 2018, 3, .	2.5	10
49	Three-dimensional ultrashort optical Airy beams in an inhomogeneous medium with carbon nanotubes. Physics Letters, Section A: General, Atomic and Solid State Physics, 2017, 381, 931-934.	2.1	7
50	Influence of the order parameter on the dynamics of ultrashort pulses in an environment with carbon nanotubes. Journal of Applied Physics, 2017, 121, 084301.	2.5	1
51	Effect of Correlations in Swarms on Collective Response. Scientific Reports, 2017, 7, 10388.	3.3	31
52	Three-dimensional light bullets in a Bragg medium with carbon nanotubes. Applied Physics B: Lasers and Optics, 2017, 123, 1.	2.2	13
53	Nonequilibrium dielectric noise in solids in the presence of modulation of electrical permittivity and spectral symmetry breaking under feedback. New Journal of Physics, 2017, 19, 113050.	2.9	1
54	Randomized Constraints Consensus for Distributed Robust Linear Programming * *This work is supported by the European Research Council (ERC) under the European Unionâ€™s Horizon 2020 research and innovation programme, grant agreement No 638992 - OPT4SMART, (GN) and by a grant from the Singapore National Research Foundation (NRF) under the ASPIRE project, grant No NCR-NCR001-040 (MC&RB).. IFAC-PapersOnLine, 2017, 50, 4973-4978.	0.9	4

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55	A randomized distributed ellipsoid algorithm for uncertain feasibility problems. , 2017, , .		2
56	Swarm-Enabling Technology for Multi-Robot Systems. Frontiers in Robotics and AI, 2017, 4, .	3.2	50
57	EXCESS OF SOCIAL ACTIVITY REDUCES THE RESPONSIVENESS OF SWARMS. WIT Transactions on State-of-the-art in Science and Engineering, 2017, , 172-180.	0.0	0
58	Opto-acoustic effects in an array of carbon nanotubes. Journal of Applied Physics, 2016, 120, 134307.	2.5	4
59	Interplay between signaling network design and swarm dynamics. Network Science, 2016, 4, 244-265.	1.0	18
60	Three-dimensional extremely-short optical pulses inÂcarbonÂnanotubeÂarrays in the presence of an external magnetic field. Modern Physics Letters B, 2016, 30, 1650405.	1.9	0
61	Collision of 3D bipolar light pulses in an array of carbon nanotubes. , 2016, , .		0
62	Zitterbewegung near a Schwarzschild-type black hole. Modern Physics Letters A, 2016, 31, 1650168.	1.2	1
63	Phonon Spectrum and Vibrational Thermodynamic Characteristics of Graphene Nanolms. , 2016, , 307-322.		0
64	Peculiarities of the propagation of multidimensional extremely short optical pulses in germanene. Physics Letters, Section A: General, Atomic and Solid State Physics, 2016, 380, 3117-3120.	2.1	6
65	Collisions of three-dimensional bipolar optical solitons in an array of carbon nanotubes. Physical Review A, 2016, 94, .	2.5	22
66	Design and Control of Swarm Dynamics. SpringerBriefs in Complexity, 2016, , .	0.1	48
67	A Physical Approach to Swarming. SpringerBriefs in Complexity, 2016, , 17-43.	0.1	0
68	A Biologically Inspired Approach to Collective Behaviors. SpringerBriefs in Complexity, 2016, , 5-15.	0.1	3
69	A Computational Approach to Collective Behaviors. SpringerBriefs in Complexity, 2016, , 95-104.	0.1	4
70	Outlook: Can Swarms Be Designed?. SpringerBriefs in Complexity, 2016, , 105-106.	0.1	1
71	A Network-Theoretic Approach to Collective Dynamics. SpringerBriefs in Complexity, 2016, , 45-74.	0.1	0
72	Complexity and Swarming Systems. SpringerBriefs in Complexity, 2016, , 1-3.	0.1	0

