Charu Ramakrishnan

List of Publications by Year
in descending order

86 papers	20,920 citations	30070 54 h-index	54911 84 g-index
97 all docs	97 docs citations	97 times ranked	22764 citing authors

#	Article	IF	Citations
1	Neocortical excitation/inhibition balance in information processing and social dysfunction. Nature, 2011, 477, 171-178.	27.8	2,036
2	Structural and molecular interrogation of intact biological systems. Nature, 2013, 497, 332-337.	27.8	1,765
3	Amygdala circuitry mediating reversible and bidirectional control of anxiety. Nature, 2011, 471, 358-362.	27.8	1,073
4	Molecular and Cellular Approaches for Diversifying and Extending Optogenetics. Cell, 2010, 141, 154-165.	28.9	919
5	Three-dimensional intact-tissue sequencing of single-cell transcriptional states. Science, 2018, 361, .	12.6	890
6	Principles for applying optogenetic tools derived from direct comparative analysis of microbial opsins. Nature Methods, 2012, 9, 159-172.	19.0	666
7	Global and local fMRI signals driven by neurons defined optogenetically by type and wiring. Nature, 2010, 465, 788-792.	27.8	659
8	Recombinase-Driver Rat Lines: Tools, Techniques, and Optogenetic Application to Dopamine-Mediated Reinforcement. Neuron, 2011, 72, 721-733.	8.1	593
9	Midbrain circuits for defensive behaviour. Nature, 2016, 534, 206-212.	27.8	546
10	Crystal structure of the channelrhodopsin light-gated cation channel. Nature, 2012, 482, 369-374.	27.8	503
11	Dynamics of Retrieval Strategies for Remote Memories. Cell, 2011, 147, 678-689.	28.9	481
12	Visualizing Hypothalamic Network Dynamics for Appetitive and Consummatory Behaviors. Cell, 2015, 160, 516-527.	28.9	458
13	Cortical layerâ€“specific critical dynamics triggering perception. Science, 2019, 365, .	12.6	447
14	Targeting cells with single vectors using multiple-feature Boolean logic. Nature Methods, 2014, 11, 763-772.	19.0	427
15	Prefrontal cortical regulation of brainwide circuit dynamics and reward-related behavior. Science, 2016, 351, aac9698.	12.6	427
16	Cholinergic Interneurons Control Local Circuit Activity and Cocaine Conditioning. Science, 2010, 330, 1677-1681.	12.6	417
17	An optogenetic toolbox designed for primates. Nature Neuroscience, 2011, 14, 387-397.	14.8	400
18	Projections from neocortex mediate top-down control of memory retrieval. Nature, 2015, 526, 653-659.	27.8	376

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19	Serotonin engages an anxiety and fear-promoting circuit in the extended amygdala. Nature, 2016, 537, 97-101.	27.8	362
20	Simultaneous fast measurement of circuit dynamics at multiple sites across the mammalian brain. Nature Methods, 2016, 13, 325-328.	19.0	359
21	Structure-Guided Transformation of Channelrhodopsin into a Light-Activated Chloride Channel. Science, 2014, 344, 420-424.	12.6	354
22	Two-photon optogenetic toolbox for fast inhibition, excitation and bistable modulation. Nature Methods, 2012, 9, 1171-1179.	19.0	299
23	Wiring and Molecular Features of Prefrontal Ensembles Representing Distinct Experiences. Cell, 2016, 165, 1776-1788.	28.9	295
24	A Unique Population of Ventral Tegmental Area Neurons Inhibits the Lateral Habenula to Promote Reward. Neuron, 2013, 80, 1039-1053.	8.1	290
25	Mapping projections of molecularly defined dopamine neuron subtypes using intersectional genetic approaches. Nature Neuroscience, 2018, 21, 1260-1271.	14.8	283
26	Competition between engrams influences fear memory formation and recall. Science, 2016, 353, 383-387.	12.6	278
27	In vivo imaging identifies temporal signature of D1 and D2 medium spiny neurons in cocaine reward. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 2726-2731.	7.1	258
28	Dopaminergic dynamics underlying sex-specific cocaine reward. Nature Communications, 2017, 8, 13877.	12.8	256
29	Modulation of prefrontal cortex excitation/inhibition balance rescues social behavior in CNTNAP2 -deficient mice. Science Translational Medicine, 2017, 9, .	12.4	252
30	A Brainstem-Spinal Cord Inhibitory Circuit for Mechanical Pain Modulation by GABA and Enkephalins. Neuron, 2017, 93, 822-839.e6.	8.1	250
31	Thirst-associated preoptic neurons encode an aversive motivational drive. Science, 2017, 357, 1149-1155.	12.6	233
32	Endocannabinoid Modulation of Orbitostriatal Circuits Gates Habit Formation. Neuron, 2016, 90, 1312-1324.	8.1	208
33	Rational Engineering of XCaMPs, a Multicolor GECI Suite for InÂVivo Imaging of Complex Brain Circuit Dynamics. Cell, 2019, 177, 1346-1360.e24.	28.9	199
34	Structural foundations of optogenetics: Determinants of channelrhodopsin ion selectivity. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 822-829.	7.1	197
35	Virally mediated optogenetic excitation and inhibition of pain in freely moving nontransgenic mice. Nature Biotechnology, 2014, 32, 274-278.	17.5	191
36	A neuronal circuit for activating descending modulation of neuropathic pain. Nature Neuroscience, 2019, 22, 1659-1668.	14.8	185

