Gianluca Baldassarre

List of Publications by Year
in descending order

130 papers	4,335 citations	147801 31 h-index	138484 58 g-index
137 all docs	137 docs citations	137 times ranked	3811 citing authors

#	Article	IF	Citations
1	Consensus Paper: Towards a Systems-Level View of Cerebellar Function: the Interplay Between Cerebellum, Basal Ganglia, and Cortex. Cerebellum, 2017, 16, 203-229.	2.5	321
2	Evolving Self-Organizing Behaviors for a Swarm-Bot. Autonomous Robots, 2004, 17, 223-245.	4.8	265
3	Appetitive Pavlovian-instrumental Transfer: A review. Neuroscience and Biobehavioral Reviews, 2016, 71, 829-848.	6.1	242
4	Novelty or Surprise?. Frontiers in Psychology, 2013, 4, 907.	2.1	232
5	Evolving Mobile Robots Able to Display Collective Behaviors. Artificial Life, 2003, 9, 255-267.	1.3	173
6	Theories and computational models of affordance and mirror systems: An integrative review. Neuroscience and Biobehavioral Reviews, 2013, 37, 491-521.	6.1	162
7	Action observation and motor imagery for rehabilitation in Parkinson's disease: A systematic review and an integrative hypothesis. Neuroscience and Biobehavioral Reviews, 2017, 72, 210-222.	6.1	143
8	TRoPICALS: A computational embodied neuroscience model of compatibility effects.. Psychological Review, 2010, 117, 1188-1228.	3.8	134
9	The nucleus accumbens as a nexus between values and goals in goal-directed behavior: a review and a new hypothesis. Frontiers in Behavioral Neuroscience, 2013, 7, 135.	2.0	124
10	Parkinsonâ€™s disease as a system-level disorder. Npj Parkinson's Disease, 2016, 2, 16025.	5.3	108
11	Intrinsically Motivated Learning in Natural and Artificial Systems. , 2013, , .		105
12	The contribution of brain sub-cortical loops in the expression and acquisition of action understanding abilities. Neuroscience and Biobehavioral Reviews, 2013, 37, 2504-2515.	6.1	98
13	GRAIL: A Goal-Discovering Robotic Architecture for Intrinsically-Motivated Learning. IEEE Transactions on Cognitive and Developmental Systems, 2016, 8, 214-231.	3.8	92
14	Self-Organized Coordinated Motion in Groups of Physically Connected Robots. IEEE Transactions on Systems, Man, and Cybernetics, 2007, 37, 224-239.	5.0	84
15	Dysfunctions of the basal ganglia-cerebellar-thalamo-cortical system produce motor tics in Tourette syndrome. PLoS Computational Biology, 2017, 13, e1005395.	3.2	82
16	Intrinsically motivated actionâ€"outcome learning and goal-based action recall: A system-level bio-constrained computational model. Neural Networks, 2013, 41, 168-187.	5.9	75
17	The super-learning hypothesis: Integrating learning processes across cortex, cerebellum and basal ganglia. Neuroscience and Biobehavioral Reviews, 2019, 100, 19-34.	6.1	70
18	Selection of cortical dynamics for motor behaviour by the basal ganglia. Biological Cybernetics, 2015, 109, 575-595.	1.3	65

