Gerwin Schalk

List of Publications by Year
in descending order

144 papers	17,823 citations	28274 55 h-index	15732 125 g-index
164 all docs	164 docs citations	164 times ranked	10077 citing authors

#	Article	IF	Citations
1	BCI2000: A General-Purpose Brain-Computer Interface (BCI) System. IEEE Transactions on Biomedical Engineering, 2004, 51, 1034-1043.	4.2	2,248
2	Brain-computer interface technology: a review of the first international meeting. IEEE Transactions on Rehabilitation Engineering: A Publication of the IEEE Engineering in Medicine and Biology Society, 2000, 8, 164-173.	1.4	1,703
3	A brain–computer interface using electrocorticographic signals in humans. Journal of Neural Engineering, 2004, 1, 63-71.	3.5	1,066
4	The BCI competition III: validating alternative approaches to actual BCI problems. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2006, 14, 153-159.	4.9	832
5	Review of the BCI Competition IV. Frontiers in Neuroscience, 2012, 6, 55.	2.8	686
6	Spectral Changes in Cortical Surface Potentials during Motor Movement. Journal of Neuroscience, 2007, 27, 2424-2432.	3.6	654
7	The BCI Competition 2003: Progress and Perspectives in Detection and Discrimination of EEG Single Trials. IEEE Transactions on Biomedical Engineering, 2004, 51, 1044-1051.	4.2	535
8	Patients with ALS can use sensorimotor rhythms to operate a brain-computer interface. Neurology, 2005, 64, 1775-1777.	1.1	530
9	Cortical activity during motor execution, motor imagery, and imagery-based online feedback. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 4430-4435.	7.1	474
10	Decoding two-dimensional movement trajectories using electrocorticographic signals in humans. Journal of Neural Engineering, 2007, 4, 264-275.	3.5	456
11	Two-dimensional movement control using electrocorticographic signals in humans. Journal of Neural Engineering, 2008, 5, 75-84.	3.5	442
12	An MEG-based brain–computer interface (BCI). NeuroImage, 2007, 36, 581-593.	4.2	360
13	Brain-Computer Interfaces Using Electrocorticographic Signals. IEEE Reviews in Biomedical Engineering, 2011, 4, 140-154.	18.0	329
14	The wadsworth BCI research and development program: at home with BCI. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2006, 14, 229-233.	4.9	294
15	Towards an independent brain–computer interface using steady state visual evoked potentials. Clinical Neurophysiology, 2008, 119, 399-408.	1.5	294
16	Advanced Neurotechnologies for Chronic Neural Interfaces: New Horizons and Clinical Opportunities. Journal of Neuroscience, 2008, 28, 11830-11838.	3.6	256
17	Does the 'P300' speller depend on eye gaze?. Journal of Neural Engineering, 2010, 7, 056013.	3.5	255
18	Non-invasive brain–computer interface system: Towards its application as assistive technology. Brain Research Bulletin, 2008, 75, 796-803.	3.0	250

