

Leigh R Hochberg

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

126
papers

9,980
citations

39
h-index

99
g-index

142
ext. papers

12,483
ext. citations

10.1
avg, IF

6.01
L-index

#	Paper	IF	Citations
126	Large-scale neural recordings with single neuron resolution using Neuropixels probes in human cortex.. <i>Nature Neuroscience</i> , 2022 ,	25.5	9
125	Development of a Manually Operated Communication System (MOCS) for patients in intensive care units.. <i>AAC: Augmentative and Alternative Communication</i> , 2022 , 1-13	3.5	
124	Learned motor patterns are replayed in human motor cortex during sleep.. <i>Journal of Neuroscience</i> , 2022 ,	6.6	1
123	Brain-Computer Interfaces in Neurorecovery and Neurorehabilitation. <i>Seminars in Neurology</i> , 2021 , 41, 206-216	3.2	4
122	Cognitive Demands Influence Upper Extremity Motor Performance During Recovery From Acute Stroke. <i>Neurology</i> , 2021 , 96, e2576-e2586	6.5	5
121	Arm Motor Recovery After Ischemic Stroke: A Focus on Clinically Distinct Trajectory Groups. <i>Journal of Neurologic Physical Therapy</i> , 2021 , 45, 70-78	4.1	2
120	Vagus nerve stimulation paired with rehabilitation for upper limb motor function after ischaemic stroke (VNS-REHAB): a randomised, blinded, pivotal, device trial. <i>Lancet, The</i> , 2021 , 397, 1545-1553	4.0	43
119	Responsive neurostimulation for focal motor status epilepticus. <i>Annals of Clinical and Translational Neurology</i> , 2021 , 8, 1353-1361	5.3	3
118	High-performance brain-to-text communication via handwriting. <i>Nature</i> , 2021 , 593, 249-254	50.4	83
117	Motor neuroprosthesis implanted with neurointerventional surgery improves capacity for activities of daily living tasks in severe paralysis: first in-human experience. <i>Journal of NeuroInterventional Surgery</i> , 2021 , 13, 102-108	7.8	28
116	Auditory cues reveal intended movement information in middle frontal gyrus neuronal ensemble activity of a person with tetraplegia. <i>Scientific Reports</i> , 2021 , 11, 98	4.9	2
115	The Neural Representation of Force across Grasp Types in Motor Cortex of Humans with Tetraplegia. <i>ENeuro</i> , 2021 , 8,	3.9	4
114	Home Use of a Percutaneous Wireless Intracortical Brain-Computer Interface by Individuals With Tetraplegia. <i>IEEE Transactions on Biomedical Engineering</i> , 2021 , 68, 2313-2325	5	22
113	The neuroethics of disorders of consciousness: a brief history of evolving ideas. <i>Brain</i> , 2021 ,	11.2	5
112	Replay of Learned Neural Firing Sequences during Rest in Human Motor Cortex. <i>Cell Reports</i> , 2020 , 31, 107581	10.6	14
111	The Discriminative Kalman Filter for Bayesian Filtering with Nonlinear and Nongaussian Observation Models. <i>Neural Computation</i> , 2020 , 32, 969-1017	2.9	4
110	Hand Knob Area of Premotor Cortex Represents the Whole Body in a Compositional Way. <i>Cell</i> , 2020 , 181, 396-409.e26	56.2	39

