Jose M Carmena

List of Publications by Year
in descending order

109 papers	10,122 citations	53794 45 h-index	53230 85 g-index
120 all docs	120 docs citations	120 times ranked	7843 citing authors

#	Article	IF	Citations
1	Learning to Control a Brainâ€"Machine Interface for Reaching and Grasping by Primates. PLoS Biology, 2003, 1, e42.	5.6	1,427
2	Chronic, multisite, multielectrode recordings in macaque monkeys. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 11041-11046.	7.1	736
3	Emergence of a Stable Cortical Map for Neuroprosthetic Control. PLoS Biology, 2009, 7, e1000153.	5.6	469
4	Wireless Recording in the Peripheral Nervous System with Ultrasonic Neural Dust. Neuron, 2016, 91, 529-539.	8.1	417
5	Corticostriatal plasticity is necessary for learning intentional neuroprosthetic skills. Nature, 2012, 483, 331-335.	27.8	323
6	A Minimally Invasive 64-Channel Wireless Î¼ECoG Implant. IEEE Journal of Solid-State Circuits, 2015, 50, 344-359.	5.4	295
7	A wireless millimetre-scale implantable neural stimulator with ultrasonically powered bidirectional communication. Nature Biomedical Engineering, 2020, 4, 207-222.	22.5	278
8	Four ethical priorities for neurotechnologies and AI. Nature, 2017, 551, 159-163.	27.8	267
9	Cortical Ensemble Adaptation to Represent Velocity of an Artificial Actuator Controlled by a Brain-Machine Interface. Journal of Neuroscience, 2005, 25, 4681-4693.	3.6	266
10	In Vitro and In Vivo Evaluation of PEDOT Microelectrodes for Neural Stimulation and Recording. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2011, 19, 307-316.	4.9	258
11	Oscillatory phase coupling coordinates anatomically dispersed functional cell assemblies. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 17356-17361.	7.1	251
12	Microstimulation Activates a Handful of Muscle Synergies. Neuron, 2012, 76, 1071-1077.	8.1	238
13	Reversible large-scale modification of cortical networks during neuroprosthetic control. Nature Neuroscience, 2011, 14, 662-667.	14.8	237
14	Closed-Loop Decoder Adaptation Shapes Neural Plasticity for Skillful Neuroprosthetic Control. Neuron, 2014, 82, 1380-1393.	8.1	216
15	Physical principles for scalable neural recording. Frontiers in Computational Neuroscience, 2013, 7, 137.	2.1	215
16	A wireless and artefact-free 128-channel neuromodulation device for closed-loop stimulation and recording in non-human primates. Nature Biomedical Engineering, 2019, 3, 15-26.	22.5	164
17	A Fully-Integrated, Miniaturized (0.125 mmÂ²) 10.5 ÂµW Wireless Neural Sensor. IEEE Journal of Solid-State Circuits, 2013, 48, 960-970.	5.4	154
18	Representation of Muscle Synergies in the Primate Brain. Journal of Neuroscience, 2015, 35, 12615-12624.	3.6	151