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73	Excess of social activity reduces the responsiveness of swarms. International Journal of Design and Nature and Ecodynamics, 2016, 11, 654-662.	0.5	0
74	Interplay between motility and cell-substratum adhesion in amoeboid cells. Biomicrofluidics, 2015, 9, 054112.	2.4	8
75	Study of the indirect interaction in a non-Fermi liquid within the AdS/CFT correspondence framework. Modern Physics Letters B, 2015, 29, 1550081.	1.9	0
76	Interaction of a two-dimensional electromagnetic pulse with an electron inhomogeneity in an array of carbon nanotubes in the presence of field inhomogeneity. European Physical Journal D, 2015, 69, 1.	1.3	14
77	Two-dimensional extremely short electromagnetic pulses in a Bragg medium with carbon nanotubes. European Physical Journal D, 2015, 69, 1.	1.3	17
78	Consensus reaching in swarms ruled by a hybrid metric-topological distance. European Physical Journal B, 2014, 87, 1.	1.5	35
79	Tunneling characteristics of a contact between a superlattice and non-Fermi liquid using the AdS/CFT correspondence. Modern Physics Letters B, 2014, 28, 1450170.	1.9	3
80	Interaction of a two-dimensional electromagnetic breather with an electron inhomogeneity in an array of carbon nanotubes. Journal of Applied Physics, 2014, 115, 203109.	2.5	14
81	Few-cycle optical pulses in a thin film of a topological insulator. Optics Communications, 2014, 329, 151-153.	2.1	2
82	Influence of multi-level impurities on the dynamics of ultrashort electromagnetic pulses in carbon nanotubes. Europhysics Letters, 2014, 106, 37005.	2.0	11
83	Directional Mechanosensing of Amoeboid Cells. Biophysical Journal, 2014, 106, 176a-177a.	0.5	0
84	Physical Limits on Directional Mechanosensing of Amoeboid Crawling Cells. Biophysical Journal, 2014, 106, 176a.	0.5	0
85	Influence of the number of topologically interacting neighbors on swarm dynamics. Scientific Reports, 2014, 4, 4184.	3.3	90
86	Persistent Cellular Motion Control and Trapping Using Mechanotactic Signaling. PLoS ONE, 2014, 9, e105406.	2.5	8
87	On the electronic spectrum in curved graphene nanoribbons. JETP Letters, 2013, 97, 400-403.	1.4	7
88	Computational Fluid Dynamics for Architectural Design. Architectural Design, 2013, 83, 118-123.	0.1	11
89	PROPAGATION OF LASER BEAMS IN AN ARRAY OF SEMICONDUCTOR CARBON NANOTUBES. Modern Physics Letters B, 2013, 27, 1350045.	1.9	10
90	Propagation of extremely short pulses in a grapheneâ€“boron nitride bilayer. Physics Letters, Section A: General, Atomic and Solid State Physics, 2013, 377, 564-566.	2.1	4

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91	Study of the indirect exchange interaction in a strained graphene nanoribbon. Physica B: Condensed Matter, 2013, 419, 62-65.	2.7	2
92	Three-dimensional electromagnetic breathers in carbon nanotubes with the field inhomogeneity along their axes. Journal of Applied Physics, 2013, 114, .	2.5	63
93	Physical limits on cellular directional mechanosensing. Physical Review E, 2013, 87, 052716.	2.1	13
94	Resilience and Controllability of Dynamic Collective Behaviors. PLoS ONE, 2013, 8, e82578.	2.5	34
95	THE HALL CONDUCTIVITY OF A DOPED GRAPHENE IN A QUANTIZING MAGNETIC FIELD. Modern Physics Letters B, 2012, 26, 1250188.	1.9	1
96	Computational performance of a parallelized three-dimensional high-order spectral element toolbox. Computers and Fluids, 2011, 44, 1-8.	2.5	22
97	Time-scale joint representation of DNS and LES numerical data. Computers and Fluids, 2011, 43, 38-45.	2.5	2
98	Hydrodynamic object recognition using pressure sensing. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2011, 467, 19-38.	2.1	33
99	Advances and challenges of applied large-eddy simulation. Computers and Fluids, 2010, 39, 735-738.	2.5	35
100	Hydrodynamics of cell-cell mechanical signaling in the initial stages of aggregation. Physical Review E, 2010, 81, 041920.	2.1	9
101	Grid Filter Modeling for Large-Eddy Simulation. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2010, , 159-165.	0.3	1
102	Wavelet Analysis of the Turbulent LES Data of the Lid-Driven Cavity Flow. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2010, , 87-94.	0.3	0
103	Unsteady transitional swirling flow in the presence of a moving free surface. Physics of Fluids, 2009, 21, .	4.0	20
104	Transitional cylindrical swirling flow in presence of a flat free surface. Computers and Fluids, 2009, 38, 1651-1673.	2.5	8
105	Computational Performance of a Parallelized Three-Dimensional High-Order Spectral Element Toolbox. Lecture Notes in Computer Science, 2009, , 323-329.	1.3	1
106	Solution of moving-boundary problems by the spectral element method. Applied Numerical Mathematics, 2008, 58, 968-984.	2.1	20
107	Large-eddy simulation of the flow in a lid-driven cubical cavity. Physics of Fluids, 2007, 19, 055108.	4.0	66
108	A coupled approximate deconvolution and dynamic mixed scale model for large-eddy simulation. Journal of Computational Physics, 2007, 224, 241-266.	3.8	33

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109	Grid filter models for large-eddy simulation. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1101203-1101204.	0.2	0
110	Large-Eddy Simulation of the Lid-Driven Cubic Cavity Flow by the Spectral Element Method. Journal of Scientific Computing, 2006, 27, 151-162.	2.3	29
111	Mesh Update Techniques for Free-Surface Flow Solvers Using Spectral Element Method. Journal of Scientific Computing, 2006, 27, 137-149.	2.3	11
112	Nonequilibrium Electron Interactions in Metal Films. Physical Review Letters, 1998, 81, 922-925.	7.8	125
113	Integrated 2D Design in the Curriculum: Effectiveness of Early Cross-Subject Engineering Challenges. , 0, , .		1
114	Beyond Bio-Inspired Robotics: How Multi-Robot Systems Can Support Research on Collective Animal Behavior. Frontiers in Robotics and AI, 0, 9, .	3.2	3