David C O'carroll

List of Publications by Year
in descending order

100	3,227	117625 34	168389 53
papers	citations	h-index	g-index

106	106	106	1429
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Dragonfly Neurons Selectively Attend to Targets Within Natural Scenes. Frontiers in Cellular Neuroscience, 2022, 16, 857071.	3.7	5
2	Acute Application of Imidacloprid Alters the Sensitivity of Direction Selective Motion Detecting Neurons in an Insect Pollinator. Frontiers in Physiology, 2021, 12, 682489.	2.8	8
3	Modeling Nonlinear Dendritic Processing of Facilitation in a Dragonfly Target-Tracking Neuron. Frontiers in Neural Circuits, 2021, 15, 684872.	2.8	1
4	A new, fluorescence-based method for visualizing the pseudopupil and assessing optical acuity in the dark compound eyes of honeybees and other insects. Scientific Reports, 2021, 11, 21267.	3.3	2
5	Comparison of Transparency and Shrinkage During Clearing of Insect Brains Using Media With Tunable Refractive Index. Frontiers in Neuroanatomy, 2020, 14, 599282.	1.7	15
6	Hawkmoth lamina monopolar cells act as dynamic spatial filters to optimize vision at different light levels. Science Advances, 2020, 6, eaaz8645.	10.3	27
7	A Target-Detecting Visual Neuron in the Dragonfly Locks on to Selectively Attended Targets. Journal of Neuroscience, 2019, 39, 8497-8509.	3.6	26
8	Properties of predictive gain modulation in a dragonfly visual neuron. Journal of Experimental Biology, 2019, 222, .	1.7	17
9	Differential Tuning to Visual Motion Allows Robust Encoding of Optic Flow in the Dragonfly. Journal of Neuroscience, 2019, 39, 8051-8063.	3.6	13
10	A new fossil evaniid wasp from Eocene Baltic amber, with highly modified compound eyes unique within the Hymenoptera. Journal of Paleontology, 2018, 92, 189-195.	0.8	1
11	Three-dimensional functional human neuronal networks in uncompressed low-density electrospun fiber scaffolds. Nanomedicine: Nanotechnology, Biology, and Medicine, 2017, 13, 1563-1573.	3.3	49
12	Vision in dim light: highlights and challenges. Philosophical Transactions of the Royal Society B: Biological Sciences, 2017, 372, 20160062.	4.0	31
13	Visual acuity of the honey bee retina and the limits for feature detection. Scientific Reports, 2017, 7, 45972.	3.3	32
14	Performance of an insect-inspired target tracker in natural conditions. Bioinspiration and Biomimetics, 2017, 12, 025006.	2.9	38
15	An autonomous robot inspired by insect neurophysiology pursues moving features in natural environments. Journal of Neural Engineering, 2017, 14, 046030.	3.5	34
16	Photoreceptor signalling is sufficient to explain the detectability threshold of insect aerial pursuers. Journal of Experimental Biology, 2017, 220, 4364-4369.	1.7	5
17	Resolving the Trade-off Between Visual Sensitivity and Spatial Acuityâ€"Lessons from Hawkmoths. Integrative and Comparative Biology, 2017, 57, 1093-1103.	2.0	14
18	A predictive focus of gain modulation encodes target trajectories in insect vision. ELife, 2017, 6, .	6.0	55

