Wolfram Schultz

List of Publications by Year
in descending order

120 papers	32,788 citations	18436 62 h-index	22102 113 g-index
178 all docs	178 docs citations	178 times ranked	18149 citing authors

#	Article	IF	Citations
1	Comparing utility functions between risky and riskless choice in rhesus monkeys. Animal Cognition, 2022, 25, 385-399.	0.9	5
2	Reward Value Revealed by Auction in Rhesus Monkeys. Journal of Neuroscience, 2022, 42, 1510-1528.	1.7	3
3	Single-Dimensional Human Brain Signals for Two-Dimensional Economic Choice Options. Journal of Neuroscience, 2021, 41, 3000-3013.	1.7	9
4	Nonhuman Primates Satisfy Utility Maximization in Compliance with the Continuity Axiom of Expected Utility Theory. Journal of Neuroscience, 2021, 41, 2964-2979.	1.7	13
5	Functions of primate amygdala neurons in economic decisions and social decision simulation. Behavioural Brain Research, 2021, 409, 113318.	1.2	13
6	Reward-specific satiety affects subjective value signals in orbitofrontal cortex during multicomponent economic choice. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	14
7	Adaptation of utility functions to reward distribution in rhesus monkeys. Cognition, 2021, 214, 104764.	1.1	6
8	Smarter than humans: rationality reflected in primate neuronal reward signals. Current Opinion in Behavioral Sciences, 2021, 41, 50-56.	2.0	2
9	Retrospective Valuation of Experienced Outcome Encoded in Distinct Reward Representations in the Anterior Insula and Amygdala. Journal of Neuroscience, 2020, 40, 8938-8950.	1.7	8
10	An Open Resource for Non-human Primate Optogenetics. Neuron, 2020, 108, 1075-1090.e6.	3.8	79
11	Experimentally revealed stochastic preferences for multicomponent choice options.. Journal of Experimental Psychology Animal Learning and Cognition, 2020, 46, 367-384.	0.3	5
12	Orbitofrontal signals for two-component choice options comply with indifference curves of Revealed Preference Theory. Nature Communications, 2019, 10, 4885.	5.8	44
13	Probability Distortion Depends on Choice Sequence in Rhesus Monkeys. Journal of Neuroscience, 2019, 39, 2915-2929.	1.7	28
14	Primate Amygdala Neurons Simulate Decision Processes of Social Partners. Cell, 2019, 177, 986-998.e15.	13.5	75
15	Neural activity in human ventromedial prefrontal cortex reflecting the intention to save reward. Social Cognitive and Affective Neuroscience, 2019, 14, 1255-1261.	1.5	6
16	Recent advances in understanding the role of phasic dopamine activity. F1000Research, 2019, 8, 1680.	0.8	68
17	Primate prefrontal neurons signal economic risk derived from the statistics of recent reward experience. ELife, 2019, 8, .	2.8	14
18	Neural encoding of choice during a delayed response task in primate striatum and orbitofrontal cortex. Experimental Brain Research, 2018, 236, 1679-1688.	0.7	16

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19	Predictive coding of the statistical parameters of uncertain rewards by orbitofrontal neurons. Behavioural Brain Research, 2018, 355, 90-94.	1.2	13
20	Continued need for non-human primate neuroscience research. Current Biology, 2018, 28, R1186-R1187.	1.8	25
21	Dopamine Modulates Adaptive Prediction Error Coding in the Human Midbrain and Striatum. Journal of Neuroscience, 2017, 37, 1708-1720.	1.7	91
22	Neuronal Risk Processing in Human and Monkey Prefrontal Cortex. , 2017, , 103-131.		1
23	Monkeys choose as if maximizing utility compatible with basic principles of revealed preference theory. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E1766-E1775.	3.3	33
24	The phasic dopamine signal maturing: from reward via behavioural activation to formal economic utility. Current Opinion in Neurobiology, 2017, 43, 139-148.	2.0	130
25	Reward prediction error. Current Biology, 2017, 27, R369-R371.	1.8	91
26	Sequential neuromodulation of Hebbian plasticity offers mechanism for effective reward-based navigation. ELife, 2017, 6, .	2.8	74
27	A neuronal reward inequity signal in primate striatum. Journal of Neurophysiology, 2016, 115, 68-79.	0.9	23
28	Utility functions predict variance and skewness risk preferences in monkeys. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 8402-8407.	3.3	45
29	Performance error-related activity in monkey striatum during social interactions. Scientific Reports, 2016, 6, 37199.	1.6	14
30	Adaptive Prediction Error Coding in the Human Midbrain and Striatum Facilitates Behavioral Adaptation and Learning Efficiency. Neuron, 2016, 90, 1127-1138.	3.8	82
31	Dopamine Neuron-Specific Optogenetic Stimulation in Rhesus Macaques. Cell, 2016, 166, 1564-1571.e6.	13.5	219
32	Partial Adaptation of Obtained and Observed Value Signals Preserves Information about Gains and Losses. Journal of Neuroscience, 2016, 36, 10016-10025.	1.7	35
33	Components and characteristics of the dopamine reward utility signal. Journal of Comparative Neurology, 2016, 524, 1699-1711.	0.9	48
34	Neural Basis for Economic Saving Strategies in Human Amygdala-Prefrontal Reward Circuits. Current Biology, 2016, 26, 3004-3013.	1.8	25
35	A dynamic code for economic object valuation in prefrontal cortex neurons. Nature Communications, 2016, 7, 12554.	5.8	63
36	Dopamine reward prediction-error signalling: a two-component response. Nature Reviews Neuroscience, 2016, 17, 183-195.	4.9	672