109	Applications of brain-computer interfaces to the control of robotic and prosthetic arms. <i>Handbook of Clinical Neurology / Edited By P J Vinken and G W Bruyn, 2020, 168, 87-99</i>	3	12
108	Intact Brain Network Function in an Unresponsive Patient with COVID-19. <i>Annals of Neurology, 2020, 88, 851-854</i>	9.4	26
107	Speech-related dorsal motor cortex activity does not interfere with iBCI cursor control. <i>Journal of Neural Engineering, 2020, 17, 016049</i>	5	13
106	Restoring Functional Reach-to-Grasp in a Person with Chronic Tetraplegia Using Implanted Functional Electrical Stimulation and Intracortical Brain-Computer Interfaces. <i>Springer Briefs in Electrical and Computer Engineering, 2020, 35-45</i>	0.4	
105	Auditory-Reliant Intracortical Brain Computer Interfaces for Effector Control by a Person with Tetraplegia. <i>Communications in Computer and Information Science, 2020, 102-109</i>	0.3	
104	Neural Representation of Observed, Imagined, and Attempted Grasping Force in Motor Cortex of Individuals with Chronic Tetraplegia. <i>Scientific Reports, 2020, 10, 1429</i>	4.9	11
103	Decoding spoken English from intracortical electrode arrays in dorsal precentral gyrus. <i>Journal of Neural Engineering, 2020, 17, 066007</i>	5	12
102	Power-saving design opportunities for wireless intracortical brain-computer interfaces. <i>Nature Biomedical Engineering, 2020, 4, 984-996</i>	19	23
101	Personalized Connectome Mapping to Guide Targeted Therapy and Promote Recovery of Consciousness in the Intensive Care Unit. <i>Neurocritical Care, 2020, 33, 364-375</i>	3.3	14
100	Early Detection of Human Epileptic Seizures Based on Intracortical Microelectrode Array Signals. <i>IEEE Transactions on Biomedical Engineering, 2020, 67, 817-831</i>	5	7
99	Corticospinal Tract Injury Estimated From Acute Stroke Imaging Predicts Upper Extremity Motor Recovery After Stroke. <i>Stroke, 2019, 50, 3569-3577</i>	6.7	37
98	BCI decoder performance comparison of an LSTM recurrent neural network and a Kalman filter in retrospective simulation 2019,		11
97	Principled BCI Decoder Design and Parameter Selection Using a Feedback Control Model. <i>Scientific Reports, 2019, 9, 8881</i>	4.9	13
96	Volitional control of single-electrode high gamma local field potentials by people with paralysis. <i>Journal of Neurophysiology, 2019, 121, 1428-1450</i>	3.2	7
95	Intracortical neural activity distal to seizure-onset-areas predicts human focal seizures. <i>PLoS ONE, 2019, 14, e0211847</i>	3.7	2
94	Neural ensemble dynamics in dorsal motor cortex during speech in people with paralysis. <i>ELife, 2019, 8,</i>	8.9	28
93	Closed-loop cortical control of virtual reach and posture using Cartesian and joint velocity commands. <i>Journal of Neural Engineering, 2019, 16, 026011</i>	5	7
92	A Comparison of Intention Estimation Methods for Decoder Calibration in Intracortical Brain-Computer Interfaces. <i>IEEE Transactions on Biomedical Engineering, 2018, 65, 2066-2078</i>	5	14

