Leigh R Hochberg

List of Publications by Year
in descending order

124	14,427	50244	30058
papers	citations	46 h-index	103 g-index

142	142	142	9082
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Large-scale neural recordings with single neuron resolution using Neuropixels probes in human cortex. Nature Neuroscience, 2022, 25, 252-263.	7.1	112
2	Next-generation BCIs: Brain-to-text Communication via Attempted Handwriting. , 2022, , .		1
3	Association of Modified Rankin Scale With Recovery Phenotypes in Patients With Upper Extremity Weakness After Stroke. Neurology, 2022, 98, .	1.5	13
4	Learned Motor Patterns Are Replayed in Human Motor Cortex during Sleep. Journal of Neuroscience, 2022, 42, 5007-5020.	1.7	27
5	Motor neuroprosthesis implanted with neurointerventional surgery improves capacity for activities of daily living tasks in severe paralysis: first in-human experience. Journal of NeuroInterventional Surgery, 2021, 13, 102-108.	2.0	106
6	Auditory cues reveal intended movement information in middle frontal gyrus neuronal ensemble activity of a person with tetraplegia. Scientific Reports, 2021, 11, 98.	1.6	12
7	The Neural Representation of Force across Grasp Types in Motor Cortex of Humans with Tetraplegia. ENeuro, 2021, 8, ENEURO.0231-20.2020.	0.9	9
8	Effects of Peripheral Haptic Feedback on Intracortical Brain-Computer Interface Control and Associated Sensory Responses in Motor Cortex. IEEE Transactions on Haptics, 2021, 14, 762-775.	1.8	5
9	Brainâ€“Computer Interfaces in Neurorecovery and Neurorehabilitation. Seminars in Neurology, 2021, 41, 206-216.	0.5	11
10	Cognitive Demands Influence Upper Extremity Motor Performance During Recovery From Acute Stroke. Neurology, 2021, 96, e2576-e2586.	1.5	16
11	Arm Motor Recovery After Ischemic Stroke: A Focus on Clinically Distinct Trajectory Groups. Journal of Neurologic Physical Therapy, 2021, 45, 70-78.	0.7	9
12	Vagus nerve stimulation paired with rehabilitation for upper limb motor function after ischaemic stroke (VNS-REHAB): a randomised, blinded, pivotal, device trial. Lancet, The, 2021, 397, 1545-1553.	6.3	181
13	Responsive neurostimulation for focal motor status epilepticus. Annals of Clinical and Translational Neurology, 2021, 8, 1353-1361.	1.7	8
14	High-performance brain-to-text communication via handwriting. Nature, 2021, 593, 249-254.	13.7	409
15	Freedom of Speech. New England Journal of Medicine, 2021, 385, 278-279.	13.9	1
16	Home Use of a Percutaneous Wireless Intracortical Brain-Computer Interface by Individuals With Tetraplegia. IEEE Transactions on Biomedical Engineering, 2021, 68, 2313-2325.	2.5	83
17	The neuroethics of disorders of consciousness: a brief history of evolving ideas. Brain, 2021, 144, 3291-3310.	3.7	44
18	Development of a Manually Operated Communication System (MOCS) for patients in intensive care units. AAC: Augmentative and Alternative Communication, 2021, 37, 261-273.	0.8	2