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19	Decoding flexion of individual fingers using electrocorticographic signals in humans. Journal of Neural Engineering, 2009, 6, 066001.	3.5	247
20	EEG-based communication: presence of an error potential. Clinical Neurophysiology, 2000, 111, 2138-2144.	1.5	219
21	Electrocorticography-based brain computer Interface-the seattle experience. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2006, 14, 194-198.	4.9	212
22	ECoG factors underlying multimodal control of a brain-computer interface. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2006, 14, 246-250.	4.9	198
23	Brain-to-text: decoding spoken phrases from phone representations in the brain. Frontiers in Neuroscience, 2015, 9, 217.	2.8	195
24	The Wadsworth Center brain-computer interface (BCI) research and development program. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2003, 11, 1-4.	4.9	182
25	Decoding vowels and consonants in spoken and imagined words using electrocorticographic signals in humans. Journal of Neural Engineering, 2011, 8, 046028.	3.5	173
26	Spatiotemporal dynamics of electrocorticographic high gamma activity during overt and covert word repetition. NeuroImage, 2011, 54, 2960-2972.	4.2	170
27	Neural correlate of the construction of sentence meaning. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E6256-E6262.	7.1	151
28	Contralesional Brain–Computer Interface Control of a Powered Exoskeleton for Motor Recovery in Chronic Stroke Survivors. Stroke, 2017, 48, 1908-1915.	2.0	151
29	Decoding spectrotemporal features of overt and covert speech from the human cortex. Frontiers in Neuroengineering, 2014, 7, 14.	4.8	144
30	A Practical Guide to Brain–Computer Interfacing with BCI2000. , 2010, , .		142
31	A practical procedure for real-time functional mapping of eloquent cortex using electrocorticographic signals in humans. Epilepsy and Behavior, 2009, 15, 278-286.	1.7	140
32	Using the electrocorticographic speech network to control a brain–computer interface in humans. Journal of Neural Engineering, 2011, 8, 036004.	3.5	137
33	The Emerging World Of Motor Neuroprosthetics: a Neurosurgical Perspective. Neurosurgery, 2006, 59, 1-14.	1.1	135
34	Word pair classification during imagined speech using direct brain recordings. Scientific Reports, 2016, 6, 25803.	3.3	113
35	The Tracking of Speech Envelope in the Human Cortex. PLoS ONE, 2013, 8, e53398.	2.5	109
36	Rapid Communication with a "P300" Matrix Speller Using Electrocorticographic Signals (ECoG). Frontiers in Neuroscience, 2011, 5, 5.	2.8	105

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37	Evolution of brain-computer interfaces: going beyond classic motor physiology. Neurosurgical Focus, 2009, 27, E4.	2.3	96
38	Facephenes and rainbows: Causal evidence for functional and anatomical specificity of face and color processing in the human brain. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 12285-12290.	7.1	95
39	Optimal referencing for stereo-electroencephalographic (SEEG) recordings. NeuroImage, 2018, 183, 327-335.	4.2	95
40	Brain–computer interfaces (BCIs): Detection instead of classification. Journal of Neuroscience Methods, 2008, 167, 51-62.	2.5	94
41	Current trends in hardware and software for brain–computer interfaces (BCIs). Journal of Neural Engineering, 2011, 8, 025001.	3.5	91
42	Brain–computer interfacing based on cognitive control. Annals of Neurology, 2010, 67, 809-816.	5.3	88
43	Electrical Stimulation Mapping of the Brain: Basic Principles and Emerging Alternatives. Journal of Clinical Neurophysiology, 2018, 35, 86-97.	1.7	88
44	Real-time detection of event-related brain activity. NeuroImage, 2008, 43, 245-249.	4.2	85
45	Nonuniform High-Gamma (60–500 Hz) Power Changes Dissociate Cognitive Task and Anatomy in Human Cortex. Journal of Neuroscience, 2011, 31, 2091-2100.	3.6	83
46	Recording Human Electrocorticographic (ECoG) Signals for Neuroscientific Research and Real-time Functional Cortical Mapping. Journal of Visualized Experiments, 2012, , .	0.3	80
47	Alpha power indexes task-related networks on large and small scales: A multimodal ECoG study in humans and a non-human primate. NeuroImage, 2016, 134, 122-131.	4.2	77
48	Electrocorticographic Frequency Alteration Mapping: A Clinical Technique for Mapping the Motor Cortex. Operative Neurosurgery, 2007, 60, ONS-260-ONS-271.	0.8	76
49	Spatial and temporal relationships of electrocorticographic alpha and gamma activity during auditory processing. NeuroImage, 2014, 97, 188-195.	4.2	74
50	Spontaneous Decoding of the Timing and Content of Human Object Perception from Cortical Surface Recordings Reveals Complementary Information in the Event-Related Potential and Broadband Spectral Change. PLoS Computational Biology, 2016, 12, e1004660.	3.2	74
51	Electrocorticographic representations of segmental features in continuous speech. Frontiers in Human Neuroscience, 2015, 09, 97.	2.0	72
52	Unique Cortical Physiology Associated With Ipsilateral Hand Movements and Neuroprosthetic Implications. Stroke, 2008, 39, 3351-3359.	2.0	67
53	Temporal evolution of gamma activity in human cortex during an overt and covert word repetition task. Frontiers in Human Neuroscience, 2012, 6, 99.	2.0	63
54	A mu-Rhythm Matched Filter for Continuous Control of a Brain-Computer Interface. IEEE Transactions on Biomedical Engineering, 2007, 54, 273-280.	4.2	61

