Francesco Mondada

List of Publications by Year
in descending order

145	5,722	172207	128067
papers	citations	29 h-index	60 g-index

153	153	153	3234
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Social Integration of Robots into Groups of Cockroaches to Control Self-Organized Choices. Science, 2007, 318, 1155-1158.	6.0	464
2	Evolution of homing navigation in a real mobile robot. IEEE Transactions on Systems, Man, and Cybernetics, 1996, 26, 396-407.	5.5	311
3	Swarm-Bot: A New Distributed Robotic Concept. Autonomous Robots, 2004, 17, 193-221.	3.2	277
4	Evolving Self-Organizing Behaviors for a Swarm-Bot. Autonomous Robots, 2004, 17, 223-245.	3.2	265
5	Autonomous Self-Assembly in Swarm-Bots. , 2006, 22, 1115-1130.		255
6	Swarmanoid: A Novel Concept for the Study of Heterogeneous Robotic Swarms. IEEE Robotics and Automation Magazine, 2013, 20, 60-71.	2.2	254
7	Mobile robot miniaturisation: A tool for investigation in control algorithms. , 1994, , 501-513.		182
8	Evolutionary neurocontrollers for autonomous mobile robots. Neural Networks, 1998, 11, 1461-1478.	3.3	164
9	The cooperation of swarm-bots - Physical interactions in collective robotics. IEEE Robotics and Automation Magazine, 2005, 12, 21-28.	2.2	159
10	What do people expect from robots?. , 2008, , .		152
11	The marXbot, a miniature mobile robot opening new perspectives for the collective-robotic research. , 2010, , .		126
12	Magnebike: A magnetic wheeled robot with high mobility for inspecting complexâ€shaped structures. Journal of Field Robotics, 2009, 26, 453-476.	3.2	123
13	Teamwork in Self-Organized Robot Colonies. IEEE Transactions on Evolutionary Computation, 2009, 13, 695-711.	7.5	118
14	Understanding collective aggregation mechanisms: From probabilistic modelling to experiments with real robots. Robotics and Autonomous Systems, 1999, 29, 51-63.	3.0	113
15	A review: Can robots reshape K-12 STEM education?. , 2015, , .		90
16	Bringing Robotics to Formal Education: The Thymio Open-Source Hardware Robot. IEEE Robotics and Automation Magazine, 2017, 24, 77-85.	2.2	90
17	Fostering computational thinking through educational robotics: a model for creative computational problem solving. International Journal of STEM Education, 2020, 7, .	2.7	85
18	Self-Organized Coordinated Motion in Groups of Physically Connected Robots. IEEE Transactions on Systems, Man, and Cybernetics, 2007, 37, 224-239.	5.5	84

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19	KhepOnTheWeb: open access to a mobile robot on the Internet. IEEE Robotics and Automation Magazine, 2000, 7, 41-47.	2.2	83
20	Cooperation through self-assembly in multi-robot systems. ACM Transactions on Autonomous and Adaptive Systems, 2006, 1, 115-150.	0.4	83
21	ASEBA: A Modular Architecture for Event-Based Control of Complex Robots. IEEE/ASME Transactions on Mechatronics, 2011, 16, 321-329.	3.7	75
22	Thymio II, a robot that grows wiser with children. , 2013, , .		74
23	Evolution of neural control structures: some experiments on mobile robots. Robotics and Autonomous Systems, 1995, 16, 183-195.	3.0	65
24	Cooperative navigation in robotic swarms. Swarm Intelligence, 2014, 8, 1-33.	1.3	61
25	Which robot behavior can motivate children to tidy up their toys?. , 2014, , .		60
26	Lessons learned from robotic vacuum cleaners entering the home ecosystem. Robotics and Autonomous Systems, 2014, 62, 376-391.	3.0	57
27	Cellulo. , 2017, , .		52
28	SWARM-BOT: from concept to implementation. , 0, , .		50
29	The SWARM-BOTS Project. Lecture Notes in Computer Science, 2005, , 31-44.	1.0	49
30	Construction automation with autonomous mobile robots: A review. , 2015, , .		47
31	Closed-loop interactions between a shoal of zebrafish and a group of robotic fish in a circular corridor. Swarm Intelligence, 2018, 12, 227-244.	1.3	46
32	Pedagogical Uses of Thymio II: How Do Teachers Perceive Educational Robots in Formal Education?. IEEE Robotics and Automation Magazine, 2016, 23, 16-23.	2.2	44
33	Mergeable nervous systems for robots. Nature Communications, 2017, 8, 439.	5.8	43
34	Robots mediating interactions between animals for interspecies collective behaviors. Science Robotics, 2019, 4, .	9.9	40
35	Communication assisted navigation in robotic swarms: Self-organization and cooperation. , 2011, , .		39
36	Bio-inspired construction with mobile robots and compliant pockets. Robotics and Autonomous Systems, 2015, 74, 340-350.	3.0	39