91	Rapid calibration of an intracortical brain-computer interface for people with tetraplegia. <i>Journal of Neural Engineering</i> , 2018 , 15, 026007	5	56
90	Feasibility of Automatic Error Detect-and-Undo System in Human Intracortical Brain-Computer Interfaces. <i>IEEE Transactions on Biomedical Engineering</i> , 2018 , 65, 1771-1784	5	10
89	Feasibility of an EEG-based brain-computer interface in the intensive care unit. <i>Clinical Neurophysiology</i> , 2018 , 129, 1519-1525	4.3	21
88	Stable long-term BCI-enabled communication in ALS and locked-in syndrome using LFP signals. <i>Journal of Neurophysiology</i> , 2018 , 120, 343-360	3.2	51
87	Signal processing methods for reducing artifacts in microelectrode brain recordings caused by functional electrical stimulation. <i>Journal of Neural Engineering</i> , 2018 , 15, 026014	5	16
86	Brain-machine interface cursor position only weakly affects monkey and human motor cortical activity in the absence of arm movements. <i>Scientific Reports</i> , 2018 , 8, 16357	4.9	4
85	Cortical control of a tablet computer by people with paralysis. <i>PLoS ONE</i> , 2018 , 13, e0204566	3.7	60
84	Watch, Imagine, Attempt: Motor Cortex Single-Unit Activity Reveals Context-Dependent Movement Encoding in Humans With Tetraplegia. <i>Frontiers in Human Neuroscience</i> , 2018 , 12, 450	3.3	17
83	Decoding Speech from Intracortical Multielectrode Arrays in Dorsal "Arm/Hand Areas" of Human Motor Cortex. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , 2018 , 2018, 93-97	0.9	9
82	Inferring single-trial neural population dynamics using sequential auto-encoders. <i>Nature Methods</i> , 2018 , 15, 805-815	21.6	168
81	Robust Closed-Loop Control of a Cursor in a Person with Tetraplegia using Gaussian Process Regression. <i>Neural Computation</i> , 2018 , 30, 2986-3008	2.9	12
80	Review: Human Intracortical Recording and Neural Decoding for Brain-Computer Interfaces. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2017 , 25, 1687-1696	4.8	51
79	Signal-independent noise in intracortical brain-computer interfaces causes movement time properties inconsistent with Fitts's law. <i>Journal of Neural Engineering</i> , 2017 , 14, 026010	5	7
78	Restoration of reaching and grasping movements through brain-controlled muscle stimulation in a person with tetraplegia: a proof-of-concept demonstration. <i>Lancet, The</i> , 2017 , 389, 1821-1830	4.0	4.00
77	Feedback control policies employed by people using intracortical brain-computer interfaces. <i>Journal of Neural Engineering</i> , 2017 , 14, 016001	5	27
76	Trends in BCI Research I: Brain-Computer Interfaces for Assessment of Patients with Locked-in Syndrome or Disorders of Consciousness. <i>Springer Briefs in Electrical and Computer Engineering</i> , 2017 , 105-125	0.4	6
75	Evolving Applications, Technological Challenges and Future Opportunities in Neuromodulation: Proceedings of the Fifth Annual Deep Brain Stimulation Think Tank. <i>Frontiers in Neuroscience</i> , 2017 , 11, 734	5.1	42
74	Early detection of consciousness in patients with acute severe traumatic brain injury. <i>Brain</i> , 2017 , 140, 2399-2414	11.2	135

73	High performance communication by people with paralysis using an intracortical brain-computer interface. <i>ELife</i> , 2017 , 6,	8.9	223
72	Predicting seizures from local field potentials recorded via intracortical microelectrode arrays. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , 2016 , 2016, 6353-6356	0.9	4
71	Author response: High performance communication by people with paralysis using an intracortical brain-computer interface 2016 ,		4
70	Retrospectively supervised click decoder calibration for self-calibrating point-and-click brain-computer interfaces. <i>Journal of Physiology (Paris)</i> , 2016 , 110, 382-391		10
69	Brain Computer Interfaces 2016 , 231-263		2
68	The emergence of single neurons in clinical neurology. <i>Neuron</i> , 2015 , 86, 79-91	13.9	50
67	Clinical translation of a high-performance neural prosthesis. <i>Nature Medicine</i> , 2015 , 21, 1142-5	50.5	202
66	Microscale spatiotemporal dynamics during neocortical propagation of human focal seizures. <i>NeuroImage</i> , 2015 , 122, 114-30	7.9	30
65	Virtual typing by people with tetraplegia using a self-calibrating intracortical brain-computer interface. <i>Science Translational Medicine</i> , 2015 , 7, 313ra179	17.5	166
64	Neural Point-and-Click Communication by a Person With Incomplete Locked-In Syndrome. <i>Neurorehabilitation and Neural Repair</i> , 2015 , 29, 462-71	4.7	62
63	Modulation depth estimation and variable selection in state-space models for neural interfaces. <i>IEEE Transactions on Biomedical Engineering</i> , 2015 , 62, 570-81	5	11
62	An assistive decision-and-control architecture for force-sensitive hand/arm systems driven by human-machine interfaces. <i>International Journal of Robotics Research</i> , 2015 , 34, 763-780	5.7	35
61	Reprint of "Non-causal spike filtering improves decoding of movement intention for intracortical BCIs". <i>Journal of Neuroscience Methods</i> , 2015 , 244, 94-103	3	9
60	Neural population dynamics in human motor cortex during movements in people with ALS. <i>ELife</i> , 2015 , 4, e07436	8.9	40
59	Author response: Neural population dynamics in human motor cortex during movements in people with ALS 2015 ,		2
58	Adaptive offset correction for intracortical brain-computer interfaces. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2014 , 22, 239-48	4.8	15
57	Neuronal ensemble synchrony during human focal seizures. <i>Journal of Neuroscience</i> , 2014 , 34, 9927-44	6.6	81
56	Reliability of directional information in unsorted spikes and local field potentials recorded in human motor cortex. <i>Journal of Neural Engineering</i> , 2014 , 11, 046007	5	71

