Samuel Gershman

List of Publications by Year
in descending order

130 papers	11,970 citations	44069 48 h-index	39675 94 g-index
181 all docs	181 docs citations	181 times ranked	7191 citing authors

#	Article	IF	Citations
1	Model-Based Influences on Humans' Choices and Striatal Prediction Errors. Neuron, 2011, 69, 1204-1215.	8.1	1,388
2	Building machines that learn and think like people. Behavioral and Brain Sciences, 2017, 40, e253.	0.7	978
3	The hippocampus as a predictive map. Nature Neuroscience, 2017, 20, 1643-1653.	14.8	593
4	A tutorial on Bayesian nonparametric models. Journal of Mathematical Psychology, 2012, 56, 1-12.	1.8	430
5	Computational rationality: A converging paradigm for intelligence in brains, minds, and machines. Science, 2015, 349, 273-278.	12.6	380
6	The Curse of Planning. Psychological Science, 2013, 24, 751-761.	3.3	308
7	Reinforcement Learning in Multidimensional Environments Relies on Attention Mechanisms. Journal of Neuroscience, 2015, 35, 8145-8157.	3.6	284
8	Reinforcement Learning and Episodic Memory in Humans and Animals: An Integrative Framework. Annual Review of Psychology, 2017, 68, 101-128.	17.7	280
9	Context, learning, and extinction.. Psychological Review, 2010, 117, 197-209.	3.8	275
10	The successor representation in human reinforcement learning. Nature Human Behaviour, 2017, 1, 680-692.	12.0	250
11	Learning latent structure: carving nature at its joints. Current Opinion in Neurobiology, 2010, 20, 251-256.	4.2	242
12	Predictive representations can link model-based reinforcement learning to model-free mechanisms. PLoS Computational Biology, 2017, 13, e1005768.	3.2	203
13	Retrospective revaluation in sequential decision making: A tale of two systems.. Journal of Experimental Psychology: General, 2014, 143, 182-194.	2.1	192
14	Toward a universal decoder of linguistic meaning from brain activation. Nature Communications, 2018, 9, 963.	12.8	178
15	A Unified Framework for Dopamine Signals across Timescales. Cell, 2020, 183, 1600-1616.e25.	28.9	161
16	Believing in dopamine. Nature Reviews Neuroscience, 2019, 20, 703-714.	10.2	156
17	Dopamine reward prediction errors reflect hidden-state inference across time. Nature Neuroscience, 2017, 20, 581-589.	14.8	152
18	Cost-Benefit Arbitration Between Multiple Reinforcement-Learning Systems. Psychological Science, 2017, 28, 1321-1333.	3.3	150

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19	Deconstructing the human algorithms for exploration. Cognition, 2018, 173, 34-42.	2.2	148
20	Interplay of approximate planning strategies. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 3098-3103.	7.1	145
21	When Does Model-Based Control Pay Off?. PLoS Computational Biology, 2016, 12, e1005090.	3.2	142
22	Multistability and Perceptual Inference. Neural Computation, 2012, 24, 1-24.	2.2	131
23	Human Reinforcement Learning Subdivides Structured Action Spaces by Learning Effector-Specific Values. Journal of Neuroscience, 2009, 29, 13524-13531.	3.6	112
24	Rethinking dopamine as generalized prediction error. Proceedings of the Royal Society B: Biological Sciences, 2018, 285, 20181645.	2.6	111
25	The Successor Representation: Its Computational Logic and Neural Substrates. Journal of Neuroscience, 2018, 38, 7193-7200.	3.6	106
26	The algorithmic architecture of exploration in the human brain. Current Opinion in Neurobiology, 2019, 55, 7-14.	4.2	106
27	Gradual extinction prevents the return of fear: implications for the discovery of state. Frontiers in Behavioral Neuroscience, 2013, 7, 164.	2.0	105
28	Discovering latent causes in reinforcement learning. Current Opinion in Behavioral Sciences, 2015, 5, 43-50.	3.9	104
29	Exploring a latent cause theory of classical conditioning. Learning and Behavior, 2012, 40, 255-268.	1.0	102
30	The Medial Prefrontal Cortex Shapes Dopamine Reward Prediction Errors under State Uncertainty. Neuron, 2018, 98, 616-629.e6.	8.1	100
31	A Unifying Probabilistic View of Associative Learning. PLoS Computational Biology, 2015, 11, e1004567.	3.2	100
32	Neural and Psychological Maturation of Decision-making in Adolescence and Young Adulthood. Journal of Cognitive Neuroscience, 2013, 25, 1807-1823.	2.3	98
33	Structured Event Memory: A neuro-symbolic model of event cognition.. Psychological Review, 2020, 127, 327-361.	3.8	98
34	Moderate levels of activation lead to forgetting in the think/no-think paradigm. Neuropsychologia, 2013, 51, 2371-2388.	1.6	95
35	Human memory reconsolidation can be explained using the temporal context model. Psychonomic Bulletin and Review, 2011, 18, 455-468.	2.8	94
36	Empirical priors for reinforcement learning models. Journal of Mathematical Psychology, 2016, 71, 1-6.	1.8	92