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55	The Interaction of a New Motor Skill and an Old One: H-Reflex Conditioning and Locomotion in Rats. Journal of Neuroscience, 2005, 25, 6898-6906.	3.6	59
56	Brain–computer symbiosis. Journal of Neural Engineering, 2008, 5, P1-P15.	3.5	58
57	Can Electrocorticography (ECoG) Support Robust and Powerful Brain-Computer Interfaces?. Frontiers in Neuroengineering, 2010, 3, 9.	4.8	57
58	Encoding of Multiple Reward-Related Computations in Transient and Sustained High-Frequency Activity in Human OFC. Current Biology, 2018, 28, 2889-2899.e3.	3.9	56
59	Passive real-time identification of speech and motor cortex during an awake craniotomy. Epilepsy and Behavior, 2010, 18, 123-128.	1.7	55
60	Spatio-Temporal Progression of Cortical Activity Related to Continuous Overt and Covert Speech Production in a Reading Task. PLoS ONE, 2016, 11, e0166872.	2.5	54
61	Decoding onset and direction of movements using Electrocorticographic (ECoG) signals in humans. Frontiers in Neuroengineering, 2012, 5, 15.	4.8	53
62	Spatiotemporal dynamics of word retrieval in speech production revealed by cortical high-frequency band activity. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E4530-E4538.	7.1	53
63	NeuralAct: A Tool to Visualize Electrocortical (ECoG) Activity on a Three-Dimensional Model of the Cortex. Neuroinformatics, 2015, 13, 167-174.	2.8	51
64	Electrocorticographic Frequency Alteration Mapping for Extraoperative Localization of Speech Cortex. Neurosurgery, 2010, 66, E407-E409.	1.1	50
65	The effects of spatial filtering and artifacts on electrocorticographic signals. Journal of Neural Engineering, 2015, 12, 056008.	3.5	50
66	Decoding covert spatial attention using electrocorticographic (ECoG) signals in humans. NeuroImage, 2012, 60, 2285-2293.	4.2	49
67	Neural Correlates of Visual?Spatial Attention in Electrocorticographic Signals in Humans. Frontiers in Human Neuroscience, 2011, 5, 89.	2.0	48
68	Dynamics of electrocorticographic (ECoG) activity in human temporal and frontal cortical areas during music listening. NeuroImage, 2012, 61, 841-848.	4.2	45
69	A neural population selective for song in human auditory cortex. Current Biology, 2022, 32, 1470-1484.e12.	3.9	45
70	Electrocorticographic (ECoG) correlates of human arm movements. Experimental Brain Research, 2012, 223, 1-10.	1.5	41
71	A general framework for dynamic cortical function: the function-through-biased-oscillations (FBO) hypothesis. Frontiers in Human Neuroscience, 2015, 9, 352.	2.0	41
72	A quantitative method for evaluating cortical responses to electrical stimulation. Journal of Neuroscience Methods, 2019, 311, 67-75.	2.5	41