55	Inhibitory single neuron control of seizures and epileptic traveling waves in humans. <i>BMC Neuroscience</i> , 2014 , 15,	3.2	14
54	Non-causal spike filtering improves decoding of movement intention for intracortical BCIs. <i>Journal of Neuroscience Methods</i> , 2014 , 236, 58-67	3	23
53	Speech-specific tuning of neurons in human superior temporal gyrus. <i>Cerebral Cortex</i> , 2014 , 24, 2679-93	5.1	97
52	Early detection of human focal seizures based on cortical multiunit activity. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , 2014 , 2014, 5796-9	0.9	6
51	Continuous Control of the DLR Light-Weight Robot III by a Human with Tetraplegia Using the BrainGate2 Neural Interface System. <i>Springer Tracts in Advanced Robotics</i> , 2014 , 125-136	0.5	9
50	Sensors and decoding for intracortical brain computer interfaces. <i>Annual Review of Biomedical Engineering</i> , 2013 , 15, 383-405	12	82
49	Unexpected recovery of function after severe traumatic brain injury: the limits of early neuroimaging-based outcome prediction. <i>Neurocritical Care</i> , 2013 , 19, 364-75	3.3	26
48	Early Detection of Human Epileptic Seizures Based on Intracortical Local Field Potentials. <i>International IEEE/EMBS Conference on Neural Engineering: [proceedings]</i> , 2013 , 323-326	1.3	7
47	2013 ,		7
46	Somatosensory responses in a human motor cortex. <i>Journal of Neurophysiology</i> , 2013 , 109, 2192-204	3.2	18
45	Advantages of closed-loop calibration in intracortical brain-computer interfaces for people with tetraplegia. <i>Journal of Neural Engineering</i> , 2013 , 10, 046012	5	61
44	Adaptive Parametric Spectral Estimation with Kalman Smoothing for Online Early Seizure Detection. <i>International IEEE/EMBS Conference on Neural Engineering: [proceedings]</i> , 2013 , 1410-1413	1.3	3
43	Intra-day signal instabilities affect decoding performance in an intracortical neural interface system. <i>Journal of Neural Engineering</i> , 2013 , 10, 036004	5	126
42	Implanted Neural Interfaces: Ethics in Treatment and Research 2013 , 235-250		10
41	Rapid fragmentation of neuronal networks at the onset of propofol-induced unconsciousness. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, E3377-86	11.5	278
40	Prediction of imagined single-joint movements in a person with high-level tetraplegia. <i>IEEE Transactions on Biomedical Engineering</i> , 2012 , 59, 2755-65	5	32
39	Reach and grasp by people with tetraplegia using a neurally controlled robotic arm. <i>Nature</i> , 2012 , 485, 372-5	50.4	1665
38	Human seizures self-terminate across spatial scales via a critical transition. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, 21116-21	11.5	136