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37	The computational nature of memory modification. ELife, 2017, 6, .	6.0	92
38	Do learning rates adapt to the distribution of rewards?. Psychonomic Bulletin and Review, 2015, 22, 1320-1327.	2.8	91
39	The Successor Representation and Temporal Context. Neural Computation, 2012, 24, 1553-1568.	2.2	88
40	A comparative evaluation of off-the-shelf distributed semantic representations for modelling behavioural data. Cognitive Neuropsychology, 2016, 33, 175-190.	1.1	87
41	Learning the Structure of Social Influence. Cognitive Science, 2017, 41, 545-575.	1.7	86
42	Toward the neural implementation of structure learning. Current Opinion in Neurobiology, 2016, 37, 99-105.	4.2	84
43	Neural Context Reinstatement Predicts Memory Misattribution. Journal of Neuroscience, 2013, 33, 8590-8595.	3.6	81
44	Hippocampal remapping as hidden state inference. ELife, 2020, 9, .	6.0	76
45	Belief state representation in the dopamine system. Nature Communications, 2018, 9, 1891.	12.8	75
46	Statistical Computations Underlying the Dynamics of Memory Updating. PLoS Computational Biology, 2014, 10, e1003939.	3.2	70
47	Pure correlates of exploration and exploitation in the human brain. Cognitive, Affective and Behavioral Neuroscience, 2018, 18, 117-126.	2.0	70
48	Incentives Boost Model-Based Control Across a Range of Severity on Several Psychiatric Constructs. Biological Psychiatry, 2019, 85, 425-433.	1.3	66
49	Time representation in reinforcement learning models of the basal ganglia. Frontiers in Computational Neuroscience, 2014, 7, 194.	2.1	64
50	Novelty and Inductive Generalization in Human Reinforcement Learning. Topics in Cognitive Science, 2015, 7, 391-415.	1.9	64
51	Decision by sampling implements efficient coding of psychoeconomic functions.. Psychological Review, 2018, 125, 985-1001.	3.8	64
52	Uncertainty and exploration.. Decision, 2019, 6, 277-286.	0.5	63
53	How to never be wrong. Psychonomic Bulletin and Review, 2019, 26, 13-28.	2.8	61
54	Explaining compound generalization in associative and causal learning through rational principles of dimensional generalization.. Psychological Review, 2014, 121, 526-558.	3.8	60

