Martin V Butz

List of Publications by Year
in descending order

88 papers	1,541 citations	279798 23 h-index	395702 33 g-index
98 all docs	98 docs citations	98 times ranked	959 citing authors

#	Article	IF	Citations
1	The 2009 Simulated Car Racing Championship. IEEE Transactions on Games, 2010, 2, 131-147.	1.4	70
2	Anticipatory Learning Classifier Systems. Genetic Algorithms and Evolutionary Computation, 2002, , .	0.3	63
3	Exploiting redundancy for flexible behavior: Unsupervised learning in a modular sensorimotor control architecture.. Psychological Review, 2007, 114, 1015-1046.	3.8	61
4	Habitual and goal-directed factors in (everyday) object handling. Experimental Brain Research, 2011, 213, 371-382.	1.5	61
5	Kernel-based, ellipsoidal conditions in the real-valued XCS classifier system. , 2005, , .		53
6	Internal Models and Anticipations in Adaptive Learning Systems. Lecture Notes in Computer Science, 2003, , 86-109.	1.3	48
7	It's in the eyes: Planning precise manual actions before execution. Journal of Vision, 2016, 16, 18.	0.3	47
8	Automated Global Structure Extraction for Effective Local Building Block Processing in XCS. Evolutionary Computation, 2006, 14, 345-380.	3.0	46
9	A cognitive definition of computational thinking in primary education. Computers and Education, 2022, 179, 104425.	8.3	45
10	Toward a Unified Sub-symbolic Computational Theory of Cognition. Frontiers in Psychology, 2016, 7, 925.	2.1	42
11	Optimized sensory-motor couplings plus strategy extensions for the TORCS car racing challenge. , 2009, , .		41
12	Planning and control of hand orientation in grasping movements. Experimental Brain Research, 2010, 202, 867-878.	1.5	41
13	Balanced echo state networks. Neural Networks, 2012, 36, 35-45.	5.9	38
14	The continuous end-state comfort effect: weighted integration of multiple biases. Psychological Research, 2012, 76, 345-363.	1.7	38
15	Anticipatory Behavior: Exploiting Knowledge About the Future to Improve Current Behavior. Lecture Notes in Computer Science, 2003, , 1-10.	1.3	37
16	Strong, Stable, and Reliable Fitness Pressure in XCS due to Tournament Selection. Genetic Programming and Evolvable Machines, 2005, 6, 53-77.	2.2	37
17	Learning, planning, and control in a monolithic neural event inference architecture. Neural Networks, 2019, 117, 135-144.	5.9	37
18	Explorations of anticipatory behavioral control (ABC): a report from the cognitive psychology unit of the University of Würzburg. Cognitive Processing, 2007, 8, 133-142.	1.4	35

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19	Goal-oriented gaze strategies afforded by object interaction. Vision Research, 2015, 106, 47-57.	1.4	34
20	Behavioral Bias for Food Reflected in Hand Movements: A Preliminary Study with Healthy Subjects. Cyberpsychology, Behavior, and Social Networking, 2016, 19, 120-126.	3.9	30
21	Intelligent problem-solving as integrated hierarchical reinforcement learning. Nature Machine Intelligence, 2022, 4, 11-20.	16.0	29
22	Influence of Motor Planning on Distance Perception within the Peripersonal Space. PLoS ONE, 2012, 7, e34880.	2.5	28
23	Optimizing recurrent reservoirs with neuro-evolution. Neurocomputing, 2016, 192, 128-138.	5.9	27
24	Anticipations Control Behavior: Animal Behavior in an Anticipatory Learning Classifier System. Adaptive Behavior, 2002, 10, 75-96.	1.9	26
25	Self-Organizing Sensorimotor Maps Plus Internal Motivations Yield Animal-Like Behavior. Adaptive Behavior, 2010, 18, 315-337.	1.9	23
26	Resource management and scalability of the XCSF learning classifier system. Theoretical Computer Science, 2012, 425, 126-141.	0.9	21
27	Eventâ€Predictive Cognition: A Root for Conceptual Human Thought. Topics in Cognitive Science, 2021, 13, 10-24.	1.9	21
28	How the Mind Comes into Being. , 2017, , .		19
29	Learning local linear Jacobians for flexible and adaptive robot arm control. Genetic Programming and Evolvable Machines, 2012, 13, 137-157.	2.2	18
30	Problem solution sustenance in XCS: Markov chain analysis of niche support distributions and the impact on computational complexity. Genetic Programming and Evolvable Machines, 2007, 8, 5-37.	2.2	16
31	Remapping motion across modalities: tactile rotations influence visual motion judgments. Experimental Brain Research, 2010, 207, 1-11.	1.5	16
32	A comparative study. , 2010, , .		16
33	The SURE_REACH Model for Motor Learning and Control of a Redundant Arm: From Modeling Human Behavior to Applications in Robotics. Studies in Computational Intelligence, 2010, , 85-106.	0.9	16
34	Embodied learning of a generative neural model for biological motion perception and inference. Frontiers in Computational Neuroscience, 2015, 9, 79.	2.1	16
35	Mario Becomes Cognitive. Topics in Cognitive Science, 2017, 9, 343-373.	1.9	16
36	Mental space maps into the future. Cognition, 2018, 176, 65-73.	2.2	16