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73	A Procedure for Measuring Latencies in Brain–Computer Interfaces. IEEE Transactions on Biomedical Engineering, 2010, 57, 1785-1797.	4.2	33
74	Oscillatory phase modulates the timing of neuronal activations and resulting behavior. NeuroImage, 2016, 133, 294-301.	4.2	30
75	BCI Software Platforms. Biological and Medical Physics Series, 2012, , 303-331.	0.4	30
76	Using an EEG-Based Brain-Computer Interface for Virtual Cursor Movement with BCI2000. Journal of Visualized Experiments, 2009, , .	0.3	28
77	Silent Communication: Toward Using Brain Signals. IEEE Pulse, 2012, 3, 43-46.	0.3	28
78	ECoG high gamma activity reveals distinct cortical representations of lyrics passages, harmonic and timbre-related changes in a rock song. Frontiers in Human Neuroscience, 2014, 8, 798.	2.0	28
79	Differential roles of high gamma and local motor potentials for movement preparation and execution. Brain-Computer Interfaces, 2016, 3, 88-102.	1.8	28
80	Intraoperative mapping of expressive language cortex using passive real-time electrocorticography. Epilepsy & Behavior Case Reports, 2016, 5, 46-51.	1.5	28
81	Real-Time Functional Mapping With Electrocorticography in Pediatric Epilepsy. Clinical EEG and Neuroscience, 2014, 45, 205-211.	1.7	27
82	iEEGview: an open-source multifunction GUI-based Matlab toolbox for localization and visualization of human intracranial electrodes. Journal of Neural Engineering, 2020, 17, 016016.	3.5	27
83	Real-time functional mapping: potential tool for improving language outcome in pediatric epilepsy surgery. Journal of Neurosurgery: Pediatrics, 2014, 14, 287-295.	1.3	26
84	Identifying the attended speaker using electrocorticographic (ECoG) signals. Brain-Computer Interfaces, 2015, 2, 161-173.	1.8	25
85	Prior Knowledge Improves Decoding of Finger Flexion from Electrocorticographic Signals. Frontiers in Neuroscience, 2011, 5, 127.	2.8	24
86	Instantaneous voltage as an alternative to power- and phase-based interpretation of oscillatory brain activity. NeuroImage, 2017, 157, 545-554.	4.2	22
87	Real-time detection and discrimination of visual perception using electrocorticographic signals. Journal of Neural Engineering, 2018, 15, 036001.	3.5	22
88	A method to establish the spatiotemporal evolution of task-related cortical activity from electrocorticographic signals in single trials. Journal of Neuroscience Methods, 2016, 271, 76-85.	2.5	21
89	Passive functional mapping of receptive language areas using electrocorticographic signals. Clinical Neurophysiology, 2018, 129, 2517-2524.	1.5	21
90	cortiQ - Clinical software for electrocorticographic real-time functional mapping of the eloquent cortex. , 2013, 2013, 6365-8.		18

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91	Within-subject reaction time variability: Role of cortical networks and underlying neurophysiological mechanisms. NeuroImage, 2021, 237, 118127.	4.2	18
92	Localizing ECoG electrodes on the cortical anatomy without post-implantation imaging. NeuroImage: Clinical, 2014, 6, 64-76.	2.7	17
93	A general method for assessing brain–computer interface performance and its limitations. Journal of Neural Engineering, 2014, 11, 026018.	3.5	16
94	A low-frequency oscillatory neural signal in humans encodes a developing decision variable. NeuroImage, 2013, 83, 795-808.	4.2	15
95	BCI meeting 2005-workshop on technology: hardware and software. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2006, 14, 128-131.	4.9	14
96	Communication and Control by Listening: Toward Optimal Design of a Two-Class Auditory Streaming Brain-Computer Interface. Frontiers in Neuroscience, 2012, 6, 181.	2.8	14
97	Long-term spinal reflex studies in awake behaving mice. Journal of Neuroscience Methods, 2005, 149, 134-143.	2.5	12
98	Cortical alpha activity predicts the confidence in an impending action. Frontiers in Neuroscience, 2015, 9, 243.	2.8	12
99	Brain Sensors and Signals. , 2010, , 9-35.		10
100	Decoding Finger Flexion from Electrocorticographic Signals Using a Sparse Gaussian Process. , 2010, , .		9
101	Assessing dynamics, spatial scale, and uncertainty in task-related brain network analyses. Frontiers in Computational Neuroscience, 2014, 8, 31.	2.1	9
102	Current Trends in Brain–Computer Interface (BCI) Research and Development. International Journal of Human-Computer Interaction, 2010, 27, 1-4.	4.8	8
103	BCI Hardware and Software. , 2012, , 165-188.		8
104	Towards Continuous Speech Recognition for BCI. Springer Briefs in Electrical and Computer Engineering, 2017, , 21-29.	0.5	8
105	Workshops of the seventh international brain-computer interface meeting: not getting lost in translation. Brain-Computer Interfaces, 2019, 6, 71-101.	1.8	8
106	Sensor Modalities for Brain-Computer Interfacing. Lecture Notes in Computer Science, 2009, , 616-622.	1.3	7
107	Effective brain-computer interfacing using BCI2000. , 2009, 2009, 5498-501.		6
108	Coupled Hidden Markov Model for Electrocorticographic Signal Classification. , 2014, , .		6

