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	Diverse operant control of different motor cortex populations during learning. Current Biology, 2022, 32, 1616-1622.e5.	3.9	4
2	Left hemisphere dominance for bilateral kinematic encoding in the human brain. ELife, 2022, 11, .	6.0	20
3	Functional Neuroscience: Cortical Control of Limb Prostheses. , 2022, , 1474-1487.		0
4	Head-mounted microendoscopic calcium imaging in dorsal premotor cortex of behaving rhesus macaque. Cell Reports, 2021, 35, 109239.	6.4	35
5	Skilled independent control of individual motor units via a non-invasive neuromuscularâ€“machine interface. Journal of Neural Engineering, 2021, 18, 066019.	3.5	28
6	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
7	Neural reinforcement: re-entering and refining neural dynamics leading to desirable outcomes. Current Opinion in Neurobiology, 2020, 60, 145-154.	4.2	45
8	A wireless millimetre-scale implantable neural stimulator with ultrasonically powered bidirectional communication. Nature Biomedical Engineering, 2020, 4, 207-222.	22.5	278
9	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
10	Neural Correlates of Control of a Kinematically Redundant Brain-Machine Interface*. , 2019, , .		3
11	Large-Scale Neural Consolidation in BMI Learning*. , 2019, , .		3
12	Local network coordination supports neuroprosthetic control. , 2019, , .		1
13	17.5 A 0.8mm³ Ultrasonic Implantable Wireless Neural Recording System With Linear AM Backscattering. , 2019, , .		22
14	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
15	Evidence for a neural law of effect. Science, 2018, 359, 1024-1029.	12.6	44
16	Volitional Modulation of Primary Visual Cortex Activity Requires the Basal Ganglia. Neuron, 2018, 97, 1356-1368.e4.	8.1	44
17	Recent advances in neural dust: towards a neural interface platform. Current Opinion in Neurobiology, 2018, 50, 64-71.	4.2	81
18	StimDust: A 6.5mm³, wireless ultrasonic peripheral nerve stimulator with 82% peak chip efficiency. , 2018, , .		49

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19	Functional Neuroscience: Cortical Control of Limb Prostheses. , 2018, , 1-13.		0
20	Rapid control and feedback rates enhance neuroprosthetic control. Nature Communications, 2017, 8, 13825.	12.8	88
21	Emergence of Coordinated Neural Dynamics Underlies Neuroprosthetic Learning and Skillful Control. Neuron, 2017, 93, 955-970.e5.	8.1	86
22	Reliable Next-Generation Cortical Interfaces for Chronic Brainâ€"Machine Interfaces and Neuroscience. Proceedings of the IEEE, 2017, 105, 73-82.	21.3	44
23	Caudate Microstimulation Increases Value of Specific Choices. Current Biology, 2017, 27, 3375-3383.e3.	3.9	21
24	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
25	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
26	An implantable 700Î¼W 64-channel neuromodulation IC for simultaneous recording and stimulation with rapid artifact recovery. , 2017, , .		39
27	Blind parallel interrogation of ultrasonic neural dust motes based on canonical polyadic decomposition: A simulation study. , 2017, , .		0
28	Four ethical priorities for neurotechnologies and AI. Nature, 2017, 551, 159-163.	27.8	267
29	Beta band oscillations in motor cortex reflect neural population signals that delay movement onset. ELife, 2017, 6, .	6.0	108
30	Modeling distinct sources of neural variability driving neuroprosthetic control. , 2016, 2016, 3068-3071.		0
31	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
32	Wireless Recording in the Peripheral Nervous System with Ultrasonic Neural Dust. Neuron, 2016, 91, 529-539.	8.1	417
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	Ultrasonic beamforming system for interrogating multiple implantable sensors. , 2015, 2015, 2673-6.		13
35	Disentangling Multidimensional Spatio-Temporal Data into Their Common and Aberrant Responses. PLoS ONE, 2015, 10, e0121607.	2.5	1
36	Enabling closed-loop neurostimulation research with downloadable firmware upgrades. , 2015, , .		16

