Chrystopher L Nehaniv

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

154 papers	1,903 citations	24 h-index	38 g-index
172 ext. papers	2,175 ext. citations	1.3 avg, IF	4.61 L-index

#	Paper	IF	Citations
154	Exploring Tetris as a Transformation Semigroup. *Springer Proceedings in Mathematics and Statistics*, **2021**, 71-80	0.2	
153	Cartpole Problem with PDL and GP Using Multi-objective Fitness Functions Differing in a Priori Knowledge. *Lecture Notes in Computer Science*, **2021**, 106-117	0.9	
152	A Bestiary of Transformation Semigroups for the Holonomy Decomposition. *Springer Proceedings in Mathematics and Statistics*, **2021**, 37-46	0.2	
151	Spatial Iterated Prisoner's Dilemma as a Transformation Semigroup. *Springer Proceedings in Mathematics and Statistics*, **2021**, 47-57	0.2	
150	Effects of Gaze and Arm Motion Kinesics on a Humanoid's Perceived Confidence, Eagerness to Learn, and Attention to the Task in a Teaching Scenario **2021**,		2
149	Valentino Braitenberg's Table: Downhill Innovation of Vehicles via Darwinian Evolution. *Communications in Computer and Information Science*, **2021**, 57-72	0.3	
148	Algebraic Structure and Complexity of Bootstrap Percolation with External Inputs. *Springer Proceedings in Mathematics and Statistics*, **2021**, 411-421	0.2	
147	Algebraic Structure of the Varikon Box. *Springer Proceedings in Mathematics and Statistics*, **2021**, 27-36	0.2	0
146	Impact of nonverbal robot behaviour on human teachers' perceptions of a learner robot. *Interaction Studies*, **2021**, 22, 141-176	1.3	1
145	Interaction Histories and Short-Term Memory: Enactive Development of Turn-Taking Behaviours in a Childlike Humanoid Robot. *Philosophies*, **2019**, 4, 26	0.7	2
144	Robots Learning to Say 'No'. *ACM Transactions on Human-Robot Interaction*, **2019**, 8, 1-26	3.2	1
143	Constructive Biology of Emotion Systems: First- and Second-Person Methods for Grounding Adaptation in a Biological and Social World. *Intelligent Systems, Control and Automation: Science and Engineering*, **2019**, 105-128	0.6	
142	Measuring Time with Minimal Clocks. *Artificial Life*, **2019**, 25, 383-409	1.4	
141	Robots That Say 'No': Affective Symbol Grounding and the Case of Intent Interpretations. *IEEE Transactions on Cognitive and Developmental Systems*, **2018**, 10, 530-544	3	4
140	Towards the Mind of a Humanoid: Does a Cognitive Robot Need a Self? - Lessons from Neuroscience **2018**,		2
139	Philosophy of Computation. *Natural Computing Series*, **2018**, 153-184	2.5	2
138	The maximal subgroups and the complexity of the flow semigroup of finite (di)graphs. *International Journal of Algebra and Computation*, **2017**, 27, 863-886	0.4	