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37	Autonomous vacuum cleaner. Robotics and Autonomous Systems, 1997, 19, 233-245.	3.0	37
38	Highly compact robots for inspection of power plants. Journal of Field Robotics, 2012, 29, 47-68.	3.2	37
39	Adapted magnetic wheel unit for compact robots inspecting complex shaped pipe structures. , 2007, , .		35
40	Autonomous construction using scarce resources in unknown environments. Autonomous Robots, 2012, 33, 467-485.	3.2	35
41	A computer science and robotics integration model for primary school: evaluation of a large-scale in-service K-4 teacher-training program. Education and Information Technologies, 2021, 26, 2445-2475.	3.5	33
42	Compact magnetic wheeled robot with high mobility for inspecting complex shaped pipe structures. , 2007, , .		32
43	Towards mixed societies of chickens and robots. , 2010, , .		32
44	A data-driven method for reconstructing and modelling social interactions in moving animal groups. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190380.	1.8	31
45	TRIPILLAR: a miniature magnetic caterpillar climbing robot with plane transition ability. Robotica, 2011, 29, 1075-1081.	1.3	29
46	Object transport by modular robots that self-assemble. , 0, , .		28
47	Transport of an object by six pre-attached robots interacting via physical links. , 0, , .		28
48	Infiltrating the zebrafish swarm: design, implementation and experimental tests of a miniature robotic fish lure for fishâ€“robot interaction studies. Artificial Life and Robotics, 2016, 21, 239-246.	0.7	28
49	A Two Years Informal Learning Experience Using the Thymio Robot. , 2012, , 37-48.		28
50	Designing a socially integrated mobile robot for ethological research. Robotics and Autonomous Systems, 2018, 103, 42-55.	3.0	26
51	How mimetic should a robotic fish be to socially integrate into zebrafish groups?. Bioinspiration and Biomimetics, 2018, 13, 025001.	1.5	25
52	Youâ€™re Doing It Wrong! Studying Unexpected Behaviors in Child-Robot Interaction. Lecture Notes in Computer Science, 2015, , 390-400.	1.0	25
53	Real-time high-accuracy 2D localization with structured patterns. , 2016, , .		24
54	Segregation in swarms of mobile robots based on the Brazil nut effect. , 2009, , .		23

