Gilles Laurent

List of Publications by Year
in descending order

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Version: 2024-02-01

86 papers	14,891 citations	41258 49 h-index	54797 84 g-index
90 all docs	90 docs citations	90 times ranked	7856 citing authors

#	Article	IF	Citations
1	Impaired odour discrimination on desynchronization of odour-encoding neural assemblies. Nature, 1997, 390, 70-74.	13.7	912
2	Oscillations and Sparsening of Odor Representations in the Mushroom Body. Science, 2002, 297, 359-365.	6.0	712
3	painless, a Drosophila Gene Essential for Nociception. Cell, 2003, 113, 261-273.	13.5	696
4	Olfactory network dynamics and the coding of multidimensional signals. Nature Reviews Neuroscience, 2002, 3, 884-895.	4.9	639
5	Intensity versus Identity Coding in an Olfactory System. Neuron, 2003, 39, 991-1004.	3.8	563
6	Odour encoding by temporal sequences of firing in oscillating neural assemblies. Nature, 1996, 384, 162-166.	13.7	497
7	Transformation of Olfactory Representations in the Drosophila Antennal Lobe. Science, 2004, 303, 366-370.	6.0	497
8	Transient Dynamics for Neural Processing. Science, 2008, 321, 48-50.	6.0	447
9	Transient Dynamics versus Fixed Points in Odor Representations by Locust Antennal Lobe Projection Neurons. Neuron, 2005, 48, 661-673.	3.8	435
10	Dynamic Optimization of Odor Representations by Slow Temporal Patterning of Mitral Cell Activity. Science, 2001, 291, 889-894.	6.0	434
11	Role of GABAergic Inhibition in Shaping Odor-Evoked Spatiotemporal Patterns in the Drosophila Antennal Lobe. Journal of Neuroscience, 2005, 25, 9069-9079.	1.7	418
12	Odor Encoding as an Active, Dynamical Process: Experiments, Computation, and Theory. Annual Review of Neuroscience, 2001, 24, 263-297.	5.0	413
13	Distinct Mechanisms for Synchronization and Temporal Patterning of Odor-Encoding Neural Assemblies. Science, 1996, 274, 976-979.	6.0	391
14	Odor- and context-dependent modulation of mitral cell activity in behaving rats. Nature Neuroscience, 1999, 2, 1003-1009.	7.1	366
15	Olfactory Representations byDrosophilaMushroom Body Neurons. Journal of Neurophysiology, 2008, 99, 734-746.	0.9	357
16	Multiplicative computation in a visual neuron sensitive to looming. Nature, 2002, 420, 320-324.	13.7	351
17	Temporal Representations of Odors in an Olfactory Network. Journal of Neuroscience, 1996, 16, 3837-3847.	1.7	346
18	Dynamical representation of odors by oscillating and evolving neural assemblies. Trends in Neurosciences, 1996, 19, 489-496.	4.2	344

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19	Evolution of pallium, hippocampus, and cortical cell types revealed by single-cell transcriptomics in reptiles. Science, 2018, 360, 881-888.	6.0	344
20	Hebbian STDP in mushroom bodies facilitates the synchronous flow of olfactory information in locusts. Nature, 2007, 448, 709-713.	13.7	312
21	Complexity and the Nervous System. Science, 1999, 284, 96-98.	6.0	300
22	Short-term memory in olfactory network dynamics. Nature, 1999, 402, 664-668.	13.7	272
23	Who reads temporal information contained across synchronized and oscillatory spike trains?. Nature, 1998, 395, 693-698.	13.7	266
24	Using noise signature to optimize spike-sorting and to assess neuronal classification quality. Journal of Neuroscience Methods, 2002, 122, 43-57.	1.3	255
25	Computation of Object Approach by a Wide-Field, Motion-Sensitive Neuron. Journal of Neuroscience, 1999, 19, 1122-1141.	1.7	251
26	Model of Transient Oscillatory Synchronization in the Locust Antennal Lobe. Neuron, 2001, 30, 553-567.	3.8	219
27	Multiplexing using synchrony in the zebrafish olfactory bulb. Nature Neuroscience, 2004, 7, 862-871.	7.1	210
28	Disruption of GABA_A Receptors on GABAergic Interneurons Leads to Increased Oscillatory Power in the Olfactory Bulb Network. Journal of Neurophysiology, 2001, 86, 2823-2833.	0.9	207
29	Conditional modulation of spike-timing-dependent plasticity for olfactory learning. Nature, 2012, 482, 47-52.	13.7	201
30	Normalization for Sparse Encoding of Odors by a Wide-Field Interneuron. Science, 2011, 332, 721-725.	6.0	191
31	A Simple Connectivity Scheme for Sparse Coding in an Olfactory System. Journal of Neuroscience, 2007, 27, 1659-1669.	1.7	184
32	GABAergic synapses in the antennal lobe and mushroom body of the locust olfactory system. , 1996, 372, 487-514.		183
33	Slow waves, sharp waves, ripples, and REM in sleeping dragons. Science, 2016, 352, 590-595.	6.0	177
34	Encoding and Decoding of Overlapping Odor Sequences. Neuron, 2006, 51, 467-482.	3.8	162
35	Testing Odor Response Stereotypy in the Drosophila Mushroom Body. Neuron, 2008, 59, 1009-1023.	3.8	157
36	Model of Cellular and Network Mechanisms for Odor-Evoked Temporal Patterning in the Locust Antennal Lobe. Neuron, 2001, 30, 569-581.	3.8	137

