Tonio Ball

List of Publications by Year
in descending order

71 papers	5,738 citations	136950 32 h-index	98798 67 g-index
76 all docs	76 docs citations	76 times ranked	6614 citing authors

#	Article	IF	Citations
1	Deep learning with convolutional neural networks for EEG decoding and visualization. Human Brain Mapping, 2017, 38, 5391-5420.	3.6	1,656
2	Signal quality of simultaneously recorded invasive and non-invasive EEG. NeuroImage, 2009, 46, 708-716.	4.2	335
3	The Role of Higher-Order Motor Areas in Voluntary Movement as Revealed by High-Resolution EEG and fMRI. NeuroImage, 1999, 10, 682-694.	4.2	317
4	Prediction of arm movement trajectories from ECoG-recordings in humans. Journal of Neuroscience Methods, 2008, 167, 105-114.	2.5	301
5	Movement related activity in the high gamma range of the human EEG. NeuroImage, 2008, 41, 302-310.	4.2	236
6	Decoding natural grasp types from human ECoG. NeuroImage, 2012, 59, 248-260.	4.2	236
7	Functional organization of the human anterior insular cortex. Neuroscience Letters, 2009, 457, 66-70.	2.1	227
8	A review on directional information in neural signals for brain-machine interfaces. Journal of Physiology (Paris), 2009, 103, 244-254.	2.1	162
9	Response Properties of Human Amygdala Subregions: Evidence Based on Functional MRI Combined with Probabilistic Anatomical Maps. PLoS ONE, 2007, 2, e307.	2.5	144
10	Machine-learning-based diagnostics of EEG pathology. NeuroImage, 2020, 220, 117021.	4.2	119
11	Differential representation of arm movement direction in relation to cortical anatomy and function. Journal of Neural Engineering, 2009, 6, 016006.	3.5	112
12	Heart cycle-related effects on event-related potentials, spectral power changes, and connectivity patterns in the human ECoG. NeuroImage, 2013, 81, 178-190.	4.2	109
13	Comparing information about arm movement direction in single channels of local and epicortical field potentials from monkey and human motor cortex. Journal of Physiology (Paris), 2004, 98, 498-506.	2.1	97
14	A Rapid Sound-Action Association Effect in Human Insular Cortex. PLoS ONE, 2007, 2, e259.	2.5	85
15	Causal interpretation rules for encoding and decoding models in neuroimaging. NeuroImage, 2015, 110, 48-59.	4.2	84
16	Structural basis of empathy and the domain general region in the anterior insular cortex. Frontiers in Human Neuroscience, 2013, 7, 177.	2.0	80
17	Pain and emotion in the insular cortex: evidence for functional reorganization in major depression. Neuroscience Letters, 2012, 520, 204-209.	2.1	76
18	Anatomical specificity of functional amygdala imaging of responses to stimuli with positive and negative emotional valence. Journal of Neuroscience Methods, 2009, 180, 57-70.	2.5	74