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109	Electrocorticographic mapping of expressive language function without requiring the patient to speak: A report of three cases. Epilepsy & Behavior Case Reports, 2016, 6, 13-18.	1.5	6
110	Modulation in cortical excitability disrupts information transfer in perceptual-level stimulus processing.. NeuroImage, 2021, 243, 118498.	4.2	6
111	ECoG-Based BCIs. , 2018, , 297-322.		6
112	Three cases of feature correlation in an electrocorticographic BCI. , 2008, 2008, 5318-21.		5
113	Tracking of the Mu Rhythm using an Empirically Derived Matched Filter. , 0, , .		4
114	Detection of spontaneous class-specific visual stimuli with high temporal accuracy in human electrocorticography. , 2009, 2009, 6465-8.		4
115	Toward a gaze-independent matrix speller brain–computer interface. Clinical Neurophysiology, 2011, 122, 1063-1064.	1.5	4
116	Continuous speech recognition from ECoG. , 0, , .		4
117	Temporal transformation of multiunit activity improves identification of single motor units. Journal of Neuroscience Methods, 2002, 114, 87-98.	2.5	3
118	Non-Invasive Brain-Computer Interface System to Operate Assistive Devices. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 2532-5.	0.5	3
119	Simultaneous real-time monitoring of multiple cortical systems. Journal of Neural Engineering, 2014, 11, 056001.	3.5	3
120	The Plurality of Human Brain–Computer Interfacing [Scanning the Issue]. Proceedings of the IEEE, 2015, 103, 868-870.	21.3	3
121	Noninvasive Brain–Computer Interfaces. , 2018, , 357-377.		3
122	Individual Word Classification During Imagined Speech Using Intracranial Recordings. Springer Briefs in Electrical and Computer Engineering, 2019, , 83-91.	0.5	3
123	BCIs That Use Electrocorticographic Activity. , 2012, , 252-264.		2
124	Real-Time Software for Functional Mapping of Eloquent Cortex Using Electrocorticography. Biomedizinische Technik, 2013, 58 Suppl 1, .	0.8	2
125	Using BCI2000 in BCI Research. The Frontiers Collection, 2009, , 259-279.	0.2	2
126	BCI Software. , 2018, , 323-340.		2

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127	Dynamics of Oddball Sound Processing: Trial-by-Trial Modeling of ECoG Signals. Frontiers in Human Neuroscience, 2021, 15, 794654.	2.0	2
128	Defense-related insights and solutions from neuroscience and neuroengineering. , 2011, , .		1
129	Toward gaze-independent brain-computer interfaces. Clinical Neurophysiology, 2013, 124, 831-833.	1.5	1
130	Non-supervised technique to adapt spatial filters for ECoG data analysis. , 2014, , .		1
131	Robust signal identification for dynamic pattern classification. , 2016, , .		1
132	An ECoG-Based BCI Based on Auditory Attention to Natural Speech. Springer Briefs in Electrical and Computer Engineering, 2017, , 7-19.	0.5	1
133	SEEGview: A Toolbox for Localization and Visualization of Stereo-Electroencephalography (SEEG) Electrodes. , 2018, , .		1
134	Brainâ€"Computer Interfaces. , 2010, , 3-8.		1
135	Neural Responses to Speech-Specific Modulations Derived from a Spectro-Temporal Filter Bank. , 0, , .		1
136	User Tutorials. , 2010, , 59-81.		1
137	P18: Functional mapping of expressive language area with ECoG and ECS. Clinical Neurophysiology, 2014, 125, S52-S53.	1.5	0
138	Near-Instantaneous Classification of Perceptual States from Cortical Surface Recordings. Springer Briefs in Electrical and Computer Engineering, 2015, , 105-114.	0.5	0
139	Decoding details of human functions using electrocorticography. , 2016, , .		0
140	Temporal Pattern Localization using Mixed Integer Linear Programming. , 2018, , .		0
141	Brain-Computer Interaction. Lecture Notes in Computer Science, 2009, , 719-723.	1.3	0
142	Introducing BCI2000. , 2010, , 37-46.		0
143	Towards an Auditory Attention BCI. Springer Briefs in Electrical and Computer Engineering, 2015, , 29-42.	0.5	0
144	Perspectives on Brainâ€"Computer Interfaces. , 2018, , 721-724.		0