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19	Early Detection of Human Epileptic Seizures Based on Intracortical Microelectrode Array Signals. IEEE Transactions on Biomedical Engineering, 2020, 67, 817-831.	2.5	20
20	Power-saving design opportunities for wireless intracortical brainâ€“computer interfaces. Nature Biomedical Engineering, 2020, 4, 984-996.	11.6	66
21	Personalized Connectome Mapping to Guide Targeted Therapy and Promote Recovery of Consciousness in the Intensive Care Unit. Neurocritical Care, 2020, 33, 364-375.	1.2	42
22	Replay of Learned Neural Firing Sequences during Rest in Human Motor Cortex. Cell Reports, 2020, 31, 107581.	2.9	37
23	The Discriminative Kalman Filter for Bayesian Filtering with Nonlinear and Nongaussian Observation Models. Neural Computation, 2020, 32, 969-1017.	1.3	13
24	Hand Knob Area of Premotor Cortex Represents the Whole Body in a Compositional Way. Cell, 2020, 181, 396-409.e26.	13.5	101
25	Applications of brain-computer interfaces to the control of robotic and prosthetic arms. Handbook of Clinical Neurology / Edited By P J Vinken and G W Bruyn, 2020, 168, 87-99.	1.0	37
26	Intact Brain Network Function in an Unresponsive Patient with <scp>COVID</scp>â€19. Annals of Neurology, 2020, 88, 851-854.	2.8	47
27	Speech-related dorsal motor cortex activity does not interfere with iBCI cursor control. Journal of Neural Engineering, 2020, 17, 016049.	1.8	21
28	Neural Representation of Observed, Imagined, and Attempted Grasping Force in Motor Cortex of Individuals with Chronic Tetraplegia. Scientific Reports, 2020, 10, 1429.	1.6	16
29	Decoding spoken English from intracortical electrode arrays in dorsal precentral gyrus. Journal of Neural Engineering, 2020, 17, 066007.	1.8	52
30	Auditory-Reliant Intracortical Brain Computer Interfaces for Effector Control by a Person with Tetraplegia. Communications in Computer and Information Science, 2020, , 102-109.	0.4	0
31	Restoring Functional Reach-to-Grasp in a Person with Chronic Tetraplegia Using Implanted Functional Electrical Stimulation and Intracortical Brain-Computer Interfaces. Springer Briefs in Electrical and Computer Engineering, 2020, , 35-45.	0.3	0
32	Intracortical neural activity distal to seizure-onset-areas predicts human focal seizures. PLoS ONE, 2019, 14, e0211847.	1.1	8
33	Corticospinal Tract Injury Estimated From Acute Stroke Imaging Predicts Upper Extremity Motor Recovery After Stroke. Stroke, 2019, 50, 3569-3577.	1.0	70
34	BCI decoder performance comparison of an LSTM recurrent neural network and a Kalman filter in retrospective simulation. , 2019, , .		28
35	Principled BCI Decoder Design and Parameter Selection Using a Feedback Control Model. Scientific Reports, 2019, 9, 8881.	1.6	28
36	Volitional control of single-electrode high gamma local field potentials by people with paralysis. Journal of Neurophysiology, 2019, 121, 1428-1450.	0.9	12

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37	Closed-loop cortical control of virtual reach and posture using Cartesian and joint velocity commands. Journal of Neural Engineering, 2019, 16, 026011.	1.8	14
38	Neural ensemble dynamics in dorsal motor cortex during speech in people with paralysis. ELife, 2019, 8, .	2.8	64
39	A Comparison of Intention Estimation Methods for Decoder Calibration in Intracortical Brainâ€“Computer Interfaces. IEEE Transactions on Biomedical Engineering, 2018, 65, 2066-2078.	2.5	19
40	Rapid calibration of an intracortical brainâ€“computer interface for people with tetraplegia. Journal of Neural Engineering, 2018, 15, 026007.	1.8	95
41	Feasibility of Automatic Error Detect-and-Undo System in Human Intracortical Brainâ€“Computer Interfaces. IEEE Transactions on Biomedical Engineering, 2018, 65, 1771-1784.	2.5	12
42	Signal processing methods for reducing artifacts in microelectrode brain recordings caused by functional electrical stimulation. Journal of Neural Engineering, 2018, 15, 026014.	1.8	26
43	Brain-machine interface cursor position only weakly affects monkey and human motor cortical activity in the absence of arm movements. Scientific Reports, 2018, 8, 16357.	1.6	8
44	Cortical control of a tablet computer by people with paralysis. PLoS ONE, 2018, 13, e0204566.	1.1	108
45	Watch, Imagine, Attempt: Motor Cortex Single-Unit Activity Reveals Context-Dependent Movement Encoding in Humans With Tetraplegia. Frontiers in Human Neuroscience, 2018, 12, 450.	1.0	24
46	Decoding Speech from Intracortical Multielectrode Arrays in Dorsal â€œArm/Hand Areasâ€•of Human Motor Cortex. , 2018, 2018, 93-97.		16
47	Inferring single-trial neural population dynamics using sequential auto-encoders. Nature Methods, 2018, 15, 805-815.	9.0	388
48	Robust Closed-Loop Control of a Cursor in a Person with Tetraplegia using Gaussian Process Regression. Neural Computation, 2018, 30, 2986-3008.	1.3	20
49	A useful communication in brain-computer interfaces. Neurology, 2018, 91, 109-110.	1.5	3
50	Feasibility of an EEG-based brain-computer interface in the intensive care unit. Clinical Neurophysiology, 2018, 129, 1519-1525.	0.7	33
51	Stable long-term BCI-enabled communication in ALS and locked-in syndrome using LFP signals. Journal of Neurophysiology, 2018, 120, 343-360.	0.9	91
52	Review: Human Intracortical Recording and Neural Decoding for Brainâ€“Computer Interfaces. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2017, 25, 1687-1696.	2.7	80
53	Signal-independent noise in intracortical brainâ€“computer interfaces causes movement time properties inconsistent with Fittsâ€™ law. Journal of Neural Engineering, 2017, 14, 026010.	1.8	9
54	Restoration of reaching and grasping movements through brain-controlled muscle stimulation in a person with tetraplegia: a proof-of-concept demonstration. Lancet, The, 2017, 389, 1821-1830.	6.3	632