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37	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
38	Backscattering Neural Tags for Wireless Brain-Machine Interface Systems. IEEE Transactions on Antennas and Propagation, 2015, 63, 719-726.	5.1	48
39	Changes in reaching reaction times due to volitional modulation of beta oscillations. , 2015, , .		1
40	Representation of Muscle Synergies in the Primate Brain. Journal of Neuroscience, 2015, 35, 12615-12624.	3.6	151
41	Accelerating Submovement Decomposition With Search-Space Reduction Heuristics. IEEE Transactions on Biomedical Engineering, 2015, 62, 2508-2515.	4.2	6
42	Neural oscillations: beta band activity across motor networks. Current Opinion in Neurobiology, 2015, 32, 60-67.	4.2	98
43	A Minimally Invasive 64-Channel Wireless Î¼ECoG Implant. IEEE Journal of Solid-State Circuits, 2015, 50, 344-359.	5.4	295
44	Model validation of untethered, ultrasonic neural dust motes for cortical recording. Journal of Neuroscience Methods, 2015, 244, 114-122.	2.5	140
45	Design of a neural decoder by sensory prediction and error correction. , 2014, , .		0
46	Combining Decoder Design and Neural Adaptation in Brain-Machine Interfaces. Neuron, 2014, 84, 665-680.	8.1	144
47	A design of neural decoder by reducing discrepancy between Manual Control (MC) and Brain Control (BC). , 2014, , .		2
48	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
49	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
50	Volitional modulation of optically recorded calcium signals during neuroprosthetic learning. Nature Neuroscience, 2014, 17, 807-809.	14.8	133
51	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
52	Closed-Loop Decoder Adaptation Shapes Neural Plasticity for Skillful Neuroprosthetic Control. Neuron, 2014, 82, 1380-1393.	8.1	216
53	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
54	Muscle synergies evoked by microstimulation are preferentially encoded during behavior. Frontiers in Computational Neuroscience, 2014, 8, 20.	2.1	56

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55	Temporally Precise Cell-Specific Coherence Develops in Corticostriatal Networks during Learning. Neuron, 2013, 79, 865-872.	8.1	116
56	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
57	Comparison of neural activity during closed-loop control of spike- or LFP-based brain-machine interfaces. , 2013, , .		1
58	Optimal feedback-controlled point process decoder for adaptation and assisted training in brain-machine interfaces. , 2013, , .		7
59	Electromagnetic modelling and measurement of antennas for wireless brain-machine interface systems. , 2013, , .		5
60	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
61	Design and Analysis of Closed-Loop Decoder Adaptation Algorithms for Brain-Machine Interfaces. Neural Computation, 2013, 25, 1693-1731.	2.2	80
62	Advances in Neuroprosthetic Learning and Control. PLoS Biology, 2013, 11, e1001561.	5.6	104
63	Function Identification in Neuron Populations via Information Bottleneck. Entropy, 2013, 15, 1587-1608.	2.2	10
64	Low-rank representation of neural activity and detection of submovements. , 2013, , .		2
65	Volitional phase control of neural oscillations using a brain-machine interface. , 2013, , .		0
66	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
67	Physical principles for scalable neural recording. Frontiers in Computational Neuroscience, 2013, 7, 137.	2.1	215
68	Creating new functional circuits for action via brain-machine interfaces. Frontiers in Computational Neuroscience, 2013, 7, 157.	2.1	39
69	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
70	Detecting event-related changes of multivariate phase coupling in dynamic brain networks. Journal of Neurophysiology, 2012, 107, 2020-2031.	1.8	23
71	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
72	Dynamically Repairing and Replacing Neural Networks: Using Hybrid Computational and Biological Tools. IEEE Pulse, 2012, 3, 57-59.	0.3	13