137	**2017**,		2
136	Enhancing Exploration and Exploitation of NSGA-II with GP and PDL. *Lecture Notes in Computer Science*, **2017**, 349-361	0.9	1
135	Embodied Language Learning and Cognitive Bootstrapping: Methods and Design Principles. *International Journal of Advanced Robotic Systems*, **2016**, 13, 105	1.4	7
134	Length of polynomials over finite groups. *Journal of Computer and System Sciences*, **2015**, 81, 1614-1622	1	2
133	Symmetry structure in discrete models of biochemical systems: natural subsystems and the weak control hierarchy in a new model of computation driven by interactions. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2015**, 373,	3	13
132	Computational Understanding and Manipulation of Symmetries. *Lecture Notes in Computer Science*, **2015**, 17-30	0.9	
131	General Self-Motivation and Strategy Identification: Case Studies Based on Sokoban and Pac-Man. *IEEE Transactions on Games*, **2014**, 6, 1-17		12
130	The ITALK project: a developmental robotics approach to the study of individual, social, and linguistic learning. *Topics in Cognitive Science*, **2014**, 6, 534-44	2.5	15
129	SgpDec: Cascade (De)Compositions of Finite Transformation Semigroups and Permutation Groups. *Lecture Notes in Computer Science*, **2014**, 75-82	0.9	8
128	Exploring the concept of interaction computing through the discrete algebraic analysis of the Belousov-Zhabotinsky reaction. *BioSystems*, **2013**, 112, 145-62	1.9	5
127	Automated Analysis of Mutual Gaze in Human Conversational Pairs **2013**, 41-60		3
126	Temporal emphasis for goal extraction in task demonstration to a humanoid robot by naive users **2013**,		1
125	Interaction and experience in enactive intelligence and humanoid robotics **2013**,		8
124	Perception-action loops of multiple agents: informational aspects and the impact of coordination. *Theory in Biosciences*, **2012**, 131, 149-59	1.3	9
123	Algebraic Analysis of the Computation in the Belousov-Zhabotinksy Reaction. *Lecture Notes in Computer Science*, **2012**, 216-224	0.9	
122	Tutor Spotter: Proposing a Feature Set and Evaluating It in a Robotic System. *International Journal of Social Robotics*, **2012**, 4, 131-146	4	31
121	Robot acquisition of lexical meaning - moving towards the two-word stage **2012**,		6
120	Better be reactive at the beginning. Implications of the first seconds of an encounter for the tutoring style in human-robot-interaction **2012**,		7

119	Mutual gaze, personality, and familiarity: Dual eye-tracking during conversation **2012**,		31
118	Interactive language learning by robots: the transition from babbling to word forms. *PLoS ONE*, **2012**, 7, e38236	3.7	22
117	Heat-Maps and Visualization for Heterogeneous Biomedical Data Based on Information Distance Geometry. *Lecture Notes in Computer Science*, **2012**, 183-187	0.9	0
116	Towards using prosody to scaffold lexical meaning in robots **2011**,		6
115	Evolving robot controllers in PDL using genetic programming **2011**,		2
114	Evolving Sims's creatures for bipedal gait **2011**,		2
113	Think globally, sense locally: From local information to global features **2011**,		2
112	On Straight Words and Minimal Permutators in Finite Transformation Semigroups. *Lecture Notes in Computer Science*, **2011**, 115-124	0.9	1
111	Impoverished Empowerment: Meaningful Action Sequence Generation through Bandwidth Limitation. *Lecture Notes in Computer Science*, **2011**, 294-301	0.9	5
110	Hierarchical Behaviours: Getting the Most Bang for Your Bit. *Lecture Notes in Computer Science*, **2011**, 342-349	0.9	6
109	The acquisition of word semantics by a humanoid robot via interaction with a human tutor. *Advances in Interaction Studies*, **2011**, 211-234		5
108	Robots That Say No *Lecture Notes in Computer Science*, **2011**, 158-166	0.9	2
107	Guidelines for researchers and practitioners designing software and software trials for children with autism. *Journal of Assistive Technologies*, **2010**, 4, 38-48		37
106	Genetic algorithms and their application to in silico evolution of genetic regulatory networks. *Methods in Molecular Biology*, **2010**, 673, 297-321	1.4	5
105	Drum-mate: interaction dynamics and gestures in human humanoid drumming experiments. *Connection Science*, **2010**, 22, 103-134	2.8	24
104	. *IEEE Transactions on Autonomous Mental Development*, **2010**, 2, 167-195		101
103	Stochastic model of template-directed elongation processes in biology. *BioSystems*, **2010**, 102, 55-60	1.9	
102	Transformation Semigroups as Constructive Dynamical Spaces. *Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering*, **2010**, 245-265	0.2	7

