Robert A Jacobs

List of Publications by Year
in descending order

75 papers	10,543 citations	159585 30 h-index	95266 68 g-index
75 all docs	75 docs citations	75 times ranked	5843 citing authors

#	Article	IF	Citations
1	Adaptive Mixtures of Local Experts. Neural Computation, 1991, 3, 79-87.	2.2	3,109
2	Hierarchical Mixtures of Experts and the EM Algorithm. Neural Computation, 1994, 6, 181-214.	2.2	1,982
3	Increased rates of convergence through learning rate adaptation. Neural Networks, 1988, 1, 295-307.	5.9	1,432
4	Task Decomposition Through Competition in a Modular Connectionist Architecture: The What and Where Vision Tasks. Cognitive Science, 1991, 15, 219-250.	1.7	366
5	Bayesian integration of visual and auditory signals for spatial localization. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2003, 20, 1391.	1.5	362
6	Methods For Combining Experts' Probability Assessments. Neural Computation, 1995, 7, 867-888.	2.2	309
7	Optimal integration of texture and motion cues to depth. Vision Research, 1999, 39, 3621-3629.	1.4	291
8	Perception of speech reflects optimal use of probabilistic speech cues. Cognition, 2008, 108, 804-809.	2.2	279
9	Comparing perceptual learning across tasks: A review. Journal of Vision, 2002, 2, 5-5.	0.3	208
10	What determines visual cue reliability?. Trends in Cognitive Sciences, 2002, 6, 345-350.	7.8	159
11	Computational Consequences of a Bias toward Short Connections. Journal of Cognitive Neuroscience, 1992, 4, 323-336.	2.3	126
12	Bayesian Inference in Mixtures-of-Experts and Hierarchical Mixtures-of-Experts Models with an Application to Speech Recognition. Journal of the American Statistical Association, 1996, 91, 953-960.	3.1	126
13	Motor timing learned without motor training. Nature Neuroscience, 2000, 3, 860-862.	14.8	113
14	An ideal observer analysis of visual working memory.. Psychological Review, 2012, 119, 807-830.	3.8	112
15	Experience-dependent visual cue integration based on consistencies between visual and haptic percepts. Vision Research, 2001, 41, 449-461.	1.4	92
16	Computational studies of the development of functionally specialized neural modules. Trends in Cognitive Sciences, 1999, 3, 31-38.	7.8	91
17	Bayesian learning theory applied to human cognition. Wiley Interdisciplinary Reviews: Cognitive Science, 2011, 2, 8-21.	2.8	90
18	Encoding Shape and Spatial Relations: The Role of Receptive Field Size in Coordinating Complementary Representations. Cognitive Science, 1994, 18, 361-386.	1.7	77

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19	Experience-dependent integration of texture and motion cues to depth. Vision Research, 1999, 39, 4062-4075.	1.4	77
20	A probabilistic clustering theory of the organization of visual short-term memory.. Psychological Review, 2013, 120, 297-328.	3.8	75
21	Bias/Variance Analyses of Mixtures-of-Experts Architectures. Neural Computation, 1997, 9, 369-383.	2.2	71
22	Melioration as rational choice: Sequential decision making in uncertain environments.. Psychological Review, 2013, 120, 139-154.	3.8	66
23	Properties of Synergies Arising from a Theory of Optimal Motor Behavior. Neural Computation, 2006, 18, 2320-2342.	2.2	62
24	Abstract Representations of Object-Directed Action in the Left Inferior Parietal Lobule. Cerebral Cortex, 2018, 28, 2162-2174.	2.9	54
25	Experience-dependent visual cue recalibration based on discrepancies between visual and haptic percepts. Vision Research, 2003, 43, 2603-2613.	1.4	52
26	A Bayesian Approach to Model Selection in Hierarchical Mixtures-of-Experts Architectures. Neural Networks, 1997, 10, 231-241.	5.9	46
27	Perceptual learning for a pattern discrimination task. Vision Research, 2000, 40, 3209-3230.	1.4	38
28	Nature, nurture, and the development of functional specializations: A computational approach. Psychonomic Bulletin and Review, 1997, 4, 299-309.	2.8	36
29	Transfer of object category knowledge across visual and haptic modalities: Experimental and computational studies. Cognition, 2013, 126, 135-148.	2.2	36
30	Visual shape perception as Bayesian inference of 3D object-centered shape representations.. Psychological Review, 2017, 124, 740-761.	3.8	35
31	Adaptive precision pooling of model neuron activities predicts the efficiency of human visual learning. Journal of Vision, 2009, 9, 22-22.	0.3	33
32	Fast Temporal Dynamics of Visual Cue Integration. Perception, 2002, 31, 421-434.	1.2	31
33	The Adaptive Nature of Visual Working Memory. Current Directions in Psychological Science, 2014, 23, 164-170.	5.3	31
34	Multisensory Part-based Representations of Objects in Human Lateral Occipital Cortex. Journal of Cognitive Neuroscience, 2016, 28, 869-881.	2.3	29
35	Toward ecologically realistic theories in visual short-term memory research. Attention, Perception, and Psychophysics, 2014, 76, 2158-2170.	1.3	28
36	Efficient data compression in perception and perceptual memory.. Psychological Review, 2020, 127, 891-917.	3.8	28