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55	Feedback control policies employed by people using intracortical brainâ€“computer interfaces. Journal of Neural Engineering, 2017, 14, 016001.	1.8	41
56	Trends in BCI Research I: Brain-Computer Interfaces for Assessment of Patients with Locked-in Syndrome or Disorders of Consciousness. Springer Briefs in Electrical and Computer Engineering, 2017, , 105-125.	0.3	6
57	Early detection of consciousness in patients with acute severe traumatic brain injury. Brain, 2017, 140, 2399-2414.	3.7	244
58	Investigation of the Neural Dynamics of Human Motor Learning Using an Intracortical Brain Computer Interface. Archives of Physical Medicine and Rehabilitation, 2017, 98, e163.	0.5	0
59	High performance communication by people with paralysis using an intracortical brain-computer interface. ELife, 2017, 6, .	2.8	367
60	Evolving Applications, Technological Challenges and Future Opportunities in Neuromodulation: Proceedings of the Fifth Annual Deep Brain Stimulation Think Tank. Frontiers in Neuroscience, 2017, 11, 734.	1.4	65
61	Retrospectively supervised click decoder calibration for self-calibrating point-and-click brainâ€“computer interfaces. Journal of Physiology (Paris), 2016, 110, 382-391.	2.1	17
62	Predicting seizures from local field potentials recorded via intracortical microelectrode arrays. , 2016, 2016, 6353-6356.		6
63	An assistive decision-and-control architecture for force-sensitive handâ€“arm systems driven by humanâ€“machine interfaces. International Journal of Robotics Research, 2015, 34, 763-780.	5.8	43
64	Reprint of â€œNon-causal spike filtering improves decoding of movement intention for intracortical BCIsâ€• Journal of Neuroscience Methods, 2015, 244, 94-103.	1.3	10
65	The Emergence of Single Neurons in Clinical Neurology. Neuron, 2015, 86, 79-91.	3.8	74
66	Clinical translation of a high-performance neural prosthesis. Nature Medicine, 2015, 21, 1142-1145.	15.2	269
67	Microscale spatiotemporal dynamics during neocortical propagation of human focal seizures. NeuroImage, 2015, 122, 114-130.	2.1	41
68	Virtual typing by people with tetraplegia using a self-calibrating intracortical brain-computer interface. Science Translational Medicine, 2015, 7, 313ra179.	5.8	249
69	Neural Point-and-Click Communication by a Person With Incomplete Locked-In Syndrome. Neurorehabilitation and Neural Repair, 2015, 29, 462-471.	1.4	84
70	Modulation Depth Estimation and Variable Selection in State-Space Models for Neural Interfaces. IEEE Transactions on Biomedical Engineering, 2015, 62, 570-581.	2.5	12
71	Neural population dynamics in human motor cortex during movements in people with ALS. ELife, 2015, 4, e07436.	2.8	60
72	Intracranialbrainâ€“computer interfaces for communication and control. , 2014, , 577-585.		3