101	KASPAR – A Minimally Expressive Humanoid Robot for Human–Robot Interaction Research. *Applied Bionics and Biomechanics*, **2009**, 6, 369-397	1.6	112
100	LOOKING FOR EVIDENCE OF DIFFERENTIATION AND COOPERATION: NATURAL MEASURES FOR THE STUDY OF EVOLUTION OF MULTICELLULARITY. *International Journal of Modeling, Simulation, and Scientific Computing*, **2009**, 12, 255-271	0.8	
99	KASPAR – a minimally expressive humanoid robot for human–robot interaction research. *Applied Bionics and Biomechanics*, **2009**, 6, 369-397	1.6	144
98	Effects of Embodiment and Gestures on Social Interaction in Drumming Games with a Humanoid Robot. *Advanced Robotics*, **2009**, 23, 1951-1996	1.7	64
97	Dude, where is my sex gene? – Persistence of sex over evolutionary time in cellular automata **2009** ,		1
96	A constructivist approach to robot language learning via simulated babbling and holophrase extraction **2009**,		5
95	What is Needed for a Robot to Acquire Grammar? Some Underlying Primitive Mechanisms for the Synthesis of Linguistic Ability. *IEEE Transactions on Autonomous Mental Development*, **2009**, 1, 187-195		5
94	Applications of Automata Theory and Algebra **2009**,		16
93	Regulation of gene regulation - smooth binding with dynamic affinity affects evolvability **2008**,		3
92	Computational memory architectures for autobiographic agents interacting in a complex virtual environment: a working model. *Connection Science*, **2008**, 20, 21-65	2.8	25
91	What is an Appropriate Theory of Imitation for a Robot Learner? **2008**,		1
90	Emergent dynamics of turn-taking interaction in drumming games with a humanoid robot **2008**,		25
89	Teaching robot companions: the role of scaffolding and event structuring. *Connection Science*, **2008** , 20, 111-134	2.8	7
88	Behaviour delay and robot expressiveness in child-robot interactions **2008**,		23
87	Hierarchical coordinate systems for understanding complexity and its evolution, with applications to genetic regulatory networks. *Artificial Life*, **2008**, 14, 299-312	1.4	16
86	Genetic regulatory network models of biological clocks: evolutionary history matters. *Artificial Life*, **2008**, 14, 135-48	1.4	15
85	Bio-logic: gene expression and the laws of combinatorial logic. *Artificial Life*, **2008**, 14, 121-33	1.4	21
84	Developing social action capabilities in a humanoid robot using an interaction history architecture **2008**,		8

83	Naturally occurring gestures in a human Robot teaching scenario. *Interaction Studies*, **2008**, 9, 519-550	1.3	6
82	Discriminating coding, non-coding and regulatory regions using rescaled range and detrended fluctuation analysis. *BioSystems*, **2008**, 91, 183-94	1.9	9
81	Do motifs reflect evolved function?--No convergent evolution of genetic regulatory network subgraph topologies. *BioSystems*, **2008**, 94, 68-74	1.9	39
80	Automatic analysis of computation in biochemical reactions. *BioSystems*, **2008**, 94, 126-34	1.9	10
79	Algebraic properties of automata associated to Petri nets and applications to computation in biological systems. *BioSystems*, **2008**, 94, 135-44	1.9	13
78	Communication and complexity in a GRN-based multicellular system for graph colouring. *BioSystems*, **2008**, 94, 28-33	1.9	1
77	An assertion concerning functionally complete algebras and NP-completeness. *Theoretical Computer Science*, **2008**, 407, 591-595	1.1	9
76	Keep your options open: an information-based driving principle for sensorimotor systems. *PLoS ONE*, **2008**, 3, e4018	3.7	44
75	Creating a software to promote understanding about narrative in children with autism: Reflecting on the design of feedback and opportunities to reason **2007**,		17
74	**2007**,		5
73	Self-Imitation and Environmental Scaffolding for Robot Teaching. *International Journal of Advanced Robotic Systems*, **2007**, 4, 14	1.4	15
72	The narrative construction of our (social) world: steps towards an interactive learning environment for children with autism. *Universal Access in the Information Society*, **2007**, 6, 145-157	2.5	14
71	Grounded Sensorimotor Interaction Histories in an Information Theoretic Metric Space for Robot Ontogeny. *Adaptive Behavior*, **2007**, 15, 167-187	1.1	21
70	Representations of space and time in the maximization of information flow in the perception-action loop. *Neural Computation*, **2007**, 19, 2387-432	2.9	49
69	Experimental comparisons of observational learning mechanisms for movement imitation in mobile robots. *Interaction Studies*, **2007**, 8, 307-335	1.3	2
68	Correspondence mapping induced state and action metrics for robotic imitation. *IEEE Transactions on Systems, Man, and Cybernetics*, **2007**, 37, 299-307		44
67	The Essential Motif that wasn't there: Topological and Lesioning Analysis of Evolved Genetic Regulatory Networks **2007**,		1
66	Issues in Human/Robot Task Structuring and Teaching **2007**,		5

