Nathaniel D Daw

List of Publications by Year
in descending order

104 papers	20,750 citations	23500 58 h-index	30848 102 g-index
136 all docs	136 docs citations	136 times ranked	11425 citing authors

#	Article	IF	Citations
1	Uncertainty-based competition between prefrontal and dorsolateral striatal systems for behavioral control. Nature Neuroscience, 2005, 8, 1704-1711.	7.1	2,108
2	Cortical substrates for exploratory decisions in humans. Nature, 2006, 441, 876-879.	13.7	1,790
3	Model-Based Influences on Humans' Choices and Striatal Prediction Errors. Neuron, 2011, 69, 1204-1215.	3.8	1,388
4	Tonic dopamine: opportunity costs and the control of response vigor. Psychopharmacology, 2007, 191, 507-520.	1.5	969
5	States versus Rewards: Dissociable Neural Prediction Error Signals Underlying Model-Based and Model-Free Reinforcement Learning. Neuron, 2010, 66, 585-595.	3.8	935
6	Opponent interactions between serotonin and dopamine. Neural Networks, 2002, 15, 603-616.	3.3	744
7	Disorders of compulsivity: a common bias towards learning habits. Molecular Psychiatry, 2015, 20, 345-352.	4.1	523
8	The computational neurobiology of learning and reward. Current Opinion in Neurobiology, 2006, 16, 199-204.	2.0	466
9	Bayesian theories of conditioning in a changing world. Trends in Cognitive Sciences, 2006, 10, 294-300.	4.0	456
10	Decision theory, reinforcement learning, and the brain. Cognitive, Affective and Behavioral Neuroscience, 2008, 8, 429-453.	1.0	427
11	Working-memory capacity protects model-based learning from stress. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 20941-20946.	3.3	393
12	Serotonin and Dopamine: Unifying Affective, Activational, and Decision Functions. Neuropsychopharmacology, 2011, 36, 98-113.	2.8	382
13	Characterizing a psychiatric symptom dimension related to deficits in goal-directed control. ELife, 2016, 5, .	2.8	365
14	Specialized coding of sensory, motor and cognitive variables in VTA dopamine neurons. Nature, 2019, 570, 509-513.	13.7	361
15	Self-evaluation of decision-making: A general Bayesian framework for metacognitive computation.. Psychological Review, 2017, 124, 91-114.	2.7	338
16	The misbehavior of value and the discipline of the will. Neural Networks, 2006, 19, 1153-1160.	3.3	310
17	The Curse of Planning. Psychological Science, 2013, 24, 751-761.	1.8	308
18	Differential roles of human striatum and amygdala in associative learning. Nature Neuroscience, 2011, 14, 1250-1252.	7.1	300

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19	The ubiquity of model-based reinforcement learning. Current Opinion in Neurobiology, 2012, 22, 1075-1081.	2.0	290
20	Reinforcement Learning and Episodic Memory in Humans and Animals: An Integrative Framework. Annual Review of Psychology, 2017, 68, 101-128.	9.9	280
21	Reward and choice encoding in terminals of midbrain dopamine neurons depends on striatal target. Nature Neuroscience, 2016, 19, 845-854.	7.1	273
22	The successor representation in human reinforcement learning. Nature Human Behaviour, 2017, 1, 680-692.	6.2	250
23	Surviving threats: neural circuit and computational implications of a new taxonomy of defensive behaviour. Nature Reviews Neuroscience, 2018, 19, 269-282.	4.9	235
24	Model-based learning protects against forming habits. Cognitive, Affective and Behavioral Neuroscience, 2015, 15, 523-536.	1.0	232
25	Trial-by-trial data analysis using computational models. , 2011, , 3-38.		230
26	Rethinking Extinction. Neuron, 2015, 88, 47-63.	3.8	227
27	Model-based choices involve prospective neural activity. Nature Neuroscience, 2015, 18, 767-772.	7.1	225
28	Prioritized memory access explains planning and hippocampal replay. Nature Neuroscience, 2018, 21, 1609-1617.	7.1	221
29	Predictive representations can link model-based reinforcement learning to model-free mechanisms. PLoS Computational Biology, 2017, 13, e1005768.	1.5	203
30	From Creatures of Habit to Goal-Directed Learners. Psychological Science, 2016, 27, 848-858.	1.8	194
31	Computational approaches to fMRI analysis. Nature Neuroscience, 2017, 20, 304-313.	7.1	185
32	Representation and Timing in Theories of the Dopamine System. Neural Computation, 2006, 18, 1637-1677.	1.3	170
33	Cognitive Control Predicts Use of Model-based Reinforcement Learning. Journal of Cognitive Neuroscience, 2015, 27, 319-333.	1.1	169
34	Neural Correlates of Forward Planning in a Spatial Decision Task in Humans. Journal of Neuroscience, 2011, 31, 5526-5539.	1.7	157
35	Surprise! Neural correlates of Pearceâ€"Hall and Rescorlaâ€"Wagner coexist within the brain. European Journal of Neuroscience, 2012, 35, 1190-1200.	1.2	157
36	Fronto-striatal organization: Defining functional and microstructural substrates of behavioural flexibility. Cortex, 2016, 74, 118-133.	1.1	155