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19	Salience invariance with divisive normalization in higher-order insect neurons. , 2016, , .		2
20	Neural Summation in the Hawkmoth Visual System Extends the Limits of Vision in Dim Light. Current Biology, 2016, 26, 821-826.	3.9	75
21	Quantifying asynchrony of multiple cameras using aliased optical devices. , 2015, , .		3
22	Multi-focal video fusion with a beam splitter prism. , 2015, , .		1
23	Robustness and Real-Time Performance of an Insect Inspired Target Tracking Algorithm Under Natural Conditions. , 2015, , .		1
24	Multisensory Perception: Pinpointing Visual Enhancement by Appropriate Odors. Current Biology, 2015, 25, R196-R198.	3.9	1
25	Properties of neuronal facilitation that improve target tracking in natural pursuit simulations. Journal of the Royal Society Interface, 2015, 12, 20150083.	3.4	15
26	A Biologically Inspired Facilitation Mechanism Enhances the Detection and Pursuit of Targets of Varying Contrast. , 2014, , .		1
27	Contrast sensitivity and the detection of moving patterns and features. Philosophical Transactions of the Royal Society B: Biological Sciences, 2014, 369, 20130043.	4.0	57
28	Neurogenic potential of dental pulp stem cells isolated from murine incisors. Stem Cell Research and Therapy, 2014, 5, 30.	5.5	49
29	Performance assessment of an insect-inspired target tracking model in background clutter. , 2014, , .		1
30	Correlation between OFF and ON Channels Underlies Dark Target Selectivity in an Insect Visual System. Journal of Neuroscience, 2013, 33, 13225-13232.	3.6	46
31	Can a competitive neural network explain selective attention in insect target tracking neurons?. , 2013, , .		0
32	Selective Attention in an Insect Visual Neuron. Current Biology, 2013, 23, 156-161.	3.9	87
33	Biomimetic target detection: Modeling 2nd order correlation of OFF and ON channels. , 2013, , .		10
34	Bio-inspired feature extraction and enhancement of targets moving against visual clutter during closed loop pursuit. , 2013, , .		3
35	Facilitation of dragonfly target-detecting neurons by slow moving features on continuous paths. Frontiers in Neural Circuits, 2012, 6, 79.	2.8	39
36	Temporal and spatial adaptation of transient responses to local features. Frontiers in Neural Circuits, 2012, 6, 74.	2.8	8

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37	Modeling inhibitory interactions shaping neural responses of target neurons to multiple features. , 2011, , .		0
38	Computational models for spatiotemporal filtering strategies in insect motion vision at low light levels. , 2011, , .		4
39	Computational models reveal non-linearity in integration of local motion signals by insect motion detectors viewing natural scenes. , 2011, , .		2
40	Local and global responses of insect motion detectors to the spatial structure of natural scenes. Journal of Vision, 2011, 11, 20-20.	0.3	24
41	Discrete implementation of biologically inspired image processing for target detection. , 2011, , .		9
42	Modelling the temporal response properties of an insect small target motion detector. , 2011, , .		8
43	Spatial facilitation by a high-performance dragonfly target-detecting neuron. Biology Letters, 2011, 7, 588-592.	2.3	41
44	Discrimination of Features in Natural Scenes by a Dragonfly Neuron. Journal of Neuroscience, 2011, 31, 7141-7144.	3.6	40
45	Rapid contrast gain reduction following motion adaptation. Journal of Experimental Biology, 2011, 214, 4000-4009.	1.7	23
46	Performance of a Bio-Inspired Model for the Robust Detection of Moving Targets in High Dynamic Range Natural Scenes. Journal of Computational and Theoretical Nanoscience, 2010, 7, 911-920.	0.4	23
47	Motion Adaptation and the Velocity Coding of Natural Scenes. Current Biology, 2010, 20, 994-999.	3.9	24
48	Wide-field motion tuning in nocturnal hawkmoths. Proceedings of the Royal Society B: Biological Sciences, 2010, 277, 853-860.	2.6	53
49	Bio-inspired model for robust motion detection under noisy conditions. , 2010, , .		5
50	Characterization of a neuromorphic motion detection chip based on insect visual system. , 2009, , .		5
51	Local and Large-Range Inhibition in Feature Detection. Journal of Neuroscience, 2009, 29, 14143-14150.	3.6	46
52	Robust Models for Optic Flow Coding in Natural Scenes Inspired by Insect Biology. PLoS Computational Biology, 2009, 5, e1000555.	3.2	85
53	The motion after-effect: local and global contributions to contrast sensitivity. Proceedings of the Royal Society B: Biological Sciences, 2009, 276, 1545-1554.	2.6	18
54	Feature detection and the hypercomplex property in insects. Trends in Neurosciences, 2009, 32, 383-391.	8.6	69

