Weijian Yang

List of Publications by Year
in descending order

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Version: 2024-02-01

116 papers	11,977 citations	50170 46 h-index	38300 95 g-index
129 all docs	129 docs citations	129 times ranked	11393 citing authors

#	Article	IF	Citations
1	Dendritic spines as basic functional units of neuronal integration. Nature, 1995, 375, 682-684.	13.7	873
2	Simultaneous Denoising, Deconvolution, and Demixing of Calcium Imaging Data. Neuron, 2016, 89, 285-299.	3.8	843
3	Attractor dynamics of network UP states in the neocortex. Nature, 2003, 423, 283-288.	13.7	581
4	Control of postsynaptic Ca2+ influx in developing neocortex by excitatory and inhibitory neurotransmitters. Neuron, 1991, 6, 333-344.	3.8	564
5	From the neuron doctrine to neural networks. Nature Reviews Neuroscience, 2015, 16, 487-497.	4.9	547
6	Dense Inhibitory Connectivity in Neocortex. Neuron, 2011, 69, 1188-1203.	3.8	491
7	High-contrast gratings for integrated optoelectronics. Advances in Optics and Photonics, 2012, 4, 379.	12.1	443
8	Fast Nonnegative Deconvolution for Spike Train Inference From Population Calcium Imaging. Journal of Neurophysiology, 2010, 104, 3691-3704.	0.9	404
9	Super-multiplex vibrational imaging. Nature, 2017, 544, 465-470.	13.7	374
10	In vivo imaging of neural activity. Nature Methods, 2017, 14, 349-359.	9.0	364
11	Two-photon optogenetic toolbox for fast inhibition, excitation and bistable modulation. Nature Methods, 2012, 9, 1171-1179.	9.0	299
12	SLM microscopy: scanless two-photon imaging and photostimulation using spatial light modulators. Frontiers in Neural Circuits, 2008, 2, 5.	1.4	297
13	Detecting Action Potentials in Neuronal Populations with Calcium Imaging. Methods, 1999, 18, 215-221.	1.9	271
14	Visual stimuli recruit intrinsically generated cortical ensembles. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, E4053-61.	3.3	263
15	Imprinting and recalling cortical ensembles. Science, 2016, 353, 691-694.	6.0	263
16	Two-photon optogenetics of dendritic spines and neural circuits. Nature Methods, 2012, 9, 1202-1205.	9.0	255
17	Controlling Visually Guided Behavior by Holographic Recalling of Cortical Ensembles. Cell, 2019, 178, 447-457.e5.	13.5	254
18	Two-photon photostimulation and imaging of neural circuits. Nature Methods, 2007, 4, 943-950.	9.0	240

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19	Simultaneous Multi-plane Imaging of Neural Circuits. Neuron, 2016, 89, 269-284.	3.8	209
20	Opening Holes in the Blanket of Inhibition: Localized Lateral Disinhibition by VIP Interneurons. Journal of Neuroscience, 2016, 36, 3471-3480.	1.7	199
21	A community-based transcriptomics classification and nomenclature of neocortical cell types. Nature Neuroscience, 2020, 23, 1456-1468.	7.1	183
22	Cooperative Subnetworks of Molecularly Similar Interneurons in Mouse Neocortex. Neuron, 2016, 90, 86-100.	3.8	173
23	Simultaneous two-photon imaging and two-photon optogenetics of cortical circuits in three dimensions. ELife, 2018, 7, .	2.8	167
24	Non-overlapping Neural Networks in Hydra vulgaris. Current Biology, 2017, 27, 1085-1097.	1.8	162
25	Electrical Compartmentalization in Dendritic Spines. Annual Review of Neuroscience, 2013, 36, 429-449.	5.0	157
26	moco: Fast Motion Correction for Calcium Imaging. Frontiers in Neuroinformatics, 2016, 10, 6.	1.3	156
27	Altered Cortical Ensembles in Mouse Models of Schizophrenia. Neuron, 2017, 94, 153-167.e8.	3.8	152
28	A blanket of inhibition: functional inferences from dense inhibitory connectivity. Current Opinion in Neurobiology, 2014, 26, 96-102.	2.0	148
29	Comparative Evaluation of Genetically Encoded Voltage Indicators. Cell Reports, 2019, 26, 802-813.e4.	2.9	137
30	Somatostatin Interneurons Control a Key Component of Mismatch Negativity in Mouse Visual Cortex. Cell Reports, 2016, 16, 597-604.	2.9	124
31	Recent advances in high-contrast metastructures, metasurfaces, and photonic crystals. Advances in Optics and Photonics, 2018, 10, 180.	12.1	119
32	A very large-scale microelectrode array for cellular-resolution electrophysiology. Nature Communications, 2017, 8, 1802.	5.8	114
33	Endogenous Sequential Cortical Activity Evoked by Visual Stimuli. Journal of Neuroscience, 2015, 35, 8813-8828.	1.7	110
34	Instantaneous three-dimensional sensing using spatial light modulator illumination with extended depth of field imaging. Optics Express, 2013, 21, 16007.	1.7	90
35	Imaging and Optically Manipulating Neuronal Ensembles. Annual Review of Biophysics, 2017, 46, 271-293.	4.5	90
36	Genetic voltage indicators. BMC Biology, 2019, 17, 71.	1.7	87