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55	The Hand-Bot, a Robot Design for Simultaneous Climbing and Manipulation. Lecture Notes in Computer Science, 2009, , 11-22.	1.0	23
56	The role of feedback and guidance as intervention methods to foster computational thinking in educational robotics learning activities for primary school. Computers and Education, 2022, 180, 104431.	5.1	23
57	Decentralized self-selection of swarm trajectories: from dynamical systems theory to robotic implementation. Swarm Intelligence, 2014, 8, 329-351.	1.3	22
58	Heuristics for the Development and Evaluation of Educational Robotics Systems. IEEE Transactions on Education, 2019, 62, 278-287.	2.0	22
59	Autonomous Self-assembly in a Swarm-bot. , 2006, , 314-322.		22
60	A Sociological Contribution to Understanding the Use of Robots in Schools: The Thymio Robot. Lecture Notes in Computer Science, 2014, , 217-228.	1.0	21
61	"KhepOnTheWeb": An experimental demonstrator in telerobotics and virtual reality. , 0, , .		19
62	Superlinear Physical Performances in a SWARM-BOT. Lecture Notes in Computer Science, 2005, , 282-291.	1.0	19
63	Development of a mobile robot to study the collective behavior of zebrafish. , 2012, , .		19
64	Robot swarms as an educational tool: The Thymioâ€™s way. International Journal of Advanced Robotic Systems, 2019, 16, 172988141882518.	1.3	19
65	Self-assembly on Demand in a Group of Physical Autonomous Mobile Robots Navigating Rough Terrain. Lecture Notes in Computer Science, 2005, , 272-281.	1.0	19
66	Design, Control, and Applications of Autonomous Mobile Robots. , 1999, , 159-186.		19
67	Hardware solutions for evolutionary robotics. Lecture Notes in Computer Science, 1998, , 137-151.	1.0	18
68	ASSISI: Mixing Animals with Robots in a Hybrid Society. Lecture Notes in Computer Science, 2013, , 441-443.	1.0	18
69	Affordable SLAM through the co-design of hardware and methodology. , 2010, , .		17
70	Design of a modular robotic system that mimics small fish locomotion and body movements for ethological studies. International Journal of Advanced Robotic Systems, 2017, 14, 172988141770662.	1.3	17
71	Haptic-Enabled Handheld Mobile Robots. , 2017, , .		17
72	Exploring Escape Games as a Teaching Tool in Educational Robotics. Advances in Intelligent Systems and Computing, 2020, , 95-106.	0.5	17

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73	Towards Bio-hybrid Systems Made of Social Animals and Robots. Lecture Notes in Computer Science, 2013, , 384-386.	1.0	17
74	A programming workshop using the robot “Thymio II”: The effect on the understanding by children. , 2012, , .		16
75	A miniature mobile robot developed to be socially integrated with species of small fish. , 2014, , .		16
76	Autonomous Exploration for Radioactive Hotspots Localization Taking Account of Sensor Limitations. Sensors, 2019, 19, 292.	2.1	16
77	R2T2. International Journal of Advanced Robotic Systems, 2016, 13, 172988141665816.	1.3	14
78	Multi-robot control and tracking framework for bio-hybrid systems with closed-loop interaction. , 2017, , .		14
79	Communication assisted navigation in robotic swarms: Self-organization and cooperation. , 2011, , .		14
80	Highly compact robots for inspection of power plants. , 2010, , .		13
81	Cyâ€mag^{3D}: a simple and miniature climbing robot with advance mobility in ferromagnetic environment. Industrial Robot, 2011, 38, 229-233.	1.2	13
82	Electroencephalography as implicit communication channel for proximal interaction between humans and robot swarms. Swarm Intelligence, 2016, 10, 247-265.	1.3	13
83	Windfield. , 2017, , .		13
84	Bidirectional interactions facilitate the integration of a robot into a shoal of zebrafish Danio rerio. PLoS ONE, 2019, 14, e0220559.	1.1	13
85	The symbiotic relationship between educational robotics and computer science in formal education. Education and Information Technologies, 2021, 26, 5077-5107.	3.5	13
86	DESIGN OF MAGNETIC SWITCHABLE DEVICE (MSD) AND APPLICATIONS IN CLIMBING ROBOT. , 2010, , .		13
87	MagneBike: Compact magnetic wheeled robot for power plant inspection. , 2010, , .		12
88	Autonomous Construction with Compliant Building Material. Advances in Intelligent Systems and Computing, 2016, , 1371-1388.	0.5	12
89	Adaptation and Awareness in Robot Ensembles: Scenarios and Algorithms. Lecture Notes in Computer Science, 2015, , 471-494.	1.0	12
90	Automated Calibration of a Biomimetic Space-Dependent Model for Zebrafish and Robot Collective Behaviour in a Structured Environment. Lecture Notes in Computer Science, 2017, , 107-118.	1.0	12