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73	Speech-Specific Tuning of Neurons in Human Superior Temporal Gyrus. Cerebral Cortex, 2014, 24, 2679-2693.	1.6	121
74	Locked in, but not out?. Neurology, 2014, 82, 1852-1853.	1.5	17
75	Early detection of human focal seizures based on cortical multiunit activity. , 2014, 2014, 5796-9.		6
76	Adaptive Offset Correction for Intracortical Brainâ€“Computer Interfaces. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2014, 22, 239-248.	2.7	17
77	Neuronal Ensemble Synchrony during Human Focal Seizures. Journal of Neuroscience, 2014, 34, 9927-9944.	1.7	103
78	Reliability of directional information in unsorted spikes and local field potentials recorded in human motor cortex. Journal of Neural Engineering, 2014, 11, 046007.	1.8	92
79	Inhibitory single neuron control of seizures and epileptic traveling waves in humans. BMC Neuroscience, 2014, 15, .	0.8	17
80	Non-causal spike filtering improves decoding of movement intention for intracortical BCIs. Journal of Neuroscience Methods, 2014, 236, 58-67.	1.3	28
81	Continuous Control of the DLR Light-Weight Robot III by a Human with Tetraplegia Using the BrainGate2 Neural Interface System. Springer Tracts in Advanced Robotics, 2014, , 125-136.	0.3	15
82	Sensors and Decoding for Intracortical Brain Computer Interfaces. Annual Review of Biomedical Engineering, 2013, 15, 383-405.	5.7	110
83	Unexpected Recovery of Function After Severe Traumatic Brain Injury: The Limits of Early Neuroimaging-Based Outcome Prediction. Neurocritical Care, 2013, 19, 364-375.	1.2	37
84	Intracortical Brain-Computer Interfaces for the Restoration of Communication and Mobility. Biophysical Journal, 2013, 104, 376a.	0.2	1
85	Early detection of human epileptic seizures based on intracortical local field potentials. , 2013, , 323-326.		7
86	Mixing decoded cursor velocity and position from an offline Kalman filter improves cursor control in people with tetraplegia. , 2013, , .		8
87	Somatosensory responses in a human motor cortex. Journal of Neurophysiology, 2013, 109, 2192-2204.	0.9	22
88	Advantages of closed-loop calibration in intracortical brainâ€“computer interfaces for people with tetraplegia. Journal of Neural Engineering, 2013, 10, 046012.	1.8	83
89	Adaptive parametric spectral estimation with Kalman smoothing for online early seizure detection. , 2013, , 1410-1413.		3
90	Intra-day signal instabilities affect decoding performance in an intracortical neural interface system. Journal of Neural Engineering, 2013, 10, 036004.	1.8	180