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37	Long-Wavelength VCSEL Using High-Contrast Grating. IEEE Journal of Selected Topics in Quantum Electronics, 2013, 19, 1701311-1701311.	1.9	84
38	Simultaneous imaging of neural activity in three dimensions. Frontiers in Neural Circuits, 2014, 8, 29.	1.4	79
39	Role of inhibitory control in modulating focal seizure spread. Brain, 2018, 141, 2083-2097.	3.7	75
40	Calcium imaging of neural circuits with extended depth-of-field light-sheet microscopy. Optics Letters, 2016, 41, 855.	1.7	71
41	Heterogeneously integrated long-wavelength VCSEL using silicon high contrast grating on an SOI substrate. Optics Express, 2015, 23, 2512.	1.7	67
42	Optical phased array using high contrast gratings for two dimensional beamforming and beamsteering. Optics Express, 2013, 21, 12238.	1.7	66
43	The new nanophysiology: regulation of ionic flow in neuronal subcompartments. Nature Reviews Neuroscience, 2015, 16, 685-692.	4.9	65
44	Parvalbumin-Positive Interneurons Regulate Neuronal Ensembles in Visual Cortex. Cerebral Cortex, 2018, 28, 1831-1845.	1.6	65
45	On the Necessity of Ethical Guidelines for Novel Neurotechnologies. Cell, 2016, 167, 882-885.	13.5	61
46	Playing the piano with the cortex: role of neuronal ensembles and pattern completion in perception and behavior. Current Opinion in Neurobiology, 2020, 64, 89-95.	2.0	56
47	Roadmap on holography. Journal of Optics (United Kingdom), 2020, 22, 123002.	1.0	54
48	High speed optical phased array using high contrast grating all-pass filters. Optics Express, 2014, 22, 20038.	1.7	49
49	Reduced Repertoire of Cortical Microstates and Neuronal Ensembles in Medically Induced Loss of Consciousness. Cell Systems, 2019, 8, 467-474.e4.	2.9	47
50	The discovery of dendritic spines by Cajal. Frontiers in Neuroanatomy, 2015, 9, 18.	0.9	46
51	Very high efficiency optical coupler for silicon nanophotonic waveguide and single mode optical fiber. Optics Express, 2017, 25, 18462.	1.7	45
52	Monolithic high-contrast metastructure for beam-shaping VCSELs. Optica, 2018, 5, 10.	4.8	45
53	Toward a Global BRAIN Initiative. Cell, 2017, 168, 956-959.	13.5	44
54	A 32 Ã— 32 optical phased array using polysilicon sub-wavelength high-contrast-grating mirrors. Optics Express, 2014, 22, 19029.	1.7	40