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91	A Tangible Programming Language for the Educational Robot Thymio. , 2019, , .		11
92	Social Integrating Robots Suggest Mitigation Strategies for Ecosystem Decay. Frontiers in Bioengineering and Biotechnology, 2021, 9, 612605.	2.0	11
93	Division of Labour in Self-organised Groups. Lecture Notes in Computer Science, 2008, , 426-436.	1.0	11
94	Evolution of Embodied Intelligence. Lecture Notes in Computer Science, 2004, , 293-311.	1.0	10
95	Performance benefits of self-assembly in a swarm-bot. , 2007, , .		10
96	How to Blend a Robot Within a Group of Zebrafish: Achieving Social Acceptance Through Real-Time Calibration of a Multi-level Behavioural Model. Lecture Notes in Computer Science, 2018, , 73-84.	1.0	10
97	Swarm-Bots to the Rescue. Lecture Notes in Computer Science, 2011, , 165-172.	1.0	10
98	Probabilistic Modelling of a Bio-Inspired Collective Experiment with Real Robots. , 1998, , 289-298.		10
99	Tubulo â€" A train-like miniature inspection climbing robot for ferromagnetic tubes. , 2010, , .		9
100	TRIPILLAR: MINIATURE MAGNETIC CATERPILLAR CLIMBING ROBOT WITH PLANE TRANSITION ABILITY. , 2009, , .		8
101	Introducing a Paper-Based Programming Language for Computing Education in Classrooms. , 2020, , .		8
102	Ranger, An Example of Integration of Robotics into the Home Ecosystem. Mechanisms and Machine Science, 2016, , 181-189.	0.3	8
103	The CT-cube: A framework for the design and the assessment of computational thinking activities. Computers in Human Behavior Reports, 2022, 5, 100166.	2.3	8
104	Strategies to modulate zebrafish collective dynamics with a closed-loop biomimetic robotic system. Bioinspiration and Biomimetics, 2020, 15, 046004.	1.5	7
105	Evolution and mobile autonomous robotics. Lecture Notes in Computer Science, 1996, , 221-249.	1.0	7
106	Towards Autonomous Energy-Wise RObjects. Lecture Notes in Computer Science, 2011, , 311-322.	1.0	6
107	A social approach for target localization: simulation and implementation in the marXbot robot. Memetic Computing, 2011, 3, 245-259.	2.7	6
108	Enhanced directional self-assembly based on active recruitment and guidance. , 2011, , .		6

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109	Teachersâ€™ Perspective on Fostering Computational Thinking Through Educational Robotics. Advances in Intelligent Systems and Computing, 2022, , 177-185.	0.5	6
110	Towards an Autonomous Evolution of Non-biological Physical Organisms. Lecture Notes in Computer Science, 2011, , 173-180.	1.0	6
111	Social Adaptation of Robots for Modulating Self-Organization in Animal Societies. , 2014, , .		5
112	Accessible Maker-Based Approaches to Educational Robotics in Online Learning. IEEE Access, 2021, 9, 96877-96889.	2.6	5
113	Interactions between Art and Mobile Robotic System Engineering. Lecture Notes in Computer Science, 2001, , 121-137.	1.0	5
114	Aseba-Challenge: An Open-Source Multiplayer Introduction to Mobile Robots Programming. Lecture Notes in Computer Science, 2008, , 65-74.	1.0	5
115	Interactive Mobile Robotic Drinking Glasses. , 2009, , 543-551.		5
116	Building a safe robot for behavioral biology experiments. , 2012, , .		4
117	Upgrade Your Robot Competition, Make a Festival! [Competitions]. IEEE Robotics and Automation Magazine, 2013, 20, 12-14.	2.2	4
118	Open-Source and Widely Disseminated Robot Hardware [From the Guest Editors]. IEEE Robotics and Automation Magazine, 2017, 24, 30-31.	2.2	4
119	Cutting Down the Energy Consumed by Domestic Robots: Insights from Robotic Vacuum Cleaners. Lecture Notes in Computer Science, 2012, , 128-139.	1.0	4
120	Towards Long-Term Collective Experiments. Advances in Intelligent Systems and Computing, 2013, , 683-692.	0.5	4
121	Learning Symmetry with Tangible Robots. Advances in Intelligent Systems and Computing, 2020, , 270-283.	0.5	4
122	Involving and training public school teachers in using robotics for education. , 2012, , .		3
123	Windfield. , 2017, , .		3
124	Evo-Bots: A Simple, Stochastic Approach to Self-assembling Artificial Organisms. Springer Proceedings in Advanced Robotics, 2018, , 373-385.	0.9	3
125	Localization of Inexpensive Robots with Low-Bandwidth Sensors. Springer Proceedings in Advanced Robotics, 2018, , 545-558.	0.9	3
126	Augmented Robotics for Learners: A Case Study on Optics. , 2019, , .		3