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55	Resource-rational decision making. Current Opinion in Behavioral Sciences, 2021, 41, 15-21.	3.9	59
56	Reconsidering the evidence for learning in single cells. ELife, 2021, 10, .	6.0	58
57	Structured, uncertainty-driven exploration in real-world consumer choice. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 13903-13908.	7.1	57
58	Dopamine Ramps Are a Consequence of Reward Prediction Errors. Neural Computation, 2014, 26, 467-471.	2.2	56
59	Compositional inductive biases in function learning. Cognitive Psychology, 2017, 99, 44-79.	2.2	55
60	Controllability governs the balance between Pavlovian and instrumental action selection. Nature Communications, 2019, 10, 5826.	12.8	52
61	Dissociable neural correlates of uncertainty underlie different exploration strategies. Nature Communications, 2020, 11, 2371.	12.8	49
62	Where do hypotheses come from?. Cognitive Psychology, 2017, 96, 1-25.	2.2	48
63	Neural Computations Underlying Causal Structure Learning. Journal of Neuroscience, 2018, 38, 7143-7157.	3.6	46
64	Integrating Models of Interval Timing and Reinforcement Learning. Trends in Cognitive Sciences, 2018, 22, 911-922.	7.8	45
65	Discovery of hierarchical representations for efficient planning. PLoS Computational Biology, 2020, 16, e1007594.	3.2	44
66	Individual differences in learning predict the return of fear. Learning and Behavior, 2015, 43, 243-250.	1.0	42
67	Planning Complexity Registers as a Cost in Metacontrol. Journal of Cognitive Neuroscience, 2018, 30, 1391-1404.	2.3	41
68	The Generative Adversarial Brain. Frontiers in Artificial Intelligence, 2019, 2, 18.	3.4	40
69	Dopamine neuron ensembles signal the content of sensory prediction errors. ELife, 2019, 8, .	6.0	39
70	Causal Inference About Good and Bad Outcomes. Psychological Science, 2019, 30, 516-525.	3.3	38
71	Flexible modulation of sequence generation in the entorhinalâ€“hippocampal system. Nature Neuroscience, 2021, 24, 851-862.	14.8	38
72	Dopamine, Inference, and Uncertainty. Neural Computation, 2017, 29, 3311-3326.	2.2	36

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73	Dopaminergic genes are associated with both directed and random exploration. Neuropsychologia, 2018, 120, 97-104.	1.6	36
74	A theory of learning to infer.. Psychological Review, 2020, 127, 412-441.	3.8	36
75	Perceptual estimation obeys Occam's razor. Frontiers in Psychology, 2013, 4, 623.	2.1	35
76	Model-free and model-based learning processes in the updating of explicit and implicit evaluations. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 6035-6044.	7.1	35
77	Discovering hierarchical motion structure. Vision Research, 2016, 126, 232-241.	1.4	33
78	Context-dependent learning and causal structure. Psychonomic Bulletin and Review, 2017, 24, 557-565.	2.8	33
79	Competition and Cooperation Between Multiple Reinforcement Learning Systems. , 2018, , 153-178.		33
80	Pavlovian Control of Escape and Avoidance. Journal of Cognitive Neuroscience, 2018, 30, 1379-1390.	2.3	32
81	The transdiagnostic structure of mental effort avoidance. Scientific Reports, 2019, 9, 1689.	3.3	32
82	Social structure learning in human anterior insula. ELife, 2020, 9, .	6.0	31
83	Predicting the past, remembering the future. Current Opinion in Behavioral Sciences, 2017, 17, 7-13.	3.9	30
84	Origin of perseveration in the trade-off between reward and complexity. Cognition, 2020, 204, 104394.	2.2	30
85	Discovering social groups via latent structure learning.. Journal of Experimental Psychology: General, 2018, 147, 1881-1891.	2.1	30
86	A topographic latent source model for fMRI data. NeuroImage, 2011, 57, 89-100.	4.2	29
87	Rationally inattentive intertemporal choice. Nature Communications, 2020, 11, 3365.	12.8	29
88	Memory as a Computational Resource. Trends in Cognitive Sciences, 2021, 25, 240-251.	7.8	29
89	The role of state uncertainty in the dynamics of dopamine. Current Biology, 2022, 32, 1077-1087.e9.	3.9	29
90	Adapting the flow of time with dopamine. Journal of Neurophysiology, 2019, 121, 1748-1760.	1.8	28