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19	Combining Decoder Design and Neural Adaptation in Brain-Machine Interfaces. Neuron, 2014, 84, 665-680.	8.1	144
20	Closed-Loop Decoder Adaptation on Intermediate Time-Scales Facilitates Rapid BMI Performance Improvements Independent of Decoder Initialization Conditions. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2012, 20, 468-477.	4.9	141
21	Model validation of untethered, ultrasonic neural dust motes for cortical recording. Journal of Neuroscience Methods, 2015, 244, 114-122.	2.5	140
22	Stable Ensemble Performance with Single-Neuron Variability during Reaching Movements in Primates. Journal of Neuroscience, 2005, 25, 10712-10716.	3.6	139
23	Cortical Representation of Ipsilateral Arm Movements in Monkey and Man. Journal of Neuroscience, 2009, 29, 12948-12956.	3.6	134
24	Volitional modulation of optically recorded calcium signals during neuroprosthetic learning. Nature Neuroscience, 2014, 17, 807-809.	14.8	133
25	Miniature implantable and wearable on-body antennas: towards the new era of wireless body-centric systems [antenna applications corner]. IEEE Antennas and Propagation Magazine, 2014, 56, 271-291.	1.4	122
26	Temporally Precise Cell-Specific Coherence Develops in Corticostriatal Networks during Learning. Neuron, 2013, 79, 865-872.	8.1	116
27	Beta band oscillations in motor cortex reflect neural population signals that delay movement onset. ELife, 2017, 6, .	6.0	108
28	Advances in Neuroprosthetic Learning and Control. PLoS Biology, 2013, 11, e1001561.	5.6	104
29	Continuous Shared Control for Stabilizing Reaching and Grasping With Brain-Machine Interfaces. IEEE Transactions on Biomedical Engineering, 2006, 53, 1164-1173.	4.2	101
30	Neural oscillations: beta band activity across motor networks. Current Opinion in Neurobiology, 2015, 32, 60-67.	4.2	98
31	Orbitofrontal Ensemble Activity Monitors Licking and Distinguishes Among Natural Rewards. Journal of Neurophysiology, 2006, 95, 119-133.	1.8	97
32	Ascertaining the Importance of Neurons to Develop Better Brain-Machine Interfaces. IEEE Transactions on Biomedical Engineering, 2004, 51, 943-953.	4.2	95
33	Robust Brain-Machine Interface Design Using Optimal Feedback Control Modeling and Adaptive Point Process Filtering. PLoS Computational Biology, 2016, 12, e1004730.	3.2	94
34	Invasive or Noninvasive: Understanding Brain-Machine Interface Technology [Conversations in BME. IEEE Engineering in Medicine and Biology Magazine, 2010, 29, 16-22.	0.8	91
35	Rapid control and feedback rates enhance neuroprosthetic control. Nature Communications, 2017, 8, 13825.	12.8	88
36	Emergence of Coordinated Neural Dynamics Underlies Neuroprosthetic Learning and Skillful Control. Neuron, 2017, 93, 955-970.e5.	8.1	86

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37	A Sub-mm³ Ultrasonic Free-Floating Implant for Multi-Mote Neural Recording. IEEE Journal of Solid-State Circuits, 2019, 54, 3017-3030.	5.4	83
38	Recent advances in neural dust: towards a neural interface platform. Current Opinion in Neurobiology, 2018, 50, 64-71.	4.2	81
39	Design and Analysis of Closed-Loop Decoder Adaptation Algorithms for Brain-Machine Interfaces. Neural Computation, 2013, 25, 1693-1731.	2.2	80
40	A 4.78 mm 2 Fully-Integrated Neuromodulation SoC Combining 64 Acquisition Channels With Digital Compression and Simultaneous Dual Stimulation. IEEE Journal of Solid-State Circuits, 2015, 50, 1038-1047.	5.4	75
41	Subject-specific modulation of local field potential spectral power during brainâ€"machine interface control in primates. Journal of Neural Engineering, 2014, 11, 026002.	3.5	62
42	Active Sensing of Target Location Encoded by Cortical Microstimulation. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2011, 19, 317-324.	4.9	56
43	Muscle synergies evoked by microstimulation are preferentially encoded during behavior. Frontiers in Computational Neuroscience, 2014, 8, 20.	2.1	56
44	Cortical Modulations Increase in Early Sessions with Brain-Machine Interface. PLoS ONE, 2007, 2, e619.	2.5	54
45	Task-Dependent Changes in Cross-Level Coupling between Single Neurons and Oscillatory Activity in Multiscale Networks. PLoS Computational Biology, 2012, 8, e1002809.	3.2	52
46	StimDust: A 6.5mm³, wireless ultrasonic peripheral nerve stimulator with 82% peak chip efficiency. , 2018, , .		49
47	Backscattering Neural Tags for Wireless Brain-Machine Interface Systems. IEEE Transactions on Antennas and Propagation, 2015, 63, 719-726.	5.1	48
48	Learning in Closed-Loop Brainâ€"Machine Interfaces: Modeling and Experimental Validation. IEEE Transactions on Systems, Man, and Cybernetics, 2010, 40, 1387-1397.	5.0	46
49	Neural Correlates of Skill Acquisition with a Cortical Brainâ€"Machine Interface. Journal of Motor Behavior, 2010, 42, 355-360.	0.9	45
50	Neural reinforcement: re-entering and refining neural dynamics leading to desirable outcomes. Current Opinion in Neurobiology, 2020, 60, 145-154.	4.2	45
51	Reliable Next-Generation Cortical Interfaces for Chronic Brainâ€"Machine Interfaces and Neuroscience. Proceedings of the IEEE, 2017, 105, 73-82.	21.3	44
52	Evidence for a neural law of effect. Science, 2018, 359, 1024-1029.	12.6	44
53	Volitional Modulation of Primary Visual Cortex Activity Requires the Basal Ganglia. Neuron, 2018, 97, 1356-1368.e4.	8.1	44
54	Investigating Neural Correlates of Behavior in Freely Behaving Rodents Using Inertial Sensors. Journal of Neurophysiology, 2010, 104, 569-575.	1.8	42