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73	Corticostriatal plasticity is necessary for learning intentional neuroprosthetic skills. Nature, 2012, 483, 331-335.	27.8	323
74	Assessing functional connectivity of neural ensembles using directed information. Journal of Neural Engineering, 2012, 9, 026004.	3.5	35
75	Microstimulation Activates a Handful of Muscle Synergies. Neuron, 2012, 76, 1071-1077.	8.1	238
76	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
77	Redundant information encoding in primary motor cortex during natural and prosthetic motor control. Journal of Computational Neuroscience, 2012, 32, 555-561.	1.0	21
78	Redundant information encoding in primary motor cortex during motor tasks. , 2011, , .		0
79	Adaptive Kalman filtering for closed-loop Brain-Machine Interface systems. , 2011, , .		24
80	Reversible large-scale modification of cortical networks during neuroprosthetic control. Nature Neuroscience, 2011, 14, 662-667.	14.8	237
81	A statistical description of neural ensemble dynamics. Frontiers in Computational Neuroscience, 2011, 5, 52.	2.1	11
82	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
83	Active Sensing of Target Location Encoded by Cortical Microstimulation. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2011, 19, 317-324.	4.9	56
84	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
85	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
86	Investigating Neural Correlates of Behavior in Freely Behaving Rodents Using Inertial Sensors. Journal of Neurophysiology, 2010, 104, 569-575.	1.8	42
87	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
88	Neural Correlates of Skill Acquisition with a Cortical Brainâ€"Machine Interface. Journal of Motor Behavior, 2010, 42, 355-360.	0.9	45
89	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
90	Behavioral modulation of stimulus-evoked oscillations in barrel cortex of alert rats. Frontiers in Integrative Neuroscience, 2009, 3, 10.	2.1	17

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91	A model of motor learning in closed-loop brain-machine interfaces: Predicting neural tuning changes. , 2009, , .		0
92	Cortical Representation of Ipsilateral Arm Movements in Monkey and Man. Journal of Neuroscience, 2009, 29, 12948-12956.	3.6	134
93	Emergence of a Stable Cortical Map for Neuroprosthetic Control. PLoS Biology, 2009, 7, e1000153.	5.6	469
94	Editorial: Developing the Next Generation of Hybrid Neuroprosthetic Systems. IEEE Transactions on Biomedical Engineering, 2009, 56, 3-5.	4.2	5
95	PEDOT coated microelectrode arrays for chronic neural recording and stimulation. , 2009, , .		14
96	Stiffness control of 2-DOF exoskeleton for brain-machine interfaces. , 2008, , .		2
97	Cortical Modulations Increase in Early Sessions with Brain-Machine Interface. PLoS ONE, 2007, 2, e619.	2.5	54
98	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
99	Orbitofrontal Ensemble Activity Monitors Licking and Distinguishes Among Natural Rewards. Journal of Neurophysiology, 2006, 95, 119-133.	1.8	97
100	Continuous Shared Control for Stabilizing Reaching and Grasping With Brain-Machine Interfaces. IEEE Transactions on Biomedical Engineering, 2006, 53, 1164-1173.	4.2	101
101	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
102	Stable Ensemble Performance with Single-Neuron Variability during Reaching Movements in Primates. Journal of Neuroscience, 2005, 25, 10712-10716.	3.6	139
103	Ascertaining the Importance of Neurons to Develop Better Brain-Machine Interfaces. IEEE Transactions on Biomedical Engineering, 2004, 51, 943-953.	4.2	95
104	Transmission Latencies in a Telemetry-Linked Brain-Machine Interface. IEEE Transactions on Biomedical Engineering, 2004, 51, 919-924.	4.2	24
105	Narrowband target tracking using a biomimetic sonarhead. Robotics and Autonomous Systems, 2004, 46, 247-259.	5.1	5
106	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
107	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
108	Learning to Control a Brainâ€“Machine Interface for Reaching and Grasping by Primates. PLoS Biology, 2003, 1, e42.	5.6	1,427

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109	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