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19	Traveling waves and trial averaging: The nature of single-trial and averaged brain responses in large-scale cortical signals. NeuroImage, 2013, 73, 95-112.	4.2	72
20	The Effects of Closed-Loop Medical Devices on the Autonomy and Accountability of Persons and Systems. Cambridge Quarterly of Healthcare Ethics, 2016, 25, 623-633.	0.8	61
21	Co-localizing linguistic and musical syntax with intracranial EEG. NeuroImage, 2013, 64, 134-146.	4.2	60
22	An online brainâ€"machine interface using decoding of movement direction from the human electrocorticogram. Journal of Neural Engineering, 2012, 9, 046003.	3.5	56
23	sLORETA allows reliable distributed source reconstruction based on subdural strip and grid recordings. Human Brain Mapping, 2012, 33, 1172-1188.	3.6	51
24	Detection of Error Related Neuronal Responses Recorded by Electrocorticography in Humans during Continuous Movements. PLoS ONE, 2013, 8, e55235.	2.5	48
25	Error-related electrocorticographic activity in humans during continuous movements. Journal of Neural Engineering, 2012, 9, 026007.	3.5	44
26	Closed-loop interaction with the cerebral cortex: a review of wireless implant technology. Brain-Computer Interfaces, 2017, 4, 146-154.	1.8	44
27	Somatotopic mapping of natural upper- and lower-extremity movements and speech production with high gamma electrocorticography. NeuroImage, 2013, 81, 164-177.	4.2	43
28	Time Scales of Auditory Habituation in the Amygdala and Cerebral Cortex. Cerebral Cortex, 2010, 20, 2531-2539.	2.9	41
29	Predominance of Movement Speed Over Direction in Neuronal Population Signals of Motor Cortex: Intracranial EEG Data and A Simple Explanatory Model. Cerebral Cortex, 2016, 26, 2863-2881.	2.9	40
30	Grasp Detection from Human ECoG during Natural Reach-to-Grasp Movements. PLoS ONE, 2013, 8, e54658.	2.5	40
31	A service assistant combining autonomous robotics, flexible goal formulation, and deep-learning-based brainâ€"computer interfacing. Robotics and Autonomous Systems, 2019, 116, 98-113.	5.1	38
32	Reaching Movement Onset- and End-Related Characteristics of EEG Spectral Power Modulations. Frontiers in Neuroscience, 2012, 6, 65.	2.8	36
33	The role of ECoG magnitude and phase in decoding position, velocity, and acceleration during continuous motor behavior. Frontiers in Neuroscience, 2013, 7, 200.	2.8	36
34	Mapping of sheep sensory cortex with a novel microelectrocorticography grid. Journal of Comparative Neurology, 2014, 522, 3590-3608.	1.6	33
35	The dynamics of error processing in the human brain as reflected by high-gamma activity in noninvasive and intracranial EEG. NeuroImage, 2018, 173, 564-579.	4.2	31
36	Real-life speech production and perception have a shared premotor-cortical substrate. Scientific Reports, 2018, 8, 8898.	3.3	30

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37	Visualization of the amygdalo–hippocampal border and its structural variability by 7T and 3T magnetic resonance imaging. Human Brain Mapping, 2014, 35, 4316-4329.	3.6	29
38	Invasive brain–machine interfaces: a survey of paralyzed patients' attitudes, knowledge and methods of information retrieval. Journal of Neural Engineering, 2015, 12, 043001.	3.5	29
39	Mapping the fine structure of cortical activity with different micro-ECoG electrode array geometries. Journal of Neural Engineering, 2017, 14, 056004.	3.5	28
40	Deep transfer learning for error decoding from non-invasive EEG. , 2018, , .		28
41	New Perspectives on Neuroengineering and Neurotechnologies: NSF-DFG Workshop Report. IEEE Transactions on Biomedical Engineering, 2016, 63, 1354-1367.	4.2	23
42	Neurolinguistic and machine-learning perspectives on direct speech BCIs for restoration of naturalistic communication. Brain-Computer Interfaces, 2017, 4, 186-199.	1.8	23
43	Brain Activity in Virtual Reality: Assessing Signal Quality of High-Resolution EEG While Using Head-Mounted Displays. , 2019, , .		22
44	"Doctor" or "darling"? Decoding the communication partner from ECoG of the anterior temporal lobe during non-experimental, real-life social interaction. Frontiers in Human Neuroscience, 2012, 6, 251.	2.0	21
45	Hierarchical internal representation of spectral features in deep convolutional networks trained for EEG decoding. , 2018, , .		21
46	Towards a Governance Framework for Brain Data. Neuroethics, 2022, 15, .	2.8	21
47	Who gets afraid in the MRI-scanner? Neurogenetics of state-anxiety changes during an fMRI experiment. Neuroscience Letters, 2014, 583, 81-86.	2.1	19
48	From speech to thought: the neuronal basis of cognitive units in non-experimental, real-life communication investigated using ECoG. Frontiers in Human Neuroscience, 2014, 8, 383.	2.0	18
49	Evaluation of µECoG electrode arrays in the minipig: Experimental procedure and neurosurgical approach. Journal of Neuroscience Methods, 2011, 202, 77-86.	2.5	17
50	Variability of fMRI–response patterns at different spatial observation scales. Human Brain Mapping, 2012, 33, 1155-1171.	3.6	16
51	Large-scale cortical travelling waves predict localized future cortical signals. PLoS Computational Biology, 2019, 15, e1007316.	3.2	15
52	Human motor cortex relies on sparse and action-specific activation during laughing, smiling and speech production. Communications Biology, 2019, 2, 118.	4.4	15
53	Electrophysiological correlates of neurodegeneration in motor and non-motor brain regions in amyotrophic lateral sclerosis—implications for brain–computer interfacing. Journal of Neural Engineering, 2018, 15, 041003.	3.5	14
54	Intention Concepts and Brain-Machine Interfacing. Frontiers in Psychology, 2012, 3, 455.	2.1	11