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37	Towards Strong AI. KI - Kunstliche Intelligenz, 2021, 35, 91-101.	3.2	15
38	Anticipatory eye fixations reveal tool knowledge for tool interaction. Experimental Brain Research, 2016, 234, 2415-2431.	1.5	14
39	Rubber Hand Illusion Affects Joint Angle Perception. PLoS ONE, 2014, 9, e92854.	2.5	13
40	Inferring Adaptive Goal-Directed Behavior Within Recurrent Neural Networks. Lecture Notes in Computer Science, 2017, , 227-235.	1.3	13
41	Simultaneous learning and filtering without delusions: a Bayes-optimal combination of Predictive Inference and Adaptive Filtering. Frontiers in Computational Neuroscience, 2015, 9, 47.	2.1	12
42	Modular neuron-based body estimation: maintaining consistency over different limbs, modalities, and frames of reference. Frontiers in Computational Neuroscience, 2013, 7, 148.	2.1	11
43	Just Imagine! Learning to Emulate and Infer Actions with a Stochastic Generative Architecture. Frontiers in Robotics and AI, 2016, 3, .	3.2	11
44	Hands Ahead in Mind and Motion: Active Inference in Peripersonal Hand Space. Vision (Switzerland), 2019, 3, 15.	1.2	10
45	The modular modality frame model: continuous body state estimation and plausibility-weighted information fusion. Biological Cybernetics, 2013, 107, 61-82.	1.3	9
46	How Deep Is Your SNARC? Interactions Between Numerical Magnitude, Response Hands, and Reachability in Peripersonal Space. Frontiers in Psychology, 2018, 9, 622.	2.1	9
47	Function approximation with LWPR and XCSF: a comparative study. Evolutionary Intelligence, 2012, 5, 103-116.	3.6	8
48	Anticipation for learning, cognition and education. On the Horizon, 2004, 12, 111-116.	1.9	7
49	Encoding Complete Body Models Enables Task Dependent Optimal Behavior. Neural Networks (IJCNN), International Joint Conference on, 2007, , .	0.0	7
50	The Influence of Human Body Orientation on Distance Judgments. Frontiers in Psychology, 2016, 7, 217.	2.1	7
51	Lost in space: multisensory conflict yields adaptation in spatial representations across frames of reference. Cognitive Processing, 2017, 18, 211-228.	1.4	7
52	XCSF with local deletion: preventing detrimental forgetting. Evolutionary Intelligence, 2012, 5, 117-127.	3.6	6
53	Inherently Constraint-Aware Control of Many-Joint Robot Arms with Inverse Recurrent Models. Lecture Notes in Computer Science, 2017, , 262-270.	1.3	6
54	Emergent Goalâ€Anticipatory Gaze in Infants via Eventâ€Predictive Learning and Inference. Cognitive Science, 2021, 45, e13016.	1.7	6