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37	Nucleus accumbens D2R cells signal prior outcomes and control risky decision-making. Nature, 2016, 531, 642-646.	27.8	178
38	Interacting neural ensembles in orbitofrontal cortex for social and feeding behaviour. Nature, 2019, 565, 645-649.	27.8	165
39	The central amygdala controls learning in the lateral amygdala. Nature Neuroscience, 2017, 20, 1680-1685.	14.8	159
40	Deep brain optogenetics without intracranial surgery. Nature Biotechnology, 2021, 39, 161-164.	17.5	139
41	Genetically targeted chemical assembly of functional materials in living cells, tissues, and animals. Science, 2020, 367, 1372-1376.	12.6	132
42	Molecular and Circuit-Dynamical Identification of Top-Down Neural Mechanisms for Restraint of Reward Seeking. Cell, 2017, 170, 1013-1027.e14.	28.9	129
43	Developmental Dysfunction of VIP Interneurons Impairs Cortical Circuits. Neuron, 2017, 95, 884-895.e9.	8.1	123
44	Long-Range GABAergic Inputs Regulate Neural Stem Cell Quiescence and Control Adult Hippocampal Neurogenesis. Cell Stem Cell, 2017, 21, 604-617.e5.	11.1	119
45	A hypothalamus-habenula circuit controls aversion. Molecular Psychiatry, 2019, 24, 1351-1368.	7.9	111
46	Two genetically, anatomically and functionally distinct cell types segregate across anteroposterior axis of paraventricular thalamus. Nature Neuroscience, 2020, 23, 217-228.	14.8	107
47	In Vivo Fiber Photometry Reveals Signature of Future Stress Susceptibility in Nucleus Accumbens. Neuropsychopharmacology, 2018, 43, 255-263.	5.4	105
48	Gamma oscillations organize top-down signalling to hypothalamus and enable food seeking. Nature, 2017, 542, 232-236.	27.8	102
49	Crystal structure of the natural anion-conducting channelrhodopsin GtACR1. Nature, 2018, 561, 343-348.	27.8	93
50	Comprehensive Dual- and Triple-Feature Intersectional Single-Vector Delivery of Diverse Functional Payloads to Cells of Behaving Mammals. Neuron, 2020, 107, 836-853.e11.	8.1	93
51	An Open Resource for Non-human Primate Optogenetics. Neuron, 2020, 108, 1075-1090.e6.	8.1	79
52	Optogenetic and chemogenetic strategies for sustained inhibition of pain. Scientific Reports, 2016, 6, 30570.	3.3	72
53	Structural basis for channel conduction in the pump-like channelrhodopsin ChRmine. Cell, 2022, 185, 672-689.e23.	28.9	72
54	Structural mechanisms of selectivity and gating in anion channelrhodopsins. Nature, 2018, 561, 349-354.	27.8	67