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55	Computationally optimized ECoG stimulation with local safety constraints. NeuroImage, 2018, 173, 35-48.	4.2	11
56	Electrical Stimulation of the Human Cerebral Cortex by Extracranial Muscle Activity: Effect Quantification With Intracranial EEG and FEM Simulations. IEEE Transactions on Biomedical Engineering, 2016, 63, 2552-2563.	4.2	10
57	Blink- and saccade-related suppression effects in early visual areas of the human brain: Intracranial EEG investigations during natural viewing conditions. NeuroImage, 2021, 230, 117788.	4.2	10
58	The Role of the Subgenual Anterior Cingulate Cortex and Amygdala in Environmental Sensitivity to Infant Crying. PLoS ONE, 2016, 11, e0161181.	2.5	10
59	Modulating dream experience: Noninvasive brain stimulation over the sensorimotor cortex reduces dream movement. Scientific Reports, 2020, 10, 6735.	3.3	9
60	Closed-loop interaction with the cerebral cortex using a novel micro-ECoG-based implant: the impact of beta vs. gamma stimulation frequencies on cortico-cortical spectral responses. Brain-Computer Interfaces, 2017, 4, 214-224.	1.8	8
61	Spectral bandwidth of interictal fast epileptic activity characterizes the seizure onset zone. NeuroImage: Clinical, 2018, 17, 865-872.	2.7	8
62	A Structured Approach to Test the Signal Quality of Electroencephalography Measurements During Use of Head-Mounted Displays for Virtual Reality Applications. Frontiers in Neuroscience, 2021, 15, 733673.	2.8	8
63	A Large-Scale Evaluation Framework for EEG Deep Learning Architectures. , 2018, , .		7
64	Cross-Paradigm Pretraining of Convolutional Networks Improves Intracranial EEG Decoding. , 2018, , .		7
65	Intracranial Error Detection via Deep Learning. , 2018, , .		5
66	An interspecies comparative study of invasive electrophysiological functional connectivity. Brain and Behavior, 2017, 7, e00863.	2.2	3
67	Probabilistic neuroanatomical assignment of intracranial electrodes using the ELAS toolbox. Journal of Neuroscience Methods, 2019, 327, 108396.	2.5	3
68	Hybrid Brain-Computer-Interfacing for Human-Compliant Robots: Inferring Continuous Subjective Ratings With Deep Regression. Frontiers in Neurorobotics, 2019, 13, 76.	2.8	3
69	Interpretable functional specialization emerges in deep convolutional networks trained on brain signals. Journal of Neural Engineering, 2022, 19, 036006.	3.5	3
70	Probabilistic Assignment of Brain Responses to the Human Amygdala and its Subregions using High Resolution Functional MRI. IFMBE Proceedings, 2009, , 807-810.	0.3	1
71	A Study of Word Complexity Under Conditions of Non-experimental, Natural Overt Speech Production Using ECoG. Frontiers in Human Neuroscience, 2021, 15, 711886.	2.0	1