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127	Cy-mag^{3D}: A SIMPLE AND MINIATURE CLIMBING ROBOT WITH ADVANCE MOBILITY IN FERROMAGNETIC ENVIRONMENT. , 2010, , .		3
128	Seamless multi-robot programming for the people: ASEBA and the wireless Thymio II robot. , 2013, , .		2
129	Improved Mobile Robot Programming Performance through Real-time Program Assessment. , 2017, , .		2
130	Can Robotics Help Move Researchers Toward Open Science? [From the Field]. IEEE Robotics and Automation Magazine, 2017, 24, 111-112.	2.2	2
131	Planner9, a HTN Planner Distributed on Groups of Miniature Mobile Robots. Lecture Notes in Computer Science, 2009, , 1013-1022.	1.0	2
132	MAGNETIC WHEELS OPTIMIZATION AND APPLICATION TO THE MagneBike CLIMBING ROBOT. , 2010, , .		2
133	CY-MAG3DE: MAGNETIC CLIMBING INSPECTION ROBOT. , 2011, , .		2
134	Design of collision avoidance system for a chicken robot based on fuzzy relation equations. , 2009, , .		1
135	Analysis of impact of an annual robotics festival. , 2012, , .		1
136	Investigating the Role of Educational Robotics in Formal Mathematics Education: The Case of Geometry forÂ15-Year-Old Students. Lecture Notes in Computer Science, 2021, , 67-81.	1.0	1
137	Exploring a Handwriting Programming Language for Educational Robots. Advances in Intelligent Systems and Computing, 2022, , 268-275.	0.5	1
138	A Stochastic Self-reconfigurable Modular Robot with Mobility Control. Lecture Notes in Computer Science, 2012, , 416-417.	1.0	1
139	Fuzzy Control System for Autonomous Navigation of Thymio II Mobile Robots. Journal of Emerging Technologies in Web Intelligence, 2014, 6, .	0.6	1
140	Aligning the Design of Educational Robotics Tools With Classroom Activities. Advances in Educational Technologies and Instructional Design Book Series, 2022, , 1-21.	0.2	1
141	Enhanced directional self-assembly based on active recruitment and guidance. , 2011, , .		0
142	Physical Interactions in Swarm Robotics: The Hand-Bot Case Study. Springer Tracts in Advanced Robotics, 2013, , 585-595.	0.3	0
143	Providing and optimizing a robotic construction plan for rescue operations. , 2015, , .		0
144	Follow the dummy: Measuring the influence of a biomimetic robotic fish-lure on the collective decisions of a zebrafish shoal inside a circular corridor. , 2018, , .		0

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145	Fuzzy Control System for Autonomous Navigation and Parking of Thymio II Mobile Robots. International Journal of Computer and Electrical Engineering, 2014, 6, 321-325.	0.2	0