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55	Effective Racing on Partially Observable Tracks: Indirectly Coupling Anticipatory Egocentric Sensors With Motor Commands. IEEE Transactions on Games, 2011, 3, 31-42.	1.4	5
56	A modular, redundant, multi-frame of reference representation for kinematic chains. , 2011, , .		5
57	In touch with mental rotation: interactions between mental and tactile rotations and motor responses. Experimental Brain Research, 2017, 235, 1063-1079.	1.5	5
58	Autonomous Identification and Goal-Directed Invocation of Event-Predictive Behavioral Primitives. IEEE Transactions on Cognitive and Developmental Systems, 2021, 13, 298-311.	3.8	5
59	Investigating Efficient Learning and Compositionality in Generative LSTM Networks. Lecture Notes in Computer Science, 2020, , 143-154.	1.3	5
60	Tracking moving vehicles using an advanced grid-based Bayesian filter approach. , 2011, , .		4
61	From Sensorimotor to Higher-Level Cognitive Processes: An Introduction to Anticipatory Behavior Systems. Lecture Notes in Computer Science, 2009, , 1-9.	1.3	4
62	Reservoir Sizes and Feedback Weights Interact Non-linearly in Echo State Networks. Lecture Notes in Computer Science, 2012, , 499-506.	1.3	4
63	Integrative Collision Avoidance Within RNN-Driven Many-Joint Robot Arms. Lecture Notes in Computer Science, 2018, , 748-758.	1.3	4
64	Combining Gradient-Based With Evolutionary Online Learning: An Introduction to Learning Classifier Systems. , 2007, , .		3
65	Modeling perspective-taking upon observation of 3D biological motion. , 2014, , .		3
66	Inferring Event-Predictive Goal-Directed Object Manipulations in REPRISE. Lecture Notes in Computer Science, 2019, , 639-653.	1.3	3
67	Learning about others: Modeling social inference through ambiguity resolution. Cognition, 2022, 218, 104862.	2.2	3
68	Combining Gradient-Based With Evolutionary Online Learning: An Introduction to Learning Classifier Systems. , 2007, , .		2
69	Modeling body state-dependent multisensory integration. Cognitive Processing, 2012, 13, 113-116.	1.4	2
70	Fostering Compositionality in Latent, Generative Encodings to Solve the Omniglot Challenge. Lecture Notes in Computer Science, 2021, , 525-536.	1.3	2
71	Latent State Inference in a Spatiotemporal Generative Model. Lecture Notes in Computer Science, 2021, , 384-395.	1.3	2
72	The Impact of Action Effects on Infants' Predictive Gaze Shifts for a Non-Human Grasping Action at 7, 11, and 18 Months. Frontiers in Psychology, 2021, 12, 695550.	2.1	2

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73	Gestalt Perception of Biological Motion: A Generative Artificial Neural Network Model. , 2021, , .		2
74	Inferring, Predicting, and Denoising Causal Wave Dynamics. Lecture Notes in Computer Science, 2020, , 566-577.	1.3	2
75	Modular, Multimodal Arm Control Models. , 2013, , 129-154.		2
76	Gradient-Based Learning of Compositional Dynamics with Modular RNNs. Lecture Notes in Computer Science, 2019, , 484-496.	1.3	2
77	Resourceful Event-Predictive Inference: The Nature of Cognitive Effort. Frontiers in Psychology, 0, 13, .	2.1	2
78	Emergent Effector-Independent Internal Spaces: Adaptation and Intermanual Learning Transfer in Humans and Neural Networks. Neural Networks (IJCNN), International Joint Conference on, 2007, , .	0.0	1
79	Autonomous failure detection and multimodal sensor fusion in a modular arm model. , 2012, , .		1
80	Separating goals from behavioral control: Implications from learning predictive modularizations. New Ideas in Psychology, 2013, 31, 302-312.	1.9	1
81	Dynamic Action Inference with Recurrent Spiking Neural Networks. Lecture Notes in Computer Science, 2021, , 233-244.	1.3	1
82	Learn It First: Grounding Language in Compositional Event-Predictive Encodings. , 2021, , .		1
83	Incorporating Adaptive RNN-Based Action Inference and Sensory Perception. Lecture Notes in Computer Science, 2019, , 543-555.	1.3	1
84	Fostering Event Compression Using Gated Surprise. Lecture Notes in Computer Science, 2020, , 155-167.	1.3	1
85	Improved tracking and behavior anticipation by combining street map information with Bayesian-filtering. , 2013, , .		0
86	Inference of time series components by online co-evolution. Genetic Programming and Evolvable Machines, 0, , 1.	2.2	0
87	Signal Denoising with Recurrent Spiking Neural Networks and Active Tuning. Lecture Notes in Computer Science, 2021, , 220-232.	1.3	0
88	Learning Precise Spike Timings with Eligibility Traces. Lecture Notes in Computer Science, 2020, , 659-669.	1.3	0