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37	Intrinsic and Circuit Properties Favor Coincidence Detection for Decoding Oscillatory Input. Journal of Neuroscience, 2004, 24, 6037-6047.	1.7	120
38	Neural Encoding of Rapidly Fluctuating Odors. Neuron, 2009, 61, 570-586.	3.8	114
39	A claustrum in reptiles and its role in slow-wave sleep. Nature, 2020, 578, 413-418.	13.7	103
40	Invariance of Angular Threshold Computation in a Wide-Field Looming-SensitiveÂNeuron. Journal of Neuroscience, 2001, 21, 314-329.	1.7	100
41	Adaptive regulation of sparseness by feedforward inhibition. Nature Neuroscience, 2007, 10, 1176-1184.	7.1	92
42	Fast Odor Learning Improves Reliability of Odor Responses in the Locust Antennal Lobe. Neuron, 2005, 46, 483-492.	3.8	84
43	Olfactory processing: maps, time and codes. Current Opinion in Neurobiology, 1997, 7, 547-553.	2.0	83
44	Dynamics of Olfactory Bulb Input and Output Activity During Odor Stimulation in Zebrafish. Journal of Neurophysiology, 2004, 91, 2658-2669.	0.9	83
45	Relationship between Afferent and Central Temporal Patterns in the Locust Olfactory System. Journal of Neuroscience, 1999, 19, 381-390.	1.7	69
46	High-Resolution Three-Dimensional Extracellular Recording of Neuronal Activity With Microfabricated Electrode Arrays. Journal of Neurophysiology, 2009, 101, 1671-1678.	0.9	67
47	Multiplication and stimulus invariance in a looming-sensitive neuron. Journal of Physiology (Paris), 2004, 98, 19-34.	2.1	65
48	Central Generation of Grooming Motor Patterns and Interlimb Coordination in Locusts. Journal of Neuroscience, 1996, 16, 8079-8091.	1.7	63
49	Transfer characteristics of a thermosensory synapse in Caenorhabditis elegans. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 9667-9672.	3.3	59
50	Looking for the roots of cortical sensory computation in three-layered cortices. Current Opinion in Neurobiology, 2015, 31, 119-126.	2.0	56
51	Encoding of Mixtures in a Simple Olfactory System. Neuron, 2013, 80, 1246-1262.	3.8	54
52	A Population of ascending intersegmental interneurones in the locust with mechanosensory inputs from a hind leg. Journal of Comparative Neurology, 1988, 275, 1-12.	0.9	53
53	Evolution of neuronal identity in the cerebral cortex. Current Opinion in Neurobiology, 2019, 56, 199-208.	2.0	50
54	Neural Encoding of Odors during Active Sampling and in Turbulent Plumes. Neuron, 2015, 88, 403-418.	3.8	47