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55	Creating new functional circuits for action via brain-machine interfaces. Frontiers in Computational Neuroscience, 2013, 7, 157.	2.1	39
56	An implantable 700Î¼W 64-channel neuromodulation IC for simultaneous recording and stimulation with rapid artifact recovery. , 2017, , .		39
57	The Muscle Activation Method: An Approach to Impedance Control of Brain-Machine Interfaces Through a Musculoskeletal Model of the Arm. IEEE Transactions on Biomedical Engineering, 2007, 54, 1520-1529.	4.2	36
58	Assessing functional connectivity of neural ensembles using directed information. Journal of Neural Engineering, 2012, 9, 026004.	3.5	35
59	Continuous Closed-Loop Decoder Adaptation with a Recursive Maximum Likelihood Algorithm Allows for Rapid Performance Acquisition in Brain-Machine Interfaces. Neural Computation, 2014, 26, 1811-1839.	2.2	35
60	Head-mounted microendoscopic calcium imaging in dorsal premotor cortex of behaving rhesus macaque. Cell Reports, 2021, 35, 109239.	6.4	35
61	Ensemble recordings of human subcortical neurons as a source of motor control signals for a brain-machine interface. Neurosurgery, 2004, 55, 27-35; discussion 35-8.	1.1	35
62	Neurofeedback Control in Parkinsonian Patients Using Electrocorticography Signals Accessed Wirelessly With a Chronic, Fully Implanted Device. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2017, 25, 1715-1724.	4.9	34
63	Designing Dynamical Properties of Brainâ€"Machine Interfaces to Optimize Task-Specific Performance. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2014, 22, 911-920.	4.9	28
64	Skilled independent control of individual motor units via a non-invasive neuromuscularâ€"machine interface. Journal of Neural Engineering, 2021, 18, 066019.	3.5	28
65	Transmission Latencies in a Telemetry-Linked Brain-Machine Interface. IEEE Transactions on Biomedical Engineering, 2004, 51, 919-924.	4.2	24
66	Adaptive Kalman filtering for closed-loop Brain-Machine Interface systems. , 2011, , .		24
67	Detecting event-related changes of multivariate phase coupling in dynamic brain networks. Journal of Neurophysiology, 2012, 107, 2020-2031.	1.8	23
68	17.5 A 0.8mm³ Ultrasonic Implantable Wireless Neural Recording System With Linear AM Backscattering. , 2019, , .		22
69	Redundant information encoding in primary motor cortex during natural and prosthetic motor control. Journal of Computational Neuroscience, 2012, 32, 555-561.	1.0	21
70	Caudate Microstimulation Increases Value of Specific Choices. Current Biology, 2017, 27, 3375-3383.e3.	3.9	21
71	Left hemisphere dominance for bilateral kinematic encoding in the human brain. ELife, 2022, 11, .	6.0	20
72	Measurement of Wireless Link for Brainâ€"Machine Interface Systems Using Human-Head Equivalent Liquid. IEEE Antennas and Wireless Propagation Letters, 2013, 12, 1307-1310.	4.0	18