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55	Long-term stability of cortical ensembles. ELife, 2021, 10, .	2.8	40
56	Deconvolution of Voltage Sensor Time Series and Electro-diffusion Modeling Reveal the Role of Spine Geometry in Controlling Synaptic Strength. Neuron, 2018, 97, 1126-1136.e10.	3.8	38
57	Holographic imaging and photostimulation of neural activity. Current Opinion in Neurobiology, 2018, 50, 211-221.	2.0	37
58	Performance of a Multi-Gb/s 60 GHz Radio Over Fiber System Employing a Directly Modulated Optically Injection-Locked VCSEL. Journal of Lightwave Technology, 2010, 28, 2436-2444.	2.7	35
59	Multi-scale approaches for high-speed imaging and analysis of large neural populations. PLoS Computational Biology, 2017, 13, e1005685.	1.5	35
60	Two-Color Volumetric Imaging of Neuronal Activity of Cortical Columns. Cell Reports, 2019, 27, 2229-2240.e4.	2.9	33
61	Low loss hollow-core waveguide on a silicon substrate. Nanophotonics, 2012, 1, 23-29.	2.9	31
62	Laser optomechanics. Scientific Reports, 2015, 5, 13700.	1.6	31
63	Aberrant Cortical Ensembles and Schizophrenia-like Sensory Phenotypes in Setd1a+/â˜ Mice. Biological Psychiatry, 2020, 88, 215-223.	0.7	29
64	Cortical ensembles selective for context. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	29
65	Two-photon microscopy with diffractive optical elements and spatial light modulators. Frontiers in Neuroscience, 2010, 4, .	1.4	24
66	Experimental and theoretical study of wide hysteresis cycles in 1550 nm VCSELs under optical injection. Optics Express, 2013, 21, 3125.	1.7	24
67	Wavelet-transform analysis for group delay extraction of white light spectral interferograms. Optics Express, 2009, 17, 6038.	1.7	19
68	Surface-normal coupled four-wave mixing in a high contrast gratings resonator. Optics Express, 2015, 23, 29565.	1.7	17
69	Tracking calcium dynamics from individual neurons in behaving animals. PLoS Computational Biology, 2021, 17, e1009432.	1.5	17
70	Time for NanoNeuro. Nature Methods, 2021, 18, 1287-1293.	9.0	17
71	Two-Photon Optogenetic Mapping of Excitatory Synaptic Connectivity and Strength. IScience, 2018, 8, 15-28.	1.9	16
72	A National Network of Neurotechnology Centers for the BRAIN Initiative. Neuron, 2015, 88, 445-448.	3.8	15

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73	Intracranial alternating current stimulation facilitates neurogenesis in a mouse model of Alzheimerâ€™s disease. Alzheimer's Research and Therapy, 2020, 12, 89.	3.0	15
74	Direct measurement of group delay with joint time-frequency analysis of a white-light spectral interferogram. Optics Letters, 2008, 33, 2855.	1.7	14
75	Reflection-mode optical injection locking. Optics Express, 2010, 18, 20887.	1.7	14
76	Optimal Tuning of Memristor Conductance Variation in Spiking Neural Networks for Online Unsupervised Learning. IEEE Transactions on Electron Devices, 2019, 66, 2844-2849.	1.6	14
77	Deep compressed imaging via optimized pattern scanning. Photonics Research, 2021, 9, B57.	3.4	12
78	Hot carriers induced degradation in thin gate oxide MOSFETs. , 1983, , .		11
79	Optical phase modulation based on directly modulated reflection-mode OIL-VCSEL. Optics Express, 2013, 21, 22114.	1.7	11
80	GEOMScope: Large Fieldâ€ofâ€View 3D Lensless Microscopy with Low Computational Complexity. Laser and Photonics Reviews, 2021, 15, 2100072.	4.4	11
81	Surface-normal second harmonic emission from AlGaAs high-contrast gratings. Applied Physics Letters, 2013, 102, 021102.	1.5	9
82	Temporal dynamics in fMRI resting-state activity. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 5263-5264.	3.3	9
83	Group delay dispersion measurement of Yb:Gd_2SiO_5, Yb:GdYSiO_5 and Yb:LuYSiO_5crystal with white-light interferometry. Optics Express, 2007, 15, 8486.	1.7	8
84	An ellipse model for cavity mode behavior of optically injection-locked VCSELs. Optics Express, 2012, 20, 6980.	1.7	8
85	Long-Wavelength Tunable Detector Using High-Contrast Grating. IEEE Journal of Selected Topics in Quantum Electronics, 2014, 20, 178-185.	1.9	7
86	Novel Ring Cavity for Ytterbium-Doped Mode-Locked Fiber Laser Incorporated With Both SESAM and Grating Pair. IEEE Photonics Technology Letters, 2009, 21, 3-5.	1.3	6
87	Low-loss slow light inside high contrast grating waveguide. Proceedings of SPIE, 2012, , .	0.8	5
88	An increase in spontaneous activity mediates visual habituation. Cell Reports, 2022, 39, 110751.	2.9	5
89	Systematic approach of FinFET based SRAM bitcell design for 32nm node and below. , 2009, , .		4
90	On testing neural network models. Nature Reviews Neuroscience, 2015, 16, 767-767.	4.9	4