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37	Reminders of past choices bias decisions for reward in humans. Nature Communications, 2017, 8, 15958.	5.8	155
38	Depression: A Decision-Theoretic Analysis. Annual Review of Neuroscience, 2015, 38, 1-23.	5.0	150
39	The algorithmic anatomy of model-based evaluation. Philosophical Transactions of the Royal Society B: Biological Sciences, 2014, 369, 20130478.	1.8	144
40	Learning the opportunity cost of time in a patch-foraging task. Cognitive, Affective and Behavioral Neuroscience, 2015, 15, 837-853.	1.0	141
41	Signals in Human Striatum Are Appropriate for Policy Update Rather than Value Prediction. Journal of Neuroscience, 2011, 31, 5504-5511.	1.7	132
42	Deciding How To Decide: Self-Control and Meta-Decision Making. Trends in Cognitive Sciences, 2015, 19, 700-710.	4.0	127
43	Neural mediators of changes of mind about perceptual decisions. Nature Neuroscience, 2018, 21, 617-624.	7.1	122
44	A Perceptual Inference Mechanism for Hallucinations Linked to Striatal Dopamine. Current Biology, 2018, 28, 503-514.e4.	1.8	120
45	Hippocampal Contributions to Model-Based Planning and Spatial Memory. Neuron, 2019, 102, 683-693.e4.	3.8	119
46	Human Reinforcement Learning Subdivides Structured Action Spaces by Learning Effector-Specific Values. Journal of Neuroscience, 2009, 29, 13524-13531.	1.7	112
47	Dopamine selectively remediates â€˜model-basedâ€™ reward learning: a computational approach. Brain, 2016, 139, 355-364.	3.7	111
48	Episodic Memory Encoding Interferes with Reward Learning and Decreases Striatal Prediction Errors. Journal of Neuroscience, 2014, 34, 14901-14912.	1.7	109
49	How cognitive and reactive fear circuits optimize escape decisions in humans. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 3186-3191.	3.3	102
50	Dissociating hippocampal and striatal contributions to sequential prediction learning. European Journal of Neuroscience, 2012, 35, 1011-1023.	1.2	98
51	Integrating memories to guide decisions. Current Opinion in Behavioral Sciences, 2015, 5, 85-90.	2.0	97
52	Variability in Dopamine Genes Dissociates Model-Based and Model-Free Reinforcement Learning. Journal of Neuroscience, 2016, 36, 1211-1222.	1.7	95
53	Offline replay supports planning in human reinforcement learning. ELife, 2018, 7, .	2.8	91
54	Multiplicity of control in the basal ganglia: computational roles of striatal subregions. Current Opinion in Neurobiology, 2011, 21, 374-380.	2.0	89

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55	Reduced model-based decision-making in schizophrenia.. Journal of Abnormal Psychology, 2016, 125, 777-787.	2.0	85
56	Experience replay is associated with efficient nonlocal learning. Science, 2021, 372, .	6.0	83
57	The opportunity cost of time modulates cognitive effort. Neuropsychologia, 2019, 123, 92-105.	0.7	80
58	Taking Psychiatry Research Online. Neuron, 2016, 91, 19-23.	3.8	79
59	Multiple memory systems as substrates for multiple decision systems. Neurobiology of Learning and Memory, 2015, 117, 4-13.	1.0	78
60	Instructed knowledge shapes feedback-driven aversive learning in striatum and orbitofrontal cortex, but not the amygdala. ELife, 2016, 5, .	2.8	75
61	Increased locus coeruleus tonic activity causes disengagement from a patch-foraging task. Cognitive, Affective and Behavioral Neuroscience, 2017, 17, 1073-1083.	1.0	73
62	Cortical and Hippocampal Correlates of Deliberation during Model-Based Decisions for Rewards in Humans. PLoS Computational Biology, 2013, 9, e1003387.	1.5	71
63	A distinct inferential mechanism for delusions in schizophrenia. Brain, 2019, 142, 1797-1812.	3.7	67
64	Valence-dependent influence of serotonin depletion on model-based choice strategy. Molecular Psychiatry, 2016, 21, 624-629.	4.1	64
65	Chronic and Acute Stress Promote Overexploitation in Serial Decision Making. Journal of Neuroscience, 2017, 37, 5681-5689.	1.7	63
66	Hierarchical Bayesian inference for concurrent model fitting and comparison for group studies. PLoS Computational Biology, 2019, 15, e1007043.	1.5	63
67	A retrieved context model of the emotional modulation of memory.. Psychological Review, 2019, 126, 455-485.	2.7	63
68	Slow escape decisions are swayed by trait anxiety. Nature Human Behaviour, 2019, 3, 702-708.	6.2	60
69	Role of Human Ventromedial Prefrontal Cortex in Learning and Recall of Enhanced Extinction. Journal of Neuroscience, 2019, 39, 3264-3276.	1.7	58
70	Long-Term Reward Prediction in TD Models of the Dopamine System. Neural Computation, 2002, 14, 2567-2583.	1.3	54
71	Comparison of the Association Between Goal-Directed Planning and Self-reported Compulsivity vs Obsessive-Compulsive Disorder Diagnosis. JAMA Psychiatry, 2020, 77, 77.	6.0	54
72	Grid Cells, Place Cells, and Geodesic Generalization for Spatial Reinforcement Learning. PLoS Computational Biology, 2011, 7, e1002235.	1.5	50