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55	Evaluating a genetically encoded optical sensor of neural activity using electrophysiology in intact adult fruit flies. Frontiers in Neural Circuits, 2007, 1, 3.	1.4	45
56	Time-Dependent Activation of Feed-Forward Inhibition in a Looming-Sensitive Neuron. Journal of Neurophysiology, 2005, 94, 2150-2161.	0.9	44
57	Local Control of Leg Movements and Motor Patterns during Grooming in Locusts. Journal of Neuroscience, 1996, 16, 8067-8078.	1.7	43
58	Estimating firing rates from calcium signals in locust projection neurons in vivo. Frontiers in Neural Circuits, 2007, 1, 2.	1.4	43
59	Reliable Sequential Activation of Neural Assemblies by Single Pyramidal Cells in a Three-Layered Cortex. Neuron, 2019, 104, 353-369.e5.	3.8	35
60	Spatiotemporal Structure of Olfactory Inputs to the Mushroom Bodies. Learning and Memory, 1998, 5, 124-132.	0.5	34
61	The morphology of a population of thoracic intersegmental interneurones in the locust. Journal of Comparative Neurology, 1987, 256, 412-429.	0.9	33
62	Local circuits underlying excitation and inhibition of intersegmental interneurones in the locust. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1988, 162, 145-157.	0.7	31
63	Collision-avoidance: nature's many solutions. Nature Neuroscience, 1998, 1, 261-263.	7.1	31
64	Thoracic intersegmental interneurones in the locust with mechanoreceptive inputs from a leg. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1986, 159, 171-186.	0.7	30
65	Odor Images and Tunes. Neuron, 1996, 16, 473-476.	3.8	30
66	Spatial Information in a Non-retinotopic Visual Cortex. Neuron, 2018, 97, 164-180.e7.	3.8	28
67	On the Value of Reptilian Brains to Map the Evolution of the Hippocampal Formation. Brain, Behavior and Evolution, 2017, 90, 41-52.	0.9	27
68	Large-scale mapping of cortical synaptic projections with extracellular electrode arrays. Nature Methods, 2017, 14, 882-890.	9.0	26
69	Embryonic development of a population of spiking local interneurones in the locust (Schistocerca) Tj ETQq1 1 0.784314 rgBT /Overlo	0.9	25
70	The Organization and Role During Locomotion of the Proximal Musculature of the Cricket Foreleg I. Anatomy and Innervation. Journal of Experimental Biology, 1986, 123, 255-283.	0.8	24
71	GABA-like immunoreactivity in a population of locust intersegmental interneurones and their inputs. Journal of Comparative Neurology, 1990, 302, 761-767.	0.9	20
72	Parallel effects of joint receptors on motor neurones and intersegmental interneurones in the locust. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1987, 160, 341-353.	0.7	18

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73	Embryonic development of synapses on spiking local interneurones in locust. Journal of Comparative Neurology, 1992, 324, 213-236.	0.9	16
74	Rhythmic Modulation of the Responsiveness of Locust Sensory Local Interneurons by Walking Pattern Generating Networks. Journal of Neurophysiology, 1994, 71, 110-118.	0.9	16
75	Consensus-Based Sorting of Neuronal Spike Waveforms. PLoS ONE, 2016, 11, e0160494.	1.1	16
76	The many ways of building collision-sensitive neurons. Trends in Neurosciences, 1999, 22, 437-438.	4.2	14
77	Distribution of GABAergic synaptic terminals on the dendrites of locust spiking local interneurones. Journal of Comparative Neurology, 1993, 337, 461-470.	0.9	11
78	Comparative approaches to cortical microcircuits. Current Opinion in Neurobiology, 2016, 41, 24-30.	2.0	11
79	A simple method to reconstruct firing rates from dendritic calcium signals. Frontiers in Neuroscience, 2008, 2, 176-185.	1.4	10
80	Electric Times in Olfaction. Neuron, 2010, 67, 903-905.	3.8	6
81	What does 'understanding' mean?. Nature Neuroscience, 2000, 3, 1211-1211.	7.1	4
82	Dynamic representation of odours by oscillating neural assemblies. Entomologia Experimentalis Et Applicata, 1999, 91, 7-18.	0.7	3
83	Connectomics: aÂneed for comparative studies. E-Neuroforum, 2016, 7, 54-55.	0.2	2
84	Connectomics: a need for comparative studies. E-Neuroforum, 2016, 22, .	0.2	0
85	Temporal Coding with Oscillatory Sequences of Firing. , 1998, , 303-307.		0
86	Dynamic representation of odours by oscillating neural assemblies. , 1999, , 7-18.		0