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37	Reward functions of the basal ganglia. Journal of Neural Transmission, 2016, 123, 679-693.	1.4	160
38	Dopamine neurons learn relative chosen value from probabilistic rewards. ELife, 2016, 5, .	2.8	70
39	Primate amygdala neurons evaluate the progress of self-defined economic choice sequences. ELife, 2016, 5, .	2.8	17
40	Choice mechanisms for past, temporally extended outcomes. Proceedings of the Royal Society B: Biological Sciences, 2015, 282, 20141766.	1.2	3
41	Scaling prediction errors to reward variability benefits error-driven learning in humans. Journal of Neurophysiology, 2015, 114, 1628-1640.	0.9	57
42	Phasic dopamine signals: from subjective reward value to formal economic utility. Current Opinion in Behavioral Sciences, 2015, 5, 147-154.	2.0	69
43	Planning activity for internally generated reward goals in monkey amygdala neurons. Nature Neuroscience, 2015, 18, 461-469.	7.1	39
44	Neuronal Reward and Decision Signals: From Theories to Data. Physiological Reviews, 2015, 95, 853-951.	13.1	800
45	Economic Choices Reveal Probability Distortion in Macaque Monkeys. Journal of Neuroscience, 2015, 35, 3146-3154.	1.7	69
46	Economic risk coding by single neurons in the orbitofrontal cortex. Journal of Physiology (Paris), 2015, 109, 70-77.	2.1	11
47	Retroactive modulation of spike timing-dependent plasticity by dopamine. ELife, 2015, 4, .	2.8	94
48	Dopamine Modulates the Neural Representation of Subjective Value of Food in Hungry Subjects. Journal of Neuroscience, 2014, 34, 16856-16864.	1.7	40
49	Dopamine Reward Prediction Error Responses Reflect Marginal Utility. Current Biology, 2014, 24, 2491-2500.	1.8	170
50	Dopamine prediction error responses integrate subjective value from different reward dimensions. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 2343-2348.	3.3	202
51	Reward Contexts Extend Dopamine Signals to Unrewarded Stimuli. Current Biology, 2014, 24, 56-62.	1.8	48
52	Risk Prediction Error Coding in Orbitofrontal Neurons. Journal of Neuroscience, 2013, 33, 15810-15814.	1.7	21
53	Updating dopamine reward signals. Current Opinion in Neurobiology, 2013, 23, 229-238.	2.0	525
54	Activity of striatal neurons reflects social action and own reward. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 16634-16639.	3.3	66