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19	Distributed Coordination of Simulated Robots Based on Self-Organization. Artificial Life, 2006, 12, 289-311.	1.3	61
20	The embodied mind extended: using words as social tools. Frontiers in Psychology, 2013, 4, 214.	2.1	61
21	The roles of the amygdala in the affective regulation of body, brain, and behaviour. Connection Science, 2010, 22, 215-245.	3.0	58
22	What are intrinsic motivations? A biological perspective. , 2011, , .		58
23	Integrating reinforcement learning, equilibrium points, and minimum variance to understand the development of reaching: A computational model.. Psychological Review, 2014, 121, 389-421.	3.8	57
24	A 1D CNN for high accuracy classification and transfer learning in motor imagery EEG-based brain-computer interface. Journal of Neural Engineering, 2021, 18, 066053.	3.5	55
25	Intrinsic motivations and open-ended development in animals, humans, and robots: an overview. Frontiers in Psychology, 2014, 5, 985.	2.1	51
26	Evolving internal reinforcers for an intrinsically motivated reinforcement-learning robot. , 2007, , .		50
27	The SWARM-BOTS Project. Lecture Notes in Computer Science, 2005, , 31-44.	1.3	49
28	The three principles of action: a Pavlovian-instrumental transfer hypothesis. Frontiers in Behavioral Neuroscience, 2013, 7, 153.	2.0	44
29	A modular neural-network model of the basal gangliaâ€™s role in learning and selecting motor behaviours. Cognitive Systems Research, 2002, 3, 5-13.	2.7	43
30	A spiking neuron model of the cortico-basal ganglia circuits for goal-directed and habitual action learning. Neural Networks, 2013, 41, 212-224.	5.9	43
31	Ecological Active Vision: Four Bioinspired Principles to Integrate Bottomâ€“Up and Adaptive Topâ€“Down Attention Tested With a Simple Camera-Arm Robot. IEEE Transactions on Autonomous Mental Development, 2015, 7, 3-25.	1.6	42
32	Which is the best intrinsic motivation signal for learning multiple skills?. Frontiers in Neurorobotics, 2013, 7, 22.	2.8	41
33	How affordances associated with a distractor object affect compatibility effects: A study with the computational model TRoPICALS. Psychological Research, 2013, 77, 7-19.	1.7	37
34	Phasic dopamine as a prediction error of intrinsic and extrinsic reinforcements driving both action acquisition and reward maximization: A simulated robotic study. Neural Networks, 2013, 39, 40-51.	5.9	36
35	Special Issue â€œOn Defining Artificial Intelligenceâ€â€"Commentaries and Authorâ€™s Response. Journal of Artificial General Intelligence, 2020, 11, 1-100.	0.6	33
36	Functions and Mechanisms of Intrinsic Motivations. , 2013, , 49-72.		32

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37	Keep focussing: striatal dopamine multiple functions resolved in a single mechanism tested in a simulated humanoid robot. Frontiers in Psychology, 2014, 5, 124.	2.1	32
38	Intrinsically Motivated Learning Systems: An Overview. , 2013, , 1-14.		31
39	Goal-Directed Behavior and Instrumental Devaluation: A Neural System-Level Computational Model. Frontiers in Behavioral Neuroscience, 2016, 10, 181.	2.0	28
40	Transitional Wearable Companions: A Novel Concept of Soft Interactive Social Robots to Improve Social Skills in Children with Autism Spectrum Disorder. International Journal of Social Robotics, 2016, 8, 471-481.	4.6	26
41	Evolution and Learning in an Intrinsically Motivated Reinforcement Learning Robot. , 2007, , 294-303.		26
42	Learning parameterized motor skills on a humanoid robot. , 2014, , .		24
43	From Actions to Goals and Vice-Versa: Theoretical Analysis and Models of the Ideomotor Principle and TOTE. Lecture Notes in Computer Science, 2006, , 73-93.	1.3	24
44	The interplay of Pavlovian and instrumental processes in devaluation experiments: a computational embodied neuroscience model tested with a simulated rat. , 2010, , 93-113.		23
45	Corticolimbic catecholamines in stress: a computational model of the appraisal of controllability. Brain Structure and Function, 2015, 220, 1339-1353.	2.3	23
46	Development of goal-directed action selection guided by intrinsic motivations: an experiment with children. Experimental Brain Research, 2014, 232, 2167-2177.	1.5	21
47	Generalisation, decision making, and embodiment effects in mental rotation: A neurorobotic architecture tested with a humanoid robot. Neural Networks, 2015, 72, 31-47.	5.9	21
48	Interplay of prefrontal cortex and amygdala during extinction of drug seeking. Brain Structure and Function, 2017, 223, 1071-1089.	2.3	19
49	Know Your Body Through Intrinsic Goals. Frontiers in Neurorobotics, 2018, 12, 30.	2.8	19
50	Editorial: Intrinsically Motivated Open-Ended Learning in Autonomous Robots. Frontiers in Neurorobotics, 2019, 13, 115.	2.8	19
51	General differential Hebbian learning: Capturing temporal relations between events in neural networks and the brain. PLoS Computational Biology, 2018, 14, e1006227.	3.2	18
52	The Relationship Between Specific Pavlovian Instrumental Transfer and Instrumental Reward Probability. Frontiers in Psychology, 2015, 6, 1697.	2.1	16
53	Forward and Bidirectional Planning Based on Reinforcement Learning and Neural Networks in a Simulated Robot. Lecture Notes in Computer Science, 2003, , 179-200.	1.3	15
54	Modelling mental rotation in cognitive robots. Adaptive Behavior, 2013, 21, 299-312.	1.9	15