65	Drum-mate: A human-humanoid drumming experience **2007**,		6
64	Maximization of Potential Information Flow as a Universal Utility for Collective Behaviour **2007**,		12
63	Development Via Information Self-structuring of Sensorimotor Experience and Interaction **2007**, 87-98		3
62	Clues from Information Theory Indicating a Phased Emergence of Grammar **2007**, 71-85		
61	Homophony and Disambiguation Through Sequential Processes in the Evolution of Language. *Lecture Notes in Computer Science*, **2007**, 315-324	0.9	1
60	Mirroring, Deixis, and Interaction Topology in the Emergence of Shared Vocabularies. *Lecture Notes in Computer Science*, **2007**, 325-334	0.9	
59	Constructing the Basic Umwelt of Artificial Agents: An Information-Theoretic Approach **2007**, 375-383		5
58	The art of designing robot faces **2006**,		52
57	Teaching robots by moulding behavior and scaffolding the environment **2006**,		65
56	Distribution and Recognition of Gestures in Human-Robot Interaction **2006**,		7
55	From unknown sensors and actuators to actions grounded in sensorimotor perceptions. *Connection Science*, **2006**, 18, 121-144	2.8	53
54	What Software Evolution and Biological Evolution Don't Have in Common **2006**,		8
53	Naturally Occurring Gestures in a Human-Robot Teaching Scenario **2006**,		4
52	Action, State and Effect Metrics for Robot Imitation **2006**,		15
51	Using Self-Imitation to Direct Learning **2006**,		3
50	Perception of Robot Smiles and Dimensions for Human-Robot Interaction Design **2006**,		54
49	Making Sense of the Sensory Data Coordinate Systems by Hierarchical Decomposition. *Lecture Notes in Computer Science*, **2006**, 333-340	0.9	1
48	Construction of an Internal Predictive Model by Event Anticipation. *Lecture Notes in Computer Science*, **2006**, 218-232	0.9	2

47	Extending the Temporal Horizon of Autonomous Robots **2006**, 389-395		2
46	Algebraic Hierarchical Decomposition of Finite State Automata: Comparison of Implementations for Krohn-Rhodes Theory. *Lecture Notes in Computer Science*, **2005**, 315-316	0.9	7
45	Algebraic Theory of Automata Networks **2005**,		17
44	All Else Being Equal Be Empowered. *Lecture Notes in Computer Science*, **2005**, 744-753	0.9	38
43	Self-replication, Evolvability and Asynchronicity in Stochastic Worlds. *Lecture Notes in Computer Science*, **2005**, 126-169	0.9	3
42	ASYNCHRONOUS AUTOMATA NETWORKS CAN EMULATE ANY SYNCHRONOUS AUTOMATA NETWORK. *International Journal of Algebra and Computation*, **2004**, 14, 719-739	0.4	23
41	Towards robot cultures?. *Interaction Studies*, **2004**, 5, 3-44	1.3	17
40	Evolving Embodied Genetic Regulatory Network-Driven Control Systems. *Lecture Notes in Computer Science*, **2003**, 266-277	0.9	29
39	The Robot in the Swarm: An Investigation into Agent Embodiment within Virtual Robotic Swarms. *Lecture Notes in Computer Science*, **2003**, 829-838	0.9	1
38	Finite semigroups, feedback, and the Letichevsky criteria on non-empty words in finite automata. *Theoretical Computer Science*, **2003**, 302, 295-317	1.1	
37	Comparing Different Control Architectures for Autobiographic Agents in Static Virtual Environments. *Lecture Notes in Computer Science*, **2003**, 182-191	0.9	6
36	Evolvability of the Genotype-Phenotype Relation in Populations of Self-Replicating Digital Organisms in a Tierra-Like System. *Lecture Notes in Computer Science*, **2003**, 238-247	0.9	3
35	HOLONOMY EMBEDDING OF ARBITRARY STABLE SEMIGROUPS. *International Journal of Algebra and Computation*, **2002**, 12, 791-810	0.4	3
34	The segmentation of speech and its implications for the emergence of language structure. *Interaction Studies*, **2001**, 4, 161-182		4
33	The Cognitive Dimensions of an Artifact vis-Ævis Individual Human Users: Studies with Notations for the Temporal Specification of Interactive Systems. *Lecture Notes in Computer Science*, **2001**, 342-355	0.9	
32	Fact and Artifact: Reification and Drift in the History and Growth of Interactive Software Systems. *Lecture Notes in Computer Science*, **2001**, 25-39	0.9	6
31	The essence of embodiment: A framework for understanding and exploiting structural coupling between system and environment. *AIP Conference Proceedings*, **2000**,	0	7
30	Evolvability in biologically inspired robotics: solutions for achieving open-ended evolution **2000**,		3