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55	The role of the striatum in social behavior. Frontiers in Neuroscience, 2013, 7, 233.	1.4	238
56	Prediction of economic choice by primate amygdala neurons. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 18950-18955.	3.3	73
57	Risky Dopamine. Biological Psychiatry, 2012, 71, 180-181.	0.7	8
58	Sensitivity to Temporal Reward Structure in Amygdala Neurons. Current Biology, 2012, 22, 1839-1844.	1.8	34
59	Monitoring extracellular pH, oxygen, and dopamine during reward delivery in the striatum of primates. Frontiers in Behavioral Neuroscience, 2012, 6, 36.	1.0	41
60	Potential Vulnerabilities of Neuronal Reward, Risk, and Decision Mechanisms to Addictive Drugs. Neuron, 2011, 69, 603-617.	3.8	188
61	Neuronal signals for reward risk in frontal cortex. Annals of the New York Academy of Sciences, 2011, 1239, 109-117.	1.8	31
62	Refinement of the use of food and fluid control as motivational tools for macaques used in behavioural neuroscience research: Report of a Working Group of the NC3Rs. Journal of Neuroscience Methods, 2010, 193, 167-188.	1.3	60
63	Dopamine signals for reward value and risk: basic and recent data. Behavioral and Brain Functions, 2010, 6, 24.	1.4	519
64	Subjective neuronal coding of reward: temporal value discounting and risk. European Journal of Neuroscience, 2010, 31, 2124-2135.	1.2	58
65	Responses of Amygdala Neurons to Positive Reward-Predicting Stimuli Depend on Background Reward (Contingency) Rather Than Stimulus-Reward Pairing (Contiguity). Journal of Neurophysiology, 2010, 103, 1158-1170.	0.9	42
66	Adaptation of Reward Sensitivity in Orbitofrontal Neurons. Journal of Neuroscience, 2010, 30, 534-544.	1.7	153
67	Temporally Extended Dopamine Responses to Perceptually Demanding Reward-Predictive Stimuli. Journal of Neuroscience, 2010, 30, 10692-10702.	1.7	145
68	Reward Magnitude Coding in Primate Amygdala Neurons. Journal of Neurophysiology, 2010, 104, 3424-3432.	0.9	81
69	Coding of Reward Risk by Orbitofrontal Neurons IsÂMostly Distinct from Coding of Reward Value. Neuron, 2010, 68, 789-800.	3.8	213
70	Neural mechanisms of observational learning. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 14431-14436.	3.3	268
71	Short-Term Temporal Discounting of Reward Value in Human Ventral Striatum. Journal of Neurophysiology, 2009, 101, 1507-1523.	0.9	85
72	Risk-dependent reward value signal in human prefrontal cortex. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 7185-7190.	3.3	160

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73	Midbrain Dopamine Neurons. , 2009, , 321-329.		20
74	The temporal precision of reward prediction in dopamine neurons. Nature Neuroscience, 2008, 11, 966-973.	7.1	268
75	Influence of Reward Delays on Responses of Dopamine Neurons. Journal of Neuroscience, 2008, 28, 7837-7846.	1.7	356
76	Neuronal Distortions of Reward Probability without Choice. Journal of Neuroscience, 2008, 28, 11703-11711.	1.7	83
77	Dissociating the Role of the Orbitofrontal Cortex and the Striatum in the Computation of Goal Values and Prediction Errors. Journal of Neuroscience, 2008, 28, 5623-5630.	1.7	709
78	Explicit neural signals reflecting reward uncertainty. Philosophical Transactions of the Royal Society B: Biological Sciences, 2008, 363, 3801-3811.	1.8	199
79	Introduction. Neuroeconomics: the promise and the profit. Philosophical Transactions of the Royal Society B: Biological Sciences, 2008, 363, 3767-3769.	1.8	22
80	Behavioral dopamine signals. Trends in Neurosciences, 2007, 30, 203-210.	4.2	1,163
81	Learning-Related Human Brain Activations Reflecting Individual Finances. Neuron, 2007, 54, 167-175.	3.8	78
82	Reward Value Coding Distinct From Risk Attitude-Related Uncertainty Coding in Human Reward Systems. Journal of Neurophysiology, 2007, 97, 1621-1632.	0.9	418
83	Multiple Dopamine Functions at Different Time Courses. Annual Review of Neuroscience, 2007, 30, 259-288.	5.0	1,153
84	Behavioral Theories and the Neurophysiology of Reward. Annual Review of Psychology, 2006, 57, 87-115.	9.9	1,381
85	Rewarding properties of visual stimuli. Experimental Brain Research, 2006, 168, 541-546.	0.7	42
86	Relative reward processing in primate striatum. Experimental Brain Research, 2005, 162, 520-525.	0.7	111
87	Adaptive Coding of Reward Value by Dopamine Neurons. Science, 2005, 307, 1642-1645.	6.0	1,085
88	Evidence that the delay-period activity of dopamine neurons corresponds to reward uncertainty rather than backpropagating TD errors. Behavioral and Brain Functions, 2005, 1, 7.	1.4	62
89	Neural coding of basic reward terms of animal learning theory, game theory, microeconomics and behavioural ecology. Current Opinion in Neurobiology, 2004, 14, 139-147.	2.0	452
90	Discrete Coding of Reward Probability and Uncertainty by Dopamine Neurons. Science, 2003, 299, 1898-1902.	6.0	1,737

