Mark M Churchland

List of Publications by Year
in descending order

44 papers	8,618 citations	117625 34 h-index	265206 42 g-index
58 all docs	58 docs citations	58 times ranked	4951 citing authors

#	Article	IF	Citations
1	Neural population dynamics during reaching. Nature, 2012, 487, 51-56.	27.8	1,195
2	Stimulus onset quenches neural variability: a widespread cortical phenomenon. Nature Neuroscience, 2010, 13, 369-378.	14.8	907
3	Cortical Control of Arm Movements: A Dynamical Systems Perspective. Annual Review of Neuroscience, 2013, 36, 337-359.	10.7	633
4	Cortical activity in the null space: permitting preparation without movement. Nature Neuroscience, 2014, 17, 440-448.	14.8	582
5	A high-performance neural prosthesis enabled by control algorithm design. Nature Neuroscience, 2012, 15, 1752-1757.	14.8	454
6	A neural network that finds a naturalistic solution for the production of muscle activity. Nature Neuroscience, 2015, 18, 1025-1033.	14.8	426
7	Cortical Preparatory Activity: Representation ofÂMovement or First Cog in a Dynamical Machine?. Neuron, 2010, 68, 387-400.	8.1	406
8	Neural Variability in Premotor Cortex Provides a Signature of Motor Preparation. Journal of Neuroscience, 2006, 26, 3697-3712.	3.6	369
9	A Central Source of Movement Variability. Neuron, 2006, 52, 1085-1096.	8.1	338
10	Temporal Complexity and Heterogeneity of Single-Neuron Activity in Premotor and Motor Cortex. Journal of Neurophysiology, 2007, 97, 4235-4257.	1.8	281
11	Reorganization between preparatory and movement population responses in motor cortex. Nature Communications, 2016, 7, 13239.	12.8	273
12	Preparatory Activity in Premotor and Motor Cortex Reflects the Speed of the Upcoming Reach. Journal of Neurophysiology, 2006, 96, 3130-3146.	1.8	239
13	Motor Cortex Embeds Muscle-like Commands in an Untangled Population Response. Neuron, 2018, 97, 953-966.e8.	8.1	216
14	The Largest Response Component in the Motor Cortex Reflects Movement Timing but Not Movement Type. ENeuro, 2016, 3, ENEURO.0085-16.2016.	1.9	173
15	Single-trial dynamics of motor cortex and their applications to brain-machine interfaces. Nature Communications, 2015, 6, 7759.	12.8	148
16	Single-Neuron Stability during Repeated Reaching in Macaque Premotor Cortex. Journal of Neuroscience, 2007, 27, 10742-10750.	3.6	145
17	Constraints on the Source of Short-Term Motion Adaptation in Macaque Area MT. I. The Role of Input and Intrinsic Mechanisms. Journal of Neurophysiology, 2002, 88, 354-369.	1.8	142
18	Techniques for extracting single-trial activity patterns from large-scale neural recordings. Current Opinion in Neurobiology, 2007, 17, 609-618.	4.2	141

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19	Delay of Movement Caused by Disruption of Cortical Preparatory Activity. Journal of Neurophysiology, 2007, 97, 348-359.	1.8	132
20	Behaviorally Selective Engagement of Short-Latency Effector Pathways by Motor Cortex. Neuron, 2017, 95, 683-696.e11.	8.1	123
21	Roles of Monkey Premotor Neuron Classes in Movement Preparation and Execution. Journal of Neurophysiology, 2010, 104, 799-810.	1.8	122
22	Neural Trajectories in the Supplementary Motor Area and Motor Cortex Exhibit Distinct Geometries, Compatible with Different Classes of Computation. Neuron, 2020, 107, 745-758.e6.	8.1	90
23	Vacillation, indecision and hesitation in moment-by-moment decoding of monkey motor cortex. ELife, 2015, 4, e04677.	6.0	90
24	Motor cortex signals for each arm are mixed across hemispheres and neurons yet partitioned within the population response. ELife, 2019, 8, .	6.0	88
25	Conservation of preparatory neural events in monkey motor cortex regardless of how movement is initiated. ELife, 2018, 7, .	6.0	80
26	Evidence for Object Permanence in the Smooth-Pursuit Eye Movements of Monkeys. Journal of Neurophysiology, 2003, 90, 2205-2218.	1.8	78
27	Shifts in the Population Response in the Middle Temporal Visual Area Parallel Perceptual and Motor Illusions Produced by Apparent Motion. Journal of Neuroscience, 2001, 21, 9387-9402.	3.6	77
28	The roles of monkey M1 neuron classes in movement preparation and execution. Journal of Neurophysiology, 2013, 110, 817-825.	1.8	76
29	A dynamical systems view of motor preparation. Progress in Brain Research, 2011, 192, 33-58.	1.4	62
30	Independent generation of sequence elements by motor cortex. Nature Neuroscience, 2021, 24, 412-424.	14.8	59
31	Experimental and Computational Analysis of Monkey Smooth Pursuit Eye Movements. Journal of Neurophysiology, 2001, 86, 741-759.	1.8	49
32	Two layers of neural variability. Nature Neuroscience, 2012, 15, 1472-1474.	14.8	48
33	Tensor Analysis Reveals Distinct Population Structure that Parallels the Different Computational Roles of Areas M1 and V1. PLoS Computational Biology, 2016, 12, e1005164.	3.2	46
34	Reconstruction of Target Speed for the Guidance of Pursuit Eye Movements. Journal of Neuroscience, 2001, 21, 3196-3206.	3.6	40
35	Comparison of the Spatial Limits on Direction Selectivity in Visual Areas MT and V1. Journal of Neurophysiology, 2005, 93, 1235-1245.	1.8	40
36	DataHigh: graphical user interface for visualizing and interacting with high-dimensional neural activity. Journal of Neural Engineering, 2013, 10, 066012.	3.5	39

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37	Apparent Motion Produces Multiple Deficits in Visually Guided Smooth Pursuit Eye Movements of Monkeys. Journal of Neurophysiology, 2000, 84, 216-235.	1.8	38
38	Postural control of arm and fingers through integration of movement commands. ELife, 2020, 9, .	6.0	34
39	Motor cortex activity across movement speeds is predicted by network-level strategies for generating muscle activity. ELife, 0, 11, .	6.0	27
40	A Dynamical Basis Set for Generating Reaches. Cold Spring Harbor Symposia on Quantitative Biology, 2014, 79, 67-80.	1.1	26
41	Perturbation of Macaque Supplementary Motor Area Produces Context-Independent Changes in the Probability of Movement Initiation. Journal of Neuroscience, 2019, 39, 3217-3233.	3.6	13
42	Using the precision of the primate to study the origins of movement variability. Neuroscience, 2015, 296, 92-100.	2.3	10
43	Cortical Control of Virtual Self-Motion Using Task-Specific Subspaces. Journal of Neuroscience, 2022, 42, 220-239.	3.6	10
44	Editorial overview: Motor circuits and action. Current Opinion in Neurobiology, 2015, 33, v-vi.	4.2	0