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55	Interplay of Rhythmic and Discrete Manipulation Movements During Development: A Policy-Search Reinforcement-Learning Robot Model. IEEE Transactions on Cognitive and Developmental Systems, 2016, 8, 152-170.	3.8	15
56	Computational Modeling of Catecholamines Dysfunction in Alzheimerâ€™s Disease at Pre-Plaque Stage. Journal of Alzheimer's Disease, 2020, 77, 275-290.	2.6	15
57	Evolution of Collective Behavior in a Team of Physically Linked Robots. Lecture Notes in Computer Science, 2003, , 581-592.	1.3	14
58	Different Dopaminergic Dysfunctions Underlying Parkinsonian Akinesia and Tremor. Frontiers in Neuroscience, 2019, 13, 550.	2.8	14
59	Autonomous Reinforcement Learning of Multiple Interrelated Tasks. , 2019, , .		14
60	A Reinforcement Learning Architecture That Transfers Knowledge Between Skills When Solving Multiple Tasks. IEEE Transactions on Cognitive and Developmental Systems, 2019, 11, 292-317.	3.8	14
61	A neural-network reinforcement-learning model of domestic chicks that learn to localize the centre of closed arenas. Philosophical Transactions of the Royal Society B: Biological Sciences, 2007, 362, 383-401.	4.0	13
62	Exploration and learning in capuchin monkeys (Sapajus spp.): the role of actionâ€“outcome contingencies. Animal Cognition, 2014, 17, 1081-1088.	1.8	13
63	Intrinsically motivated discovered outcomes boost user's goals achievement in a humanoid robot. , 2017, , .		13
64	The Hierarchical Organisation of Cortical and Basal-Ganglia Systems: A Computationally-Informed Review and Integrated Hypothesis. , 2013, , 237-270.		13
65	Intrinsic Motivations Drive Learning of Eye Movements: An Experiment with Human Adults. PLoS ONE, 2015, 10, e0118705.	2.5	13
66	A mechatronic platform for behavioral analysis on nonhuman primates. Journal of Integrative Neuroscience, 2012, 11, 87-101.	1.7	12
67	Intrinsic motivation mechanisms for competence acquisition. , 2012, , .		12
68	Bio-Inspired Model Learning Visual Goals and Attention Skills Through Contingencies and Intrinsic Motivations. IEEE Transactions on Cognitive and Developmental Systems, 2018, 10, 326-344.	3.8	12
69	Action Observation With Dual Task for Improving Cognitive Abilities in Parkinsonâ€™s Disease: A Pilot Study. Frontiers in Systems Neuroscience, 2019, 13, 7.	2.5	11
70	Sensorimotor Contingencies as a Key Drive of Development: From Babies to Robots. Frontiers in Neurorobotics, 2019, 13, 98.	2.8	11
71	A Computational Model of the Amygdala Nucleiâ€™s Role in Second Order Conditioning. Lecture Notes in Computer Science, 2008, , 321-330.	1.3	11
72	Learning to select targets within targets in reaching tasks. , 2007, , .		10