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91	Computational Phenotyping: Using Models to Understand Individual Differences in Personality, Development, and Mental Illness. Personality Neuroscience, 2018, 1, e18.	1.6	27
92	Finding structure in multi-armed bandits. Cognitive Psychology, 2020, 119, 101261.	2.2	26
93	Policy compression: An information bottleneck in action selection. Psychology of Learning and Motivation - Advances in Research and Theory, 2021, , 195-232.	1.1	24
94	Multi-task reinforcement learning in humans. Nature Human Behaviour, 2021, 5, 764-773.	12.0	23
95	Remembrance of inferences past: Amortization in human hypothesis generation. Cognition, 2018, 178, 67-81.	2.2	22
96	Plans, Habits, and Theory of Mind. PLoS ONE, 2016, 11, e0162246.	2.5	21
97	Online learning of symbolic concepts. Journal of Mathematical Psychology, 2017, 77, 10-20.	1.8	20
98	Social-Structure Learning. Current Directions in Psychological Science, 2020, 29, 460-466.	5.3	20
99	Confidence and central tendency in perceptual judgment. Attention, Perception, and Psychophysics, 2021, 83, 3024-3034.	1.3	20
100	A linear threshold model for optimal stopping behavior. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 12750-12755.	7.1	19
101	Rational inattention and tonic dopamine. PLoS Computational Biology, 2021, 17, e1008659.	3.2	18
102	Using computational theory to constrain statistical models of neural data. Current Opinion in Neurobiology, 2017, 46, 14-24.	4.2	16
103	Hierarchical structure is employed by humans during visual motion perception. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 24581-24589.	7.1	15
104	The rational use of causal inference to guide reinforcement learning strengthens with age. Npj Science of Learning, 2020, 5, 16.	2.8	14
105	Neural signatures of arbitration between Pavlovian and instrumental action selection. PLoS Computational Biology, 2021, 17, e1008553.	3.2	13
106	Estimating Scale-Invariant Future in Continuous Time. Neural Computation, 2019, 31, 681-709.	2.2	12
107	Ingredients of intelligence: From classic debates to an engineering roadmap. Behavioral and Brain Sciences, 2017, 40, e281.	0.7	11
108	Human visual motion perception shows hallmarks of Bayesian structural inference. Scientific Reports, 2021, 11, 3714.	3.3	11

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109	Editors' Introduction: Computational Approaches to Social Cognition. Topics in Cognitive Science, 2019, 11, 281-298.	1.9	10
110	On the Blessing of Abstraction. Quarterly Journal of Experimental Psychology, 2017, 70, 361-365.	1.1	9
111	The neurobiology of deep reinforcement learning. Current Biology, 2020, 30, R629-R632.	3.9	9
112	What Is the Model in Modelâ€Based Planning?. Cognitive Science, 2021, 45, e12928.	1.7	9
113	Just looking: The innocent eye in neuroscience. Neuron, 2021, 109, 2220-2223.	8.1	9
114	Heuristics from bounded meta-learned inference.. Psychological Review, 2022, 129, 1042-1077.	3.8	7
115	Inference and Search on Graph-Structured Spaces. Computational Brain & Behavior, 2021, 4, 125-147.	1.7	6
116	Causal Inference Gates Corticostriatal Learning. Journal of Neuroscience, 2021, 41, 6892-6904.	3.6	6
117	Medial Prefrontal Cortex Updates Its Status. Neuron, 2016, 92, 937-939.	8.1	5
118	Moral dynamics: Grounding moral judgment in intuitive physics and intuitive psychology. Cognition, 2021, 217, 104890.	2.2	5
119	The penumbra of learning: A statistical theory of synaptic tagging and capture. Network: Computation in Neural Systems, 2014, 25, 97-115.	3.6	4
120	Impulsivity and risk-seeking as Bayesian inference under dopaminergic control. Neuropsychopharmacology, 2022, 47, 465-476.	5.4	3
121	Human-in-the-Loop Interpretability Prior. Advances in Neural Information Processing Systems, 2018, 31, .	2.8	3
122	The Reward-Complexity Trade-off in Schizophrenia. Computational Psychiatry, 2021, 5, 38-53.	2.0	2
123	Hierarchical motion structure is employed by humans during visual perception. Journal of Vision, 2019, 19, 282.	0.3	2
124	Bayesian belief updating after a replication experiment. Behavioral and Brain Sciences, 2018, 41, e134.	0.7	1
125	Analyzing Machineâ€Learned Representations: A Natural Language Case Study. Cognitive Science, 2020, 44, e12925.	1.7	1
126	Discovery of hierarchical representations for efficient planning. , 2020, 16, e1007594.		0

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127	Discovery of hierarchical representations for efficient planning. , 2020, 16, e1007594.		0
128	Discovery of hierarchical representations for efficient planning. , 2020, 16, e1007594.		0
129	Discovery of hierarchical representations for efficient planning. , 2020, 16, e1007594.		0
130	Discovery of hierarchical representations for efficient planning. , 2020, 16, e1007594.		0