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73	Behavioral modulation of stimulus-evoked oscillations in barrel cortex of alert rats. Frontiers in Integrative Neuroscience, 2009, 3, 10.	2.1	17
74	Enabling closed-loop neurostimulation research with downloadable firmware upgrades. , 2015, , .		16
75	PEDOT coated microelectrode arrays for chronic neural recording and stimulation. , 2009, , .		14
76	Dynamically Repairing and Replacing Neural Networks: Using Hybrid Computational and Biological Tools. IEEE Pulse, 2012, 3, 57-59.	0.3	13
77	Ultrasonic beamforming system for interrogating multiple implantable sensors. , 2015, 2015, 2673-6.		13
78	Control of Redundant Kinematic Degrees of Freedom in a Closed-Loop Brain-Machine Interface. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2017, 25, 750-760.	4.9	13
79	A statistical description of neural ensemble dynamics. Frontiers in Computational Neuroscience, 2011, 5, 52.	2.1	11
80	Function Identification in Neuron Populations via Information Bottleneck. Entropy, 2013, 15, 1587-1608.	2.2	10
81	Dynamic changes of rodent somatosensory barrel cortex are correlated with learning a novel conditioned stimulus. Journal of Neurophysiology, 2013, 109, 2585-2595.	1.8	8
82	System Architecture for Stiffness Control in Brainâ€“Machine Interfaces. IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans, 2010, 40, 732-742.	2.9	7
83	Optimal feedback-controlled point process decoder for adaptation and assisted training in brain-machine interfaces. , 2013, , .		7
84	Accelerating Submovement Decomposition With Search-Space Reduction Heuristics. IEEE Transactions on Biomedical Engineering, 2015, 62, 2508-2515.	4.2	6
85	Narrowband target tracking using a biomimetic sonarhead. Robotics and Autonomous Systems, 2004, 46, 247-259.	5.1	5
86	Editorial: Developing the Next Generation of Hybrid Neuroprosthetic Systems. IEEE Transactions on Biomedical Engineering, 2009, 56, 3-5.	4.2	5
87	Electromagnetic modelling and measurement of antennas for wireless brain-machine interface systems. , 2013, , .		5
88	Design of a Passive Upper Limb Exoskeleton for Macaque Monkeys. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2016, 138, .	1.6	4
89	Diverse operant control of different motor cortex populations during learning. Current Biology, 2022, 32, 1616-1622.e5.	3.9	4
90	Brainâ€“machine interfaces and transcranial stimulation. Handbook of Clinical Neurology / Edited By P J Vinken and G W Bruyn, 2012, 109, 435-444.	1.8	3

#	ARTICLE	IF	CITATIONS
91	Neural Correlates of Control of a Kinematically Redundant Brain-Machine Interface*. , 2019, , .		3
92	Large-Scale Neural Consolidation in BMI Learning*. , 2019, , .		3
93	Hybrid dedicated and distributed coding in PMd/M1 provides separation and interaction of bilateral arm signals. PLoS Computational Biology, 2021, 17, e1009615.	3.2	3
94	Estimating Doppler Shift Using Bat-Inspired Cochlear Filter Bank Models: A Comparison of Methods for Echoes from Single and Multiple Reflectors. Adaptive Behavior, 2001, 9, 241-261.	1.9	2
95	Stiffness control of 2-DOF exoskeleton for brain-machine interfaces. , 2008, , .		2
96	Low-rank representation of neural activity and detection of submovements. , 2013, , .		2
97	A design of neural decoder by reducing discrepancy between Manual Control (MC) and Brain Control (BC). , 2014, , .		2
98	Comparison of neural activity during closed-loop control of spike- or LFP-based brain-machine interfaces. , 2013, , .		1
99	Disentangling Multidimensional Spatio-Temporal Data into Their Common and Aberrant Responses. PLoS ONE, 2015, 10, e0121607.	2.5	1
100	Changes in reaching reaction times due to volitional modulation of beta oscillations. , 2015, , .		1
101	Local network coordination supports neuroprosthetic control. , 2019, , .		1
102	A model of motor learning in closed-loop brain-machine interfaces: Predicting neural tuning changes. , 2009, , .		0
103	Redundant information encoding in primary motor cortex during motor tasks. , 2011, , .		0
104	Volitional phase control of neural oscillations using a brain-machine interface. , 2013, , .		0
105	Design of a neural decoder by sensory prediction and error correction. , 2014, , .		0
106	Modeling distinct sources of neural variability driving neuroprosthetic control. , 2016, 2016, 3068-3071.		0
107	Blind parallel interrogation of ultrasonic neural dust motes based on canonical polyadic decomposition: A simulation study. , 2017, , .		0
108	Functional Neuroscience: Cortical Control of Limb Prostheses. , 2018, , 1-13.		0

#	Article	IF	Citations
109	Functional Neuroscience: Cortical Control of Limb Prostheses. , 2022, , 1474-1487.		0