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55	InÂVivo Interrogation of Spinal Mechanosensory Circuits. Cell Reports, 2016, 17, 1699-1710.	6.4	62
56	Distinct Signaling by Ventral Tegmental Area Glutamate, GABA, and Combinatorial Glutamate-GABA Neurons in Motivated Behavior. Cell Reports, 2020, 32, 108094.	6.4	60
57	Optogenetic Delay of Status Epilepticus Onset in an In Vivo Rodent Epilepsy Model. PLoS ONE, 2013, 8, e62013.	2.5	58
58	Genetically identified amygdalaâ€“striatal circuits for valence-specific behaviors. Nature Neuroscience, 2021, 24, 1586-1600.	14.8	56
59	Molecular chaperones and subcellular trafficking of steroid receptors. Journal of Steroid Biochemistry and Molecular Biology, 1998, 65, 51-58.	2.5	55
60	High-speed interferometric imaging reveals dynamics of neuronal deformation during the action potential. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 10278-10285.	7.1	53
61	Mapping Brain-Wide Afferent Inputs of Parvalbumin-Expressing GABAergic Neurons in Barrel Cortex Reveals Local and Long-Range Circuit Motifs. Cell Reports, 2019, 28, 3450-3461.e8.	6.4	52
62	A functional cellular framework for sex and estrous cycle-dependent gene expression and behavior. Cell, 2022, 185, 654-671.e22.	28.9	52
63	Place field assembly distribution encodes preferred locations. PLoS Biology, 2017, 15, e2002365.	5.6	51
64	A Genetically Defined Compartmentalized Striatal Direct Pathway for Negative Reinforcement. Cell, 2020, 183, 211-227.e20.	28.9	49
65	Functional maturation of human neural stem cells in a 3D bioengineered brain model enriched with fetal brain-derived matrix. Scientific Reports, 2019, 9, 17874.	3.3	46
66	A neural circuit state change underlying skilled movements. Cell, 2021, 184, 3731-3747.e21.	28.9	45
67	Dendritic calcium signals in rhesus macaque motor cortex drive an optical brain-computer interface. Nature Communications, 2021, 12, 3689.	12.8	38
68	Frequency-Dependent, Cell Type-Divergent Signaling in the Hippocamposeptal Projection. Journal of Neuroscience, 2014, 34, 11769-11780.	3.6	35
69	Optogenetic approaches addressing extracellular modulation of neural excitability. Scientific Reports, 2016, 6, 23947.	3.3	34
70	Sox6 expression distinguishes dorsally and ventrally biased dopamine neurons in the substantia nigra with distinctive properties and embryonic origins. Cell Reports, 2021, 37, 109975.	6.4	33
71	Transcriptional and functional divergence in lateral hypothalamic glutamate neurons projecting to the lateral habenula and ventral tegmental area. Neuron, 2021, 109, 3823-3837.e6.	8.1	31
72	Excitation of Diverse Classes of Cholecystokinin Interneurons in the Basal Amygdala Facilitates Fear Extinction. ENeuro, 2019, 6, ENEURO.0220-19.2019.	1.9	30

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73	Development of an optogenetic toolkit for neural circuit dissection in squirrel monkeys. Scientific Reports, 2018, 8, 6775.	3.3	28
74	Striosomes Mediate Value-Based Learning Vulnerable in Age and a Huntingtonâ€™s Disease Model. Cell, 2020, 183, 918-934.e49.	28.9	27
75	A Guide to Creating and Testing New INTRSECT Constructs. Current Protocols in Neuroscience, 2017, 80, 4.39.1-4.39.24.	2.6	25
76	Selective filtering of excitatory inputs to nucleus accumbens by dopamine and serotonin. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	23
77	Reciprocal Lateral Hypothalamic and Raphe GABAergic Projections Promote Wakefulness. Journal of Neuroscience, 2021, 41, 4840-4849.	3.6	15
78	Investigating the feasibility of channelrhodopsin variants for nanoscale optogenetics. Neurophotonics, 2019, 6, 1.	3.3	15
79	Human pluripotent stem cell tools for cardiac optogenetics. , 2014, 2014, 6171-4.		13
80	Steroid hormone responsiveness of a family of closely related mouse proviral elements. Mammalian Genome, 1997, 8, 811-817.	2.2	10
81	Scale-Invariant Visual Capabilities Explained by Topographic Representations of Luminance and Texture in Primate V1. Neuron, 2018, 100, 1504-1512.e4.	8.1	8
82	Dynamics of Retrieval Strategies for Remote Memories. Cell, 2011, 147, 1197.	28.9	6
83	An uncommon neuronal class conveys visual signals from rods and cones to retinal ganglion cells. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, e2104884118.	7.1	6
84	Similar neural and perceptual masking effects of low-power optogenetic stimulation in primate V1. ELife, 2022, 11, .	6.0	6
85	Lee et al. reply. Nature, 2010, 468, E4-E5.	27.8	3
86	1PT128 Crystal Structure of a light-gated cation channel, channeirhodopsin(The 50th Annual Meeting) Tj ETQq0 0 0 rgBT /Overlock 10 T	0.1	0