37	Spatiotemporal dynamics of neocortical excitation and inhibition during human sleep. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, 1731-6	11.5	115
36	Towards the optimal design of an assistive communication interface with neural input 2012 ,		1
35	BCI Users and Their Needs 2012 , 317-324		13
34	Single-neuron dynamics in human focal epilepsy. <i>Nature Neuroscience</i> , 2011 , 14, 635-41	25.5	353
33	Efficient decoding with steady-state Kalman filter in neural interface systems. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2011 , 19, 25-34	4.8	68
32	Point-and-click cursor control with an intracortical neural interface system by humans with tetraplegia. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2011 , 19, 193-203	4.8	120
31	Continuous neuronal ensemble control of simulated arm reaching by a human with tetraplegia. <i>Journal of Neural Engineering</i> , 2011 , 8, 034003	5	74
30	Neural control of cursor trajectory and click by a human with tetraplegia 1000 days after implant of an intracortical microelectrode array. <i>Journal of Neural Engineering</i> , 2011 , 8, 025027	5	338
29	Application of system identification methods for decoding imagined single-joint movements in an individual with high tetraplegia. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , 2010 , 2010, 2678-81	0.9	2
28	Heterogeneous neuronal firing patterns during interictal epileptiform discharges in the human cortex. <i>Brain</i> , 2010 , 133, 1668-81	11.2	119
27	Collective dynamics in human and monkey sensorimotor cortex: predicting single neuron spikes. <i>Nature Neuroscience</i> , 2010 , 13, 105-11	25.5	162
26	Listening to Brain Microcircuits for Interfacing With External World-Progress in Wireless Implantable Microelectronic Neuroengineering Devices: Experimental systems are described for electrical recording in the brain using multiple microelectrodes and short range implantable or wearable broadcasting units. <i>Proceedings of the IEEE</i> , 2010 , 99, 275-288	14.3	94
25	Acute Stroke 2010 , 414-417		
24	Hyperacute stent placement in acute cervical internal carotid artery occlusions: the potential role of magnetic resonance imaging. <i>Journal of NeuroInterventional Surgery</i> , 2009 , 1, 171-4	7.8	
23	Designing a Neural Interface System to Restore Mobility 2009 , 229-242		1
22	Neural control of computer cursor velocity by decoding motor cortical spiking activity in humans with tetraplegia. <i>Journal of Neural Engineering</i> , 2008 , 5, 455-76	5	286
21	Primary motor cortex tuning to intended movement kinematics in humans with tetraplegia. <i>Journal of Neuroscience</i> , 2008 , 28, 1163-78	6.6	193
20	Turning thought into action. <i>New England Journal of Medicine</i> , 2008 , 359, 1175-7	59.2	18

19	Assistive technology and robotic control using motor cortex ensemble-based neural interface systems in humans with tetraplegia. <i>Journal of Physiology</i> , 2007 , 579, 603-11	3.9	134
18	Multi-state decoding of point-and-click control signals from motor cortical activity in a human with tetraplegia 2007 ,		19
17	Intuitive prosthetic limb control. <i>Lancet, The</i> , 2007 , 369, 345-6	4.0	5
16	Sensors for brain-computer interfaces. <i>IEEE Engineering in Medicine and Biology Magazine</i> , 2006 , 25, 32-8		67
15	Initial Surgical Experience with an Intracortical Microelectrode Array for Brain-computer Interface Applications. <i>Neurosurgery</i> , 2006 , 59, 481	3.2	4
14	Neuronal ensemble control of prosthetic devices by a human with tetraplegia. <i>Nature</i> , 2006 , 442, 164-71	50.4	2466
13	Horizons in prosthesis development for the restoration of limb function. <i>Journal of the American Academy of Orthopaedic Surgeons, The</i> , 2006 , 14, S198-204	4.5	26
12	Braingate: Turning Thought into Action First Experience with a Human Neuromotor Prosthesis. <i>Neurosurgery</i> , 2005 , 57, 425-425	3.2	4
11	West Nile encephalitis in Massachusetts. <i>New England Journal of Medicine</i> , 2002 , 346, 1030-1	59.2	
10	Intracranial brain-computer interfaces for communication and control	577-585	1
9	Electrical stimulation approaches to stroke recovery	247-258	
8	The neural representation of force across grasp types in motor cortex of humans with tetraplegia		1
7	Inferring single-trial neural population dynamics using sequential auto-encoders		8
6	Home Use of a Wireless Intracortical Brain-Computer Interface by Individuals With Tetraplegia		3
5	Decoding spoken English phonemes from intracortical electrode arrays in dorsal precentral gyrus		2
4	High-performance brain-to-text communication via imagined handwriting		7
3	Neural ensemble dynamics in dorsal motor cortex during speech in people with paralysis		3
2	Hand Knob Area of Motor Cortex in People with Tetraplegia Represents the Whole Body in a Modular Way		3

- 1 Large-scale neural recordings with single-cell resolution in human cortex using high-density Neuropixels probes