29	On complete systems of automata. *Theoretical Computer Science*, **2000**, 245, 27-54	1.1	2
28	The Right Stuff: Appropriate Mathematics for Evolutionary and Developmental Biology (Editors' Introduction to the Special Issue). *Artificial Life*, **2000**, 6, 1-2	1.4	1
27	The evolution and understanding of hierarchical complexity in biology from an algebraic perspective. *Artificial Life*, **2000**, 6, 45-67	1.4	36
26	OF HUMMINGBIRDS AND HELICOPTERS: AN ALGEBRAIC FRAMEWORK FOR INTERDISCIPLINARY STUDIES OF IMITATION AND ITS APPLICATIONS. *World Scientific Series in Robotics and Intelligent Systems*, **2000**, 136-161		33
25	16. Living with Socially Intelligent Agents: A Cognitive Technology view. *Advances in Consciousness Research*, **2000**, 415		7
24	Constructive biology and approaches to temporal grounding in postreactive robotics **1999**,		4
23	Algebraic Engineering **1999**,		2
22	The Second Person Meaning and Metaphors. *Lecture Notes in Computer Science*, **1999**, 380-388	0.9	3
21	On Bots and Bacteria: Ontology Independent Embodiment. *Lecture Notes in Computer Science*, **1999** , 339-343	0.9	10
20	Computation for Metaphors, Analogy and Agents. *Lecture Notes in Computer Science*, **1999**, 1-11	0.9	3
19	Linear analysis of genetic algorithms. *Theoretical Computer Science*, **1998**, 200, 101-134	1.1	39
18	From relation to emulation: The Covering Lemma for transformation semigroups. *Journal of Pure and Applied Algebra*, **1996**, 107, 75-87	0.6	10
17	Subsemigroups and complexity via the Presentation Lemma. *Journal of Pure and Applied Algebra*, **1995**, 101, 245-289	0.6	13
16	MONOIDS AND GROUPS ACTING ON TREES: CHARACTERIZATIONS, GLUING, AND APPLICATIONS OF THE DEPTH PRESERVING ACTIONS. *International Journal of Algebra and Computation*, **1995**, 05, 137-172	0.4	4
15	Cascade Decomposition of Arbitrary Semigroups **1995**, 391-425		
14	Solving the correspondence problem in robotic imitation across embodiments: synchrony, perception and culture in artifacts249-274		2
13	The dynamic emergence of categories through imitation179-194		1
12	Learning of gestures by imitation in a humanoid robot153-178		33

11	A Bayesian model of imitation in infants and robots217-248	14
10	Introduction: the constructive interdisciplinary viewpoint for understanding mechanisms and models of imitation and social learning1-18	3
9	Nine billion correspondence problems35-46	2
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7	Mirroring and mind-reading67-70	
6	What to imitate?131-134	
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