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91	194â€ƒHigh Performance Computer Cursor Control Using Neuronal Ensemble Recordings From the Motor Cortex of a Person With ALS. Neurosurgery, 2013, 60, 184.	0.6	1
92	Implanted Neural Interfaces: Ethics in Treatment and Research. , 2013, , 235-250.		12
93	Human seizures self-terminate across spatial scales via a critical transition. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 21116-21121.	3.3	182
94	Spatiotemporal dynamics of neocortical excitation and inhibition during human sleep. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 1731-1736.	3.3	166
95	Towards the optimal design of an assistive communication interface with neural input. , 2012, , .		2
96	BCI Users and Their Needs. , 2012, , 317-324.		16
97	Rapid fragmentation of neuronal networks at the onset of propofol-induced unconsciousness. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, E3377-86.	3.3	366
98	Prediction of Imagined Single-Joint Movements in a Person With High-Level Tetraplegia. IEEE Transactions on Biomedical Engineering, 2012, 59, 2755-2765.	2.5	39
99	Reach and grasp by people with tetraplegia using a neurally controlled robotic arm. Nature, 2012, 485, 372-375.	13.7	2,186
100	Neural control of cursor trajectory and click by a human with tetraplegia 1000 days after implant of an intracortical microelectrode array. Journal of Neural Engineering, 2011, 8, 025027.	1.8	429
101	Single-neuron dynamics in human focal epilepsy. Nature Neuroscience, 2011, 14, 635-641.	7.1	449
102	Efficient Decoding With Steady-State Kalman Filter in Neural Interface Systems. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2011, 19, 25-34.	2.7	88
103	Point-and-Click Cursor Control With an Intracortical Neural Interface System by Humans With Tetraplegia. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2011, 19, 193-203.	2.7	149
104	Continuous neuronal ensemble control of simulated arm reaching by a human with tetraplegia. Journal of Neural Engineering, 2011, 8, 034003.	1.8	91
105	Listening to Brain Microcircuits for Interfacing With External Worldâ€”Progress in Wireless Implantable Microelectronic Neuroengineering Devices. Proceedings of the IEEE, 2010, 98, 375-388.	16.4	114
106	Application of system identification methods for decoding imagined single-joint movements in an individual with high tetraplegia. , 2010, 2010, 2678-81.		2
107	Heterogeneous neuronal firing patterns during interictal epileptiform discharges in the human cortex. Brain, 2010, 133, 1668-1681.	3.7	168
108	Collective dynamics in human and monkey sensorimotor cortex: predicting single neuron spikes. Nature Neuroscience, 2010, 13, 105-111.	7.1	202

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109	Acute Stroke. , 2010, , 414-417.		0
110	Hyperacute stent placement in acute cervical internal carotid artery occlusions: the potential role of magnetic resonance imaging. Journal of NeuroInterventional Surgery, 2009, 1, 171-174.	2.0	0
111	Designing a Neural Interface System to Restore Mobility. , 2009, , 229-242.		3
112	Neural control of computer cursor velocity by decoding motor cortical spiking activity in humans with tetraplegia. Journal of Neural Engineering, 2008, 5, 455-476.	1.8	342
113	Primary Motor Cortex Tuning to Intended Movement Kinematics in Humans with Tetraplegia. Journal of Neuroscience, 2008, 28, 1163-1178.	1.7	216
114	Turning Thought into Action. New England Journal of Medicine, 2008, 359, 1175-1177.	13.9	20
115	Multi-state decoding of point-and-click control signals from motor cortical activity in a human with tetraplegia. , 2007, , .		24
116	Intuitive prosthetic limb control. Lancet, The, 2007, 369, 345-346.	6.3	6
117	Assistive technology and robotic control using motor cortex ensemble-based neural interface systems in humans with tetraplegia. Journal of Physiology, 2007, 579, 603-611.	1.3	166
118	Initial Surgical Experience with an Intracortical Microelectrode Array for Brain-computer Interface Applications. Neurosurgery, 2006, 59, 481.	0.6	4
119	Neuronal ensemble control of prosthetic devices by a human with tetraplegia. Nature, 2006, 442, 164-171.	13.7	2,979
120	Sensors for brain-computer interfaces. IEEE Engineering in Medicine and Biology Magazine, 2006, 25, 32-38.	1.1	100
121	Horizons in Prosthesis Development for the Restoration of Limb Function. Journal of the American Academy of Orthopaedic Surgeons, The, 2006, 14, S198-S204.	1.1	33
122	Braingate: Turning Thought into Actionâ€"First Experience with a Human Neuromotor Prosthesis. Neurosurgery, 2005, 57, 425-425.	0.6	4
123	West Nile Encephalitis in Massachusetts. New England Journal of Medicine, 2002, 346, 1030-1031.	13.9	0
124	Electrical stimulation approaches to stroke recovery. , 0, , 247-258.		0