Wilson S Geisler

List of Publications by Year
in descending order

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Version: 2024-02-01

76 papers	7,259 citations	81900 39 h-index	98798 67 g-index

79 all docs	79 docs citations	79 times ranked	4428 citing authors

#	Article	IF	Citations
1	Optimal eye movement strategies in visual search. Nature, 2005, 434, 387-391.	27.8	666
2	Visual Perception and the Statistical Properties of Natural Scenes. Annual Review of Psychology, 2008, 59, 167-192.	17.7	572
3	Motion selectivity and the contrast-response function of simple cells in the visual cortex. Visual Neuroscience, 1991, 7, 531-546.	1.0	411
4	Sequential ideal-observer analysis of visual discriminations.. Psychological Review, 1989, 96, 267-314.	3.8	390
5	Spikes versus BOLD: what does neuroimaging tell us about neuronal activity?. Nature Neuroscience, 2000, 3, 631-633.	14.8	336
6	Independence of luminance and contrast in natural scenes and in the early visual system. Nature Neuroscience, 2005, 8, 1690-1697.	14.8	331
7	Motion streaks provide a spatial code for motion direction. Nature, 1999, 400, 65-69.	27.8	289
8	Visual cortex neurons in monkeys and cats: Detection, discrimination, and identification. Visual Neuroscience, 1997, 14, 897-919.	1.0	261
9	Local luminance and contrast in natural images. Vision Research, 2006, 46, 1585-1598.	1.4	260
10	Contributions of ideal observer theory to vision research. Vision Research, 2011, 51, 771-781.	1.4	211
11	Illusions, perception and Bayes. Nature Neuroscience, 2002, 5, 508-510.	14.8	208
12	Cortical neurons: Isolation of contrast gain control. Vision Research, 1992, 32, 1409-1410.	1.4	195
13	Separation of low-level and high-level factors in complex tasks: Visual search.. Psychological Review, 1995, 102, 356-378.	3.8	192
14	The physical limits of grating visibility. Vision Research, 1987, 27, 1915-1924.	1.4	188
15	Optimal decoding of correlated neural population responses in the primate visual cortex. Nature Neuroscience, 2006, 9, 1412-1420.	14.8	184
16	Visual Cortex Neurons of Monkeys and Cats: Temporal Dynamics of the Contrast Response Function. Journal of Neurophysiology, 2002, 88, 888-913.	1.8	167
17	Eye movement statistics in humans are consistent with an optimal search strategy. Journal of Vision, 2008, 8, 4.	0.3	154
18	Physical limits of acuity and hyperacuity. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1984, 1, 775.	1.5	141

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19	Visual cortical receptive fields in monkey and cat: Spatial and temporal phase transfer function. Vision Research, 1989, 29, 1285-1308.	1.4	113
20	Motion direction signals in the primary visual cortex of cat and monkey. Visual Neuroscience, 2001, 18, 501-516.	1.0	109
21	Contour statistics in natural images: Grouping across occlusions. Visual Neuroscience, 2009, 26, 109-121.	1.0	98
22	Visual search: The role of peripheral information measured using gaze-contingent displays. Journal of Vision, 2006, 6, 1.	0.3	86
23	Bayesian natural selection and the evolution of perceptual systems. Philosophical Transactions of the Royal Society B: Biological Sciences, 2002, 357, 419-448.	4.0	77
24	Simple summation rule for optimal fixation selection in visual search. Vision Research, 2009, 49, 1286-1294.	1.4	77
25	Visual Cortex Neurons of Monkeys and Cats: Temporal Dynamics of the Spatial Frequency Response Function. Journal of Neurophysiology, 2004, 91, 2607-2627.	1.8	75
26	Optimal disparity estimation in natural stereo images. Journal of Vision, 2014, 14, 1-1.	0.3	75
27	Color as a source of information in the stereo correspondence process. Vision Research, 1990, 30, 1955-1970.	1.4	72
28	Effects of bleaching and backgrounds on the flash response of the cone system. Journal of Physiology, 1981, 312, 413-434.	2.9	70
29	A Bayesian approach to the evolution of perceptual and cognitive systems. Cognitive Science, 2003, 27, 379-402.	1.7	70
30	Complex Dynamics of V1 Population Responses Explained by a Simple Gain-Control Model. Neuron, 2009, 64, 943-956.	8.1	69
31	Mechanisms of visual sensitivity: Backgrounds and early dark adaptation. Vision Research, 1983, 23, 1423-1432.	1.4	62
32	Responses of Neurons in Primary Visual Cortex to Transient Changes in Local Contrast and Luminance. Journal of Neuroscience, 2007, 27, 5063-5067.	3.6	60
33	Optimal speed estimation in natural image movies predicts human performance. Nature Communications, 2015, 6, 7900.	12.8	59
34	The relative contributions of pre-neural and neural factors to areal summation in the fovea. Vision Research, 1991, 31, 1369-1380.	1.4	58
35	Optimal Temporal Decoding of Neural Population Responses in a Reaction-Time Visual Detection Task. Journal of Neurophysiology, 2008, 99, 1366-1379.	1.8	58
36	Intrinsic position uncertainty explains detection and localization performance in peripheral vision. Journal of Vision, 2011, 11, 18-18.	0.3	55