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55	Implementation of an elaborated neuromorphic model of a biological photoreceptor. Biological Cybernetics, 2008, 98, 357-369.	1.3	19
56	Sexual Dimorphism in the Hoverfly Motion Vision Pathway. Current Biology, 2008, 18, 661-667.	3.9	52
57	Bio-inspired small target discrimination in high dynamic range natural scenes. , 2008, , .		7
58	Assessing the naturalness of scenes: An approach using statistics of local features. , 2008, , .		3
59	Insect vision. , 2008, , .		0
60	Applications for bio-inspired visual processing algorithms. , 2008, , .		3
61	Bio-inspired target detection in natural scenes: optimal thresholds and ego-motion. , 2008, , .		5
62	Photoreceptor processing improves salience facilitating small target detection in cluttered scenes. Journal of Vision, 2008, 8, 8-8.	0.3	21
63	Contrast sensitivity of insect motion detectors to natural images. Journal of Vision, 2008, 8, 32.	0.3	57
64	A Model for the Detection of Moving Targets in Visual Clutter Inspired by Insect Physiology. PLoS ONE, 2008, 3, e2784.	2.5	121
65	Neural mechanisms underlying target detection in a dragonfly centrifugal neuron. Journal of Experimental Biology, 2007, 210, 3277-3284.	1.7	69
66	Biomimetic Motion Detection. , 2007, , .		15
67	Retinotopic Organization of Small-Field-Target-Detecting Neurons in the Insect Visual System. Current Biology, 2007, 17, 569-578.	3.9	76
68	Bio-inspired optical rotation sensor. , 2006, , .		5
69	Bio-inspired pixel-wise adaptive imaging. , 2006, 6414, 302.		10
70	A `bright zone' in male hoverfly (Eristalis tenax) eyes and associated faster motion detection and increased contrast sensitivity. Journal of Experimental Biology, 2006, 209, 4339-4354.	1.7	122
71	Implementation of saturation for modelling pattern noise using naturalistic stimuli. , 2006, 6414, 539.		3
72	Insect Detection of Small Targets Moving in Visual Clutter. PLoS Biology, 2006, 4, e54.	5.6	131

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73	Small object detection neurons in female hoverflies. Proceedings of the Royal Society B: Biological Sciences, 2006, 273, 1211-1216.	2.6	58
74	A 16 pixel yaw sensor for velocity estimation. , 2005, 6036, 309.		0
75	Characterization of insect vision based collision avoidance models using a video camera. , 2005, , .		0
76	Insect-based visual motion detection with contrast adaptation. , 2005, , .		3
77	Effects of compressive nonlinearity on insect-based motion detection. , 2005, , .		0
78	Modeling pattern noise in responses of fly motion detectors to naturalistic scenes. , 2005, , .		5
79	Effect of spatial sampling on pattern noise in insect-based motion detection. , 2005, , .		7
80	Velocity constancy and models for wide-field visual motion detection in insects. Biological Cybernetics, 2005, 93, 275-287.	1.3	43
81	Man-made velocity estimators based on insect vision. Smart Materials and Structures, 2005, 14, 413-424.	3.5	11
82	Implementation of an adaptive photodetector circuit inspired by insect visual systems. , 2005, 5649, 839.		1
83	Bio-inspired analog circuitry model of insect photoreceptor cells. , 2005, , .		3
84	Effects of nonlinear elaborations on the performance of a Reichardt correlator. , 2004, , .		0
85	Velocity estimation and comparison of two insect-vision-based motion-detection models. , 2003, 5062, 401.		0
86	Elaborated Reichardt correlators for velocity estimation tasks. , 2002, , .		9
87	Afterimages in fly motion vision. Vision Research, 2002, 42, 1701-1714.	1.4	22
88	Accuracy of velocity estimation by Reichardt correlators. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2001, 18, 241.	1.5	124
89	Biomimetic visual detection based on insect neurobiology. , 2001, , .		2
90	Implementation of visual motion detection with contrast adaptation. , 2001, , .		9

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91	Temperature and the temporal resolving power of fly photoreceptors. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2000, 186, 399-407.	1.6	65
92	Contrast Gain Reduction in Fly Motion Adaptation. Neuron, 2000, 28, 595-606.	8.1	143
93	Built-in polarizers form part of a compass organ in spiders. Nature, 1999, 401, 470-473.	27.8	88
94	Adaptation and the temporal delay filter of fly motion detectors. Vision Research, 1999, 39, 2603-2613.	1.4	91
95	Spatio-temporal properties of motion detectors matched to low image velocities in hovering insects. Vision Research, 1997, 37, 3427-3439.	1.4	71
96	Insect motion detectors matched to visual ecology. Nature, 1996, 382, 63-66.	27.8	145
97	Feature-detecting neurons in dragonflies. Nature, 1993, 362, 541-543.	27.8	182
98	Insect perception of illusory contours. Philosophical Transactions of the Royal Society B: Biological Sciences, 1992, 337, 59-64.	4.0	50
99	Local feedback mediated via amacrine cells in the insect optic lobe. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1992, 171, 447.	1.6	20
100	Comparative ultrastructure of Layer I receptor mosaics in principal eyes of jumping spiders: the evolution of regular arrays of light guides. Cell and Tissue Research, 1990, 262, 445-460.	2.9	104