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73	Hierarchical reinforcement learning and central pattern generators for modeling the development of rhythmic manipulation skills. , 2011, , .		10
74	Modular and hierarchical brain organization to understand assimilation, accommodation and their relation to autism in reaching tasks: a developmental robotics hypothesis. Adaptive Behavior, 2014, 22, 304-329.	1.9	10
75	An Embodied Agent Learning Affordances With Intrinsic Motivations and Solving Extrinsic Tasks With Attention and One-Step Planning. Frontiers in Neurorobotics, 2019, 13, 45.	2.8	10
76	Self-Organization as Phase Transition in Decentralized Groups of Robots: A Study Based on Boltzmann Entropy. Advanced Information and Knowledge Processing, 2008, , 127-146.	0.3	10
77	Integrating Epistemic Action (Active Vision) and Pragmatic Action (Reaching): A Neural Architecture for Camera-Arm Robots. Lecture Notes in Computer Science, 2008, , 220-229.	1.3	10
78	Toward an integrated biomimetic model of reaching. , 2007, , .		9
79	How can bottom-up information shape learning of top-down attention-control skills?. , 2010, , .		9
80	The Role of Learning and Kinematic Features in Dexterous Manipulation: A Comparative Study with Two Robotic Hands. International Journal of Advanced Robotic Systems, 2013, 10, 340.	2.1	9
81	A computational model of language functions in flexible goal-directed behaviour. Scientific Reports, 2020, 10, 21623.	3.3	9
82	Anticipations, Brains, Individual and Social Behavior: An Introduction to Anticipatory Systems. Lecture Notes in Computer Science, 2006, , 1-18.	1.3	9
83	Deciding Which Skill to Learn When: Temporal-Difference Competence-Based Intrinsic Motivation (TD-CB-IM). , 2013, , 257-278.		9
84	A Model of Reaching that Integrates Reinforcement Learning and Population Encoding of Postures. Lecture Notes in Computer Science, 2006, , 381-393.	1.3	8
85	A reinforcement learning model of reaching integrating kinematic and dynamic control in a simulated arm robot. , 2010, , .		8
86	A bio-inspired attention model of anticipation in gaze-contingency experiments with infants. , 2012, , .		8
87	Autonomous selection of the “what” and the “how” of learning: An intrinsically motivated system tested with a two armed robot. , 2014, , .		8
88	Acceptability of the Transitional Wearable Companion â€œ+meâ€•in Children With Autism Spectrum Disorder: A Comparative Pilot Study. Frontiers in Psychology, 2020, 11, 951.	2.1	8
89	Cumulative Learning Through Intrinsic Reinforcements. , 2014, , 107-122.		8
90	Strengths and synergies of evolved and designed controllers: A study within collective robotics. Artificial Intelligence, 2009, 173, 857-875.	5.8	7

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91	Learning Epistemic Actions in Model-Free Memory-Free Reinforcement Learning: Experiments with a Neuro-robotic Model. Lecture Notes in Computer Science, 2013, , 191-203.	1.3	6
92	Different Genetic Algorithms and the Evolution of Specialization: A Study with Groups of Simulated Neural Robots. Artificial Life, 2013, 19, 221-253.	1.3	5
93	Self-Organization as Phase Transition in Decentralized Groups of Robots: A Study Based on Boltzmann Entropy. Advanced Information and Knowledge Processing, 2013, , 157-177.	0.3	5
94	The architecture challenge: Future artificial-intelligence systems will require sophisticated architectures, and knowledge of the brain might guide their construction. Behavioral and Brain Sciences, 2017, 40, e254.	0.7	5
95	Action-outcome contingencies as the engine of open-ended learning: computational models and developmental experiments. , 2018, , .		5
96	A Computational Model Integrating Multiple Phenomena on Cued Fear Conditioning, Extinction, and Reinstatement. Frontiers in Systems Neuroscience, 2020, 14, 569108.	2.5	5
97	The â€œMechatronic Boardâ€: A Tool to Study Intrinsic Motivations in Humans, Monkeys, and Humanoid Robots. , 2013, , 411-432.		5
98	AFFORDANCES AND COMPATIBILITY EFFECTS: A NEURAL-NETWORK COMPUTATIONAL MODEL. , 2009, , .		5
99	A generative spiking neural-network model of goal-directed behaviour and one-step planning. PLoS Computational Biology, 2020, 16, e1007579.	3.2	5
100	The Development of Reaching and Grasping. , 2018, , 319-348.		5
101	Analysing autonomous open-ended learning of skills with different interdependent subgoals in robots. , 2021, , .		5
102	Affordances of distractors and compatibility effects: a study with the computational model TRoPICALS. Nature Precedings, 2011, , .	0.1	4
103	Reinforcement learning algorithms that assimilate and accommodate skills with multiple tasks. , 2012, , .		4
104	Learning where to look with movement-based intrinsic motivations: A bio-inspired model. , 2014, , .		4
105	Learning Abstract Representations Through Lossy Compression of Multimodal Signals. IEEE Transactions on Cognitive and Developmental Systems, 2023, 15, 348-360.	3.8	4
106	From Sensorimotor to Higher-Level Cognitive Processes: An Introduction to Anticipatory Behavior Systems. Lecture Notes in Computer Science, 2009, , 1-9.	1.3	4
107	A McKibben muscle arm learning equilibrium postures. , 2012, , .		3
108	A mechatronic platform for behavioral studies on infants. , 2012, , .		3