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73	More Than the Sum of Its Parts: A Role for the Hippocampus in Configural Reinforcement Learning. Neuron, 2018, 98, 645-657.e6.	3.8	49
74	Reward prediction error does not explain movement selectivity in DMS-projecting dopamine neurons. ELife, 2019, 8, .	2.8	45
75	A model for learning based on the joint estimation of stochasticity and volatility. Nature Communications, 2021, 12, 6587.	5.8	45
76	Independent Neural Computation of Value from Other People's Confidence. Journal of Neuroscience, 2017, 37, 673-684.	1.7	44
77	Are we of two minds?. Nature Neuroscience, 2018, 21, 1497-1499.	7.1	43
78	Formalizing planning and information search in naturalistic decision-making. Nature Neuroscience, 2021, 24, 1051-1064.	7.1	40
79	A simple model for learning in volatile environments. PLoS Computational Biology, 2020, 16, e1007963.	1.5	39
80	Motivational Context Modulates Prediction Error Response in Schizophrenia. Schizophrenia Bulletin, 2016, 42, 1467-1475.	2.3	37
81	Reduced model-based decision-making in gambling disorder. Scientific Reports, 2019, 9, 19625.	1.6	36
82	Linear reinforcement learning in planning, grid fields, and cognitive control. Nature Communications, 2021, 12, 4942.	5.8	36
83	Anxiety, Avoidance, and Sequential Evaluation. Computational Psychiatry, 2020, 4, 1.	1.1	34
84	The Irrationality of Categorical Perception. Journal of Neuroscience, 2013, 33, 19060-19070.	1.7	33
85	Human representation of visuo-motor uncertainty as mixtures of orthogonal basis distributions. Nature Neuroscience, 2015, 18, 1152-1158.	7.1	32
86	Suboptimal Criterion Learning in Static and Dynamic Environments. PLoS Computational Biology, 2017, 13, e1005304.	1.5	30
87	The temporal dynamics of opportunity costs: A normative account of cognitive fatigue and boredom.. Psychological Review, 2022, 129, 564-585.	2.7	30
88	Restrictive eating across a spectrum from healthy to unhealthy: behavioral and neural mechanisms. Psychological Medicine, 2022, 52, 1755-1764.	2.7	27
89	Deficient Goal-Directed Control in a Population Characterized by Extreme Goal Pursuit. Journal of Cognitive Neuroscience, 2021, 33, 463-481.	1.1	25
90	Reinforcement learning and higher level cognition: Introduction to special issue. Cognition, 2009, 113, 259-261.	1.1	22

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91	Biased belief updating and suboptimal choice in foraging decisions. Nature Communications, 2020, 11, 3417.	5.8	22
92	Low lifetime stress exposure is associated with reduced stimulusâ€"response memory. Learning and Memory, 2017, 24, 162-168.	0.5	21
93	Increased and biased deliberation in social anxiety. Nature Human Behaviour, 2022, 6, 146-154.	6.2	21
94	Context-sensitive valuation and learning. Current Opinion in Behavioral Sciences, 2021, 41, 122-127.	2.0	20
95	Rats exhibit similar biases in foraging and intertemporal choice tasks. ELife, 2019, 8, .	2.8	20
96	Of goals and habits. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 13749-13750.	3.3	17
97	The expanding role of dopamine. ELife, 2016, 5, e15963.	2.8	12
98	Changes in brain and behavior during food-based decision-making following treatment of anorexia nervosa. Journal of Eating Disorders, 2021, 9, 48.	1.3	10
99	Rat Anterior Cingulate Cortex Continuously Signals Decision Variables in a Patch Foraging Task. Journal of Neuroscience, 2022, 42, 5730-5744.	1.7	10
100	NEUROSCIENCE: Enhanced: Matchmaking. Science, 2004, 304, 1753-1754.	6.0	7
101	Sympathetic involvement in time-constrained sequential foraging. Cognitive, Affective and Behavioral Neuroscience, 2020, 20, 730-745.	1.0	7
102	In for a penny, in for a pound: examining motivated memory through the lens of retrieved context models. Learning and Memory, 2021, 28, 445-456.	0.5	7
103	Beyond the Average View of Dopamine. Trends in Cognitive Sciences, 2020, 24, 499-501.	4.0	6
104	A particle filtering account of selective attention during learning. , 2019, , .		4