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37	Bayesian Inference in Mixtures-of-Experts and Hierarchical Mixtures-of-Experts Models With an Application to Speech Recognition. Journal of the American Statistical Association, 1996, 91, 953.	3.1	25
38	Four Problems Solved by the Probabilistic Language of Thought. Current Directions in Psychological Science, 2016, 25, 54-59.	5.3	24
39	Near-Optimal Human Adaptive Control across Different Noise Environments. Journal of Neuroscience, 2006, 26, 10883-10887.	3.6	22
40	Learning multisensory representations for auditory-visual transfer of sequence category knowledge: a probabilistic language of thought approach. Psychonomic Bulletin and Review, 2015, 22, 673-686.	2.8	21
41	Adaptive allocation of human visual working memory capacity during statistical and categorical learning. Journal of Vision, 2019, 19, 11.	0.3	21
42	Developmental Constraints Aid the Acquisition of Binocular Disparity Sensitivities. Neural Computation, 2003, 15, 161-182.	2.2	20
43	Parameter learning but not structure learning: A Bayesian network model of constraints on early perceptual learning. Journal of Vision, 2007, 7, 4.	0.3	20
44	A Rational Analysis of the Acquisition of Multisensory Representations. Cognitive Science, 2012, 36, 305-332.	1.7	20
45	From Sensory Signals to Modality-Independent Conceptual Representations: A Probabilistic Language of Thought Approach. PLoS Computational Biology, 2015, 11, e1004610.	3.2	20
46	Adaptive Allocation of Vision under Competing Task Demands. Journal of Neuroscience, 2011, 31, 928-943.	3.6	18
47	Learning abstract visual concepts via probabilistic program induction in a Language of Thought. Cognition, 2017, 168, 320-334.	2.2	18
48	A Developmental Approach Aids Motor Learning. Neural Computation, 2003, 15, 2051-2065.	2.2	17
49	On computational evidence for different types of spatial relations encoding: Reply to Cook et al. (1995).. Journal of Experimental Psychology: Human Perception and Performance, 1995, 21, 423-431.	0.9	16
50	Modeling the Combination of Motion, Stereo, and Vergence Angle Cues to Visual Depth. Neural Computation, 1999, 11, 1297-1330.	2.2	15
51	Depth-dependent blur adaptation. Vision Research, 2004, 44, 113-117.	1.4	11
52	Learning optimal integration of arbitrary features in a perceptual discrimination task. Journal of Vision, 2008, 8, 3.	0.3	11
53	Comparing the Visual Representations and Performance of Humans and Deep Neural Networks. Current Directions in Psychological Science, 2019, 28, 34-39.	5.3	10
54	Can machine learning account for human visual object shape similarity judgments?. Vision Research, 2020, 167, 87-99.	1.4	9

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55	Factorial Hidden Markov Models and the Generalized Backfitting Algorithm. Neural Computation, 2002, 14, 2415-2437.	2.2	7
56	Visual Development and the Acquisition of Motion Velocity Sensitivities. Neural Computation, 2003, 15, 761-781.	2.2	7
57	Visual Learning in Multisensory Environments. Topics in Cognitive Science, 2010, 2, 217-225.	1.9	7
58	Can multisensory training aid visual learning? A computational investigation. Journal of Vision, 2019, 19, 1.	0.3	7
59	Depth-dependent contrast gain-control. Vision Research, 2004, 44, 685-693.	1.4	6
60	Visual learning with reliable and unreliable features. Journal of Vision, 2010, 10, 1-15.	0.3	5
61	Semantic influence on visual working memory of object identity and location. Cognition, 2021, 217, 104891.	2.2	5
62	Bayesian inference for hierarchical mixtures-of-experts with applications to regression and classification. Statistical Methods in Medical Research, 1996, 5, 375-390.	1.5	4
63	The Costs of Ignoring High-Order Correlations in Populations of Model Neurons. Neural Computation, 2006, 18, 660-682.	2.2	4
64	Integrated Approaches to Perceptual Learning. Topics in Cognitive Science, 2010, 2, 182-188.	1.9	4
65	Are People Successful at Learning Sequences of Actions on a Perceptual Matching Task?. Cognitive Science, 2011, 35, 939-962.	1.7	4
66	Visual learning by cue-dependent and cue-invariant mechanisms. Vision Research, 2007, 47, 145-156.	1.4	3
67	Sphere²: Jerry's rig, an OpenGL application for non-linear panorama viewing and interaction. , 2012, , .		3
68	Optimal attentional allocation in the presence of capacity constraints in uncued and cued visual search. Journal of Vision, 2021, 21, 3.	0.3	2
69	Analogy-Related Information Can Be Accessed by Simple Addition and Subtraction of fMRI Activation Patterns, Without Participants Performing any Analogy Task. Neurobiology of Language (Cambridge,) Tj ETQq1 1 0.784314 rg BT /Overl	[illegible]	2
70	Computer vision enhances mobile eye-tracking to expose expert cognition in natural-scene visual-search tasks. , 2014, , .		1
71	Optimality Principles Apply to a Broad Range of Information Integration Problems in Perception and Action. , 2011, , 279-291.		1
72	Conceptual knowledge shapes visual working memory for complex visual information. Scientific Reports, 2022, 12, 8088.	3.3	1

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73	Cortical Transformation of Stimulus Space in Order to Linearize a Linearly Inseparable Task. Journal of Cognitive Neuroscience, 2020, 32, 2342-2355.	2.3	0
74	Learning the best first: interactions between visual development and learning. , 2007, , 39-64.		0
75	The importance of constraints on constraints. Behavioral and Brain Sciences, 2020, 43, e3.	0.7	0