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91	Brain maps at the nanoscale. Nature Biotechnology, 2019, 37, 378-380.	9.4	4
92	High speed, ultra-compact spectrometer using high contrast grating swept-wavelength detector. , 2013, , .		3
93	Novel Three-dimensional Hollow-core Waveguide Using High-contrast Sub-wavelength Grating. , 2011, , .		3
94	Group delay dispersion measurement of Yb3+:YAl3(BO3)4 crystal with white-light interferometry. Optics Communications, 2008, 281, 679-682.	1.0	2
95	Three-Dimensional Chirped High-Contrast Grating Hollow-Core Waveguide. IEEE Photonics Journal, 2012, 4, 1372-1380.	1.0	2
96	Manipulating neuronal circuits, in concert. Science, 2021, 373, 635-635.	6.0	2
97	Holographic Imaging and Stimulation of Neural Circuits. Advances in Experimental Medicine and Biology, 2021, 1293, 613-639.	0.8	2
98	Beam-Shaping Single-Mode VCSEL With A High-Contrast Grating Mirror. , 2016, , .		2
99	Experimental characterization on high contrast grating reflectivity. , 2012, , .		1
100	Tunable 1550-nm High Contrast Grating VCSEL Detector. , 2013, , .		1
101	Ultra-compact Optical Switch Using High Contrast Grating Hollow-core Waveguide. , 2013, , .		1
102	Heterogeneously Integrated Long-Wavelength VCSEL using High-Contrast Grating on Silicon. , 2014, , .		1
103	Bifunctional 1550-nm Tunable Device and Its Transmission Characteristics. , 2014, , .		1
104	Heterogeneously-integrated VCSEL using high-contrast grating on silicon. , 2015, , .		1
105	Compact On-Chip Optical Components Based on Multimode Interference Design Using High-Contrast Grating Hollow-Core Waveguides. IEEE Journal of Selected Topics in Quantum Electronics, 2016, 22, 279-287.	1.9	1
106	Addendum: A very large-scale microelectrode array for cellular-resolution electrophysiology. Nature Communications, 2018, 9, 4497.	5.8	1
107	Reply to â€˜Only negligible deviations from electroneutrality are expected in dendritic spinesâ€™. Nature Reviews Neuroscience, 2020, 21, 54-55.	4.9	1
108	Three-dimensional Imaging with a Single Layer of Random Microlens Array. , 2020, , .		1

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109	Linewidth Measurement of 1550 nm High Contrast Grating MEMS-VCSELs. , 2013, , .		1
110	Group delay dispersion measurement of Yb:YAB crystal with white-light interferometry. , 2007, , .		0
111	Chromatic dispersion characterization of a chirped mirror with wavelet analysis of white-light spectral interferograms. , 2009, , .		0
112	Optical phased array using high-contrast grating all-pass filters for fast beam steering. , 2013, , .		0
113	High-contrast grating MEMS optical phase-shifters for two-dimensional free-space beam steering. Proceedings of SPIE, 2014, , .	0.8	0
114	High-speed 32Ã—32 MEMS optical phased array. Proceedings of SPIE, 2014, , .	0.8	0
115	RF Down-Conversion Based on Optically Injection-locked VCSEL. , 2012, , .		0
116	Broadband Self-Swept High Contrast Grating VCSEL. , 2015, , .		0