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91	Changes in behavior-related neuronal activity in the striatum during learning. Trends in Neurosciences, 2003, 26, 321-328.	4.2	210
92	Effects of Expectations for Different Reward Magnitudes on Neuronal Activity in Primate Striatum. Journal of Neurophysiology, 2003, 89, 2823-2838.	0.9	301
93	Coding of Predicted Reward Omission by Dopamine Neurons in a Conditioned Inhibition Paradigm. Journal of Neuroscience, 2003, 23, 10402-10410.	1.7	298
94	Getting Formal with Dopamine and Reward. Neuron, 2002, 36, 241-263.	3.8	2,180
95	Temporal Difference Model Reproduces Anticipatory Neural Activity. Neural Computation, 2001, 13, 841-862.	1.3	138
96	Influence of Expectation of Different Rewards on Behavior-Related Neuronal Activity in the Striatum. Journal of Neurophysiology, 2001, 85, 2477-2489.	0.9	222
97	Behavioral reactions reflecting differential reward expectations in monkeys. Experimental Brain Research, 2001, 140, 511-518.	0.7	108
98	Dopamine responses comply with basic assumptions of formal learning theory. Nature, 2001, 412, 43-48.	13.7	1,044
99	Multiple reward signals in the brain. Nature Reviews Neuroscience, 2000, 1, 199-207.	4.9	1,176
100	Reward-Related Neuronal Activity During Go-Nogo Task Performance in Primate Orbitofrontal Cortex. Journal of Neurophysiology, 2000, 83, 1864-1876.	0.9	245
101	Modifications of Reward Expectation-Related Neuronal Activity During Learning in Primate Orbitofrontal Cortex. Journal of Neurophysiology, 2000, 83, 1877-1885.	0.9	144
102	Neuronal Coding of Prediction Errors. Annual Review of Neuroscience, 2000, 23, 473-500.	5.0	1,329
103	Relative reward preference in primate orbitofrontal cortex. Nature, 1999, 398, 704-708.	13.7	1,198
104	A predictive reinforcement model of dopamine neurons for learning approach behavior. , 1999, 6, 191-214.		78
105	Dopamine neurons report an error in the temporal prediction of reward during learning. Nature Neuroscience, 1998, 1, 304-309.	7.1	946
106	Predictive Reward Signal of Dopamine Neurons. Journal of Neurophysiology, 1998, 80, 1-27.	0.9	4,219
107	Modifications of Reward Expectation-Related Neuronal Activity During Learning in Primate Striatum. Journal of Neurophysiology, 1998, 80, 964-977.	0.9	253
108	Influence of Reward Expectation on Behavior-Related Neuronal Activity in Primate Striatum. Journal of Neurophysiology, 1998, 80, 947-963.	0.9	345

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109	Pointing with focussing devices. Behavioral and Brain Sciences, 1997, 20, 755-756.	0.4	0
110	Preferential activation of midbrain dopamine neurons by appetitive rather than aversive stimuli. Nature, 1996, 379, 449-451.	13.7	1,047
111	Chapter 15 Reward-related activity in the monkey striatum and substantia nigra. Progress in Brain Research, 1993, 99, 227-235.	0.9	91
112	Role of primate basal ganglia and frontal cortex in the internal generation of movements. Experimental Brain Research, 1992, 91, 363-84.	0.7	184
113	Role of primate basal ganglia and frontal cortex in the internal generation of movements. Experimental Brain Research, 1992, 91, 396-407.	0.7	256
114	Activity of dopamine neurons in the behaving primate. Seminars in Neuroscience, 1992, 4, 129-138.	2.3	146
115	Responses of monkey midbrain dopamine neurons during delayed alternation performance. Brain Research, 1991, 567, 337-341.	1.1	115
116	Depletion of dopamine in the striatum as an experimental model of parkinsonism: direct effects and adaptive mechanisms. Progress in Neurobiology, 1982, 18, 121-166.	2.8	205
117	Comparing Utility Functions Between Risky and Riskless Choice in Rhesus Monkeys. SSRN Electronic Journal, 0, , .	0.4	2
118	Scalar Human Brain Responses to Vectorial Economic Choice Options: A Concept-Driven Approach. SSRN Electronic Journal, 0, , .	0.4	0
119	Experimentally Revealed Stochastic Preferences for Multi-Component Choice Options. SSRN Electronic Journal, 0, , .	0.4	1
120	Reduced Neuronal Value Signals in Monkey Orbitofrontal Cortex during Relative Reward-Specific Satiety of Two-Component Choice Options. SSRN Electronic Journal, 0, , .	0.4	0