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37	Natural Systems Analysis. Visual Neuroscience, 2009, 26, 1-3.	1.0	54
38	Contrast statistics for foveated visual systems: fixation selection by minimizing contrast entropy. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2005, 22, 2039.	1.5	51
39	Calcium imaging with genetically encoded indicators in behaving primates. ELife, 2016, 5, .	6.0	49
40	Natural image and receptive field statistics predict saccade sizes. Nature Neuroscience, 2018, 21, 1591-1599.	14.8	45
41	Optimal stimulus encoders for natural tasks. Journal of Vision, 2009, 9, 17-17.	0.3	43
42	Retina-V1 model of detectability across the visual field. Journal of Vision, 2014, 14, 22-22.	0.3	42
43	Stereopsis at isoluminance in the absence of chromatic aberrations. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1992, 9, 868.	1.5	41
44	Statistics for optimal point prediction in natural images. Journal of Vision, 2011, 11, 14-14.	0.3	41
45	Constrained sampling experiments reveal principles of detection in natural scenes. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E5731-E5740.	7.1	41
46	Human vision is attuned to the diffuseness of natural light. Journal of Vision, 2014, 14, 15.	0.3	40
47	Human Wavelength Discrimination of Monochromatic Light Explained by Optimal Wavelength Decoding of Light of Unknown Intensity. PLoS ONE, 2011, 6, e19248.	2.5	33
48	A Bayesian approach to the evolution of perceptual and cognitive systems. Cognitive Science, 2003, 27, 379-402.	1.7	31
49	Adaptation mechanisms in spatial visionâ€”ii. Flash thresholds and background adaptation. Vision Research, 1995, 35, 1595-1609.	1.4	27
50	Visual search under scotopic lighting conditions. Vision Research, 2015, 113, 155-168.	1.4	23
51	Estimating 3D tilt from local image cues in natural scenes. Journal of Vision, 2016, 16, 2.	0.3	23
52	<title>Visual detection following retinal damage: predictions of an inhomogeneous retino-cortical model</title>. , 1996, 2674, 119.		22
53	Linking V1 Activity to Behavior. Annual Review of Vision Science, 2018, 4, 287-310.	4.4	17
54	A method to integrate and classify normal distributions. Journal of Vision, 2021, 21, 1.	0.3	17

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55	Decision-variable correlation. Journal of Vision, 2018, 18, 3.	0.3	15
56	Local reliability weighting explains identification of partially masked objects in natural images. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 29363-29370.	7.1	13
57	Humans make efficient use of natural image statistics when performing spatial interpolation. Journal of Vision, 2013, 13, 11-11.	0.3	12
58	Contributions of monocular and binocular cues to distance discrimination in natural scenes. Journal of Vision, 2018, 18, 12.	0.3	11
59	<title>Visual cortex neurons in monkey and cat: contrast response nonlinearities and stimulus selectivity</title>. , 1994, 2054, 12.		8
60	Scale-Invariant Visual Capabilities Explained by Topographic Representations of Luminance and Texture in Primate V1. Neuron, 2018, 100, 1504-1512.e4.	8.1	8
61	Natural systems analysis. Proceedings of SPIE, 2008, , .	0.8	7
62	<title>Retinally reconstructed images (RRIs): digital images having a resolution match with the human eye</title>. , 1998, , .		6
63	Psychometric functions of uncertain template matching observers. Journal of Vision, 2018, 18, 1.	0.3	6
64	61.1: Invited Paper: Gaze Contingent Displays: Analysis of Saccadic Plasticity in Visual Search. Digest of Technical Papers SID International Symposium, 2009, 40, 911-914.	0.3	5
65	Decoding natural signals from the peripheral retina. Journal of Vision, 2011, 11, 19-19.	0.3	4
66	Nonlinear Lateral Interactions in V1 Population Responses Explained by a Contrast Gain Control Model. Journal of Neuroscience, 2018, 38, 10069-10079.	3.6	4
67	DISCRIMINATION INFORMATION IN NATURAL RADIANCE SPECTRA. , 1995, , 117-131.		3
68	Detection of occluding targets in natural backgrounds. Journal of Vision, 2020, 20, 14.	0.3	3
69	Efficient allocation of attentional sensitivity gain in visual cortex reduces foveal sensitivity in visual search. Current Biology, 2022, 32, 26-36.e6.	3.9	3
70	Stereo slant discrimination of planar 3D surfaces: Frontoparallel versus planar matching. Journal of Vision, 2022, 22, 6.	0.3	3
71	Spatial Vision. , 2000, , 79-128.		2
72	Similar masking effects of natural backgrounds on detection performances in humans, macaques, and macaque-V1 population responses. Journal of Neurophysiology, 2021, 125, 2125-2134.	1.8	1

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73	Effects of Target Amplitude Uncertainty, Background Contrast Uncertainty, and Prior Probability Are Predicted by the Normalized Template-Matching Observer. Journal of Vision, 2019, 19, 79c.	0.3	1
74	The Energy-Normalized MAX Observer Approximates the Ideal Observer Under High-levels of Simultaneous Orientation and Scale Uncertainty in White Noise. Journal of Vision, 2021, 21, 2718.	0.3	0
75	High-Order Statistics for Point Prediction in Natural Images. , 2011, , .		0
76	Theory of Covert Search in Noise Backgrounds Correctly Predicts Asymmetrical Spatial Distributions of Misses and False Alarms. Journal of Vision, 2019, 19, 318a.	0.3	0