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109	Acceptability of the Transitional Wearable Companion â€œ+meâ€•in Typical Children: A Pilot Study. Frontiers in Psychology, 2019, 10, 125.	2.1	3
110	Internal manipulation of perceptual representations in human flexible cognition: A computational model. Neural Networks, 2021, 143, 572-594.	5.9	3
111	Leveraging curiosity to encourage social interactions in children with Autism Spectrum Disorder: preliminary results using the interactive toy PlusMe. , 2022, , .		3
112	Integrating unsupervised and reinforcement learning in human categorical perception: A computational model. PLoS ONE, 2022, 17, e0267838.	2.5	3
113	The role of thumb opposition in cyclic manipulation: A study with two different robotic hands. , 2012, , .		2
114	A Computational Hypothesis on How Serotonin Regulates Catecholamines in the Pathogenesis of Depressive Apathy. Springer Series in Cognitive and Neural Systems, 2019, , 127-134.	0.1	2
115	A NEURAL-NETWORK MODEL OF THE DYNAMICS OF HUNGER, LEARNING, AND ACTION VIGOR IN MICE. , 2009, , .		2
116	Coordination and Behaviour Integration in Cooperating Simulated Robots. , 2004, , 385-394.		2
117	A Reinforcement-Learning Model of Top-Down Attention Based on a Potential-Action Map. Lecture Notes in Computer Science, 2008, , 161-184.	1.3	2
118	C-GRAIL: Autonomous Reinforcement Learning of Multiple and Context-Dependent Goals. IEEE Transactions on Cognitive and Developmental Systems, 2023, 15, 210-222.	3.8	2
119	Interactive soft toys to support social engagement through sensory-motor plays in early intervention of kids with special needs. , 2022, , .		2
120	Research on cognitive robotics at the Institute of Cognitive Sciences and Technologies, National Research Council of Italy. Cognitive Processing, 2011, 12, 367-374.	1.4	1
121	A cognitive robotic model of mental rotation. , 2013, , .		1
122	Intrinsic Motivations and Planning to Explain Tool-Use Development: A Study With a Simulated Robot Model. IEEE Transactions on Cognitive and Developmental Systems, 2022, 14, 75-89.	3.8	1
123	â€œX-8â€• An Experimental Interactive Toy to Support Turn-Taking Games in Children with Autism Spectrum Disorders. Communications in Computer and Information Science, 2021, , 233-239.	0.5	1
124	REAL 2021 â€“ Robot open-Ended Autonomous Learning: A Competition and Benchmark. , 2021, , .		1
125	Emotions Modulate Affordances-Related Motor Responses: A Priming Experiment. Frontiers in Psychology, 0, 13, .	2.1	1
126	Computational and Robotic Models of the Hierarchical Organization of Behavior: An Overview. , 2013, , 1-10.		0

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127	A Testbed for Neural-Network Models Capable of Integrating Information in Time. Lecture Notes in Computer Science, 2006, , 189-217.	1.3	0
128	Neural Circuits Underlying Social Fear in Rodents: An Integrative Computational Model. Frontiers in Systems Neuroscience, 2022, 16, 841085.	2.5	0
129	Endowing Artificial Systems with Anticipatory Capabilities: Success Cases. Lecture Notes in Computer Science, 0, , 237-254.	1.3	0
130	A Biologically Inspired Neural Network Model to Gain Insight Into the Mechanisms of Post-Traumatic Stress Disorder and Eye Movement Desensitization and Reprocessing Therapy. Frontiers in Psychology, 0, 13, .	2.1	0