Anthony N Burkitt

List of Publications by Year in Descending Order

139 papers	3,050 citations	32 h-index	51 g-index
157 ext. papers	3,854 ext. citations	3.6 avg, IF	5.23 L-index

#	Paper	IF	Citations
139	Spatiotemporal Patterns of High-Frequency Activity (80-170 Hz) in Long-Term Intracranial EEG. *Neurology*, **2021**, 96, e1070-e1081	6.5	7
138	Predictive Visual Motion Extrapolation Emerges Spontaneously and without Supervision at Each Layer of a Hierarchical Neural Network with Spike-Timing-Dependent Plasticity. *Journal of Neuroscience*, **2021**, 41, 4428-4438	6.6	3
137	Learning an Efficient Hippocampal Place Map from Entorhinal Inputs Using Non-Negative Sparse Coding. *ENeuro*, **2021**, 8,	3.9	1
136	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	7.8	28
135	High-Frequency Oscillations in Epilepsy: What Have We Learned and What Needs to be Addressed. *Neurology*, **2021**, 96, 439-448	6.5	13
134	Learning receptive field properties of complex cells in V1. *PLoS Computational Biology*, **2021**, 17, e1007957	5	0
133	Seizure likelihood varies with day-to-day variations in sleep duration in patients with refractory focal epilepsy: A longitudinal electroencephalography investigation. *EClinicalMedicine*, **2021**, 37, 100934	11.3	4
132	Impact of axonal delay on structure development in a multi-layered network. *Neural Networks*, **2021**, 144, 737-754	9.1	0
131	Critical slowing down as a biomarker for seizure susceptibility. *Nature Communications*, **2020**, 11, 2172	17.4	50
130	In vivo feasibility of epiretinal stimulation using ultrananocrystalline diamond electrodes. *Journal of Neural Engineering*, **2020**, 17, 045014	5	2
129	Adaptive Surround Modulation of MT Neurons: A Computational Model. *Frontiers in Neural Circuits*, **2020**, 14, 529345	3.5	
128	Computational Neural Modeling of Auditory Cortical Receptive Fields. *Frontiers in Computational Neuroscience*, **2019**, 13, 28	3.5	5
127	Toward a Biologically Plausible Model of LGN-V1 Pathways Based on Efficient Coding. *Frontiers in Neural Circuits*, **2019**, 13, 13	3.5	5
126	Pattern Motion Processing by MT Neurons. *Frontiers in Neural Circuits*, **2019**, 13, 43	3.5	3
125	Predictive Coding with Neural Transmission Delays: A Real-Time Temporal Alignment Hypothesis. *ENeuro*, **2019**, 6,	3.9	16
124	Global activity shaping strategies for a retinal implant. *Journal of Neural Engineering*, **2019**, 16, 026008	5	8
123	Predictive coding of visual object position ahead of moving objects revealed by time-resolved EEG decoding. *NeuroImage*, **2018**, 171, 55-61	7.9	25

122	A biologically-based computational model of visual cortex that overcomes the X-junction illusion. *Neural Networks*, **2018**, 102, 10-20	9.1	5
121	Compensation for Traveling Wave Delay Through Selection of Dendritic Delays Using Spike-Timing-Dependent Plasticity in a Model of the Auditory Brainstem. *Frontiers in Computational Neuroscience*, **2018**, 12, 36	3.5	3
120	Feasibility of Nitrogen Doped Ultrananocrystalline Diamond Microelectrodes for Electrophysiological Recording From Neural Tissue. *Frontiers in Bioengineering and Biotechnology*, **2018**, 6, 85	5.8	5
119	Biophysical basis of the linear electrical receptive fields of retinal ganglion cells. *Journal of Neural Engineering*, **2018**, 15, 055001	5	7
118	Electrical receptive fields of retinal ganglion cells: Influence of presynaptic neurons. *PLoS Computational Biology*, **2018**, 14, e1005997	5	9
117	Minimizing activation of overlying axons with epiretinal stimulation: The role of fiber orientation and electrode configuration. *PLoS ONE*, **2018**, 13, e0193598	3.7	13
116	Bistability in Hodgkin-Huxley-type equations. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2018**, 2018, 4728-4731	0.9	1
115	Diamond Devices for High Acuity Prosthetic Vision. *Advanced Biology*, **2017**, 1, e1600003	3.5	23
114	Prediction of cortical responses to simultaneous electrical stimulation of the retina. *Journal of Neural Engineering*, **2017**, 14, 016006	5	13
113	A Minimally Invasive Endovascular Stent-Electrode Array for Chronic Recordings of Cortical Neural Activity. *Springer Briefs in Electrical and Computer Engineering*, **2017**, 55-63	0.4	1
112	Neural Responses to Multielectrode Stimulation of Healthy and Degenerate Retina **2017**, 58, 3770-3784		16
111	26th Annual Computational Neuroscience Meeting (CNS*2017): Part 2. *BMC Neuroscience*, **2017**, 18,	3.2	5
110	An integrated model of pitch perception incorporating place and temporal pitch codes with application to cochlear implant research. *Hearing Research*, **2017**, 344, 135-147	3.9	10
109	Single-compartment models of retinal ganglion cells with different electrophysiologies. *Network: Computation in Neural Systems*, **2017**, 28, 74-93	0.7	6
108	Suprachoroidal Retinal Prostheses **2017**, 125-138		3
107	Feasibility of a chronic, minimally invasive endovascular neural interface. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2016**, 2016, 4455-4458	0.9	6
106	Minimally invasive endovascular stent-electrode array for high-fidelity, chronic recordings of cortical neural activity. *Nature Biotechnology*, **2016**, 34, 320-7	44.5	127
105	Learning Pitch with STDP: A Computational Model of Place and Temporal Pitch Perception Using Spiking Neural Networks. *PLoS Computational Biology*, **2016**, 12, e1004860	5	5

104	A Possible Role for End-Stopped V1 Neurons in the Perception of Motion: A Computational Model. *PLoS ONE*, **2016**, 11, e0164813	3.7	6
103	A computational model of orientation-dependent activation of retinal ganglion cells. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2016**, 2016, 5447-5450	0.9	1
102	Spectral distribution of local field potential responses to electrical stimulation of the retina. *Journal of Neural Engineering*, **2016**, 13, 036003	5	8
101	Changes in ganglion cells during retinal degeneration. *Neuroscience*, **2016**, 329, 1-11	3.9	22
100	Chronic impedance spectroscopy of an endovascular stent-electrode array. *Journal of Neural Engineering*, **2016**, 13, 046020	5	24
99	Spike history neural response model. *Journal of Computational Neuroscience*, **2015**, 38, 463-81	1.4	4
98	The neurodynamics of epilepsy: a homotopy analysis between current-based and conductance-based synapses in a neural field model of epilepsy. *BMC Neuroscience*, **2015**, 16,	3.2	78
97	Computational neural modelling of auditory cortical receptive fields. *BMC Neuroscience*, **2015**, 16,	3.2	78
96	The interaction between integration and segmentation neurons for motion perception. *BMC Neuroscience*, **2015**, 16,	3.2	78
95	An increase in the extracellular potassium concentration can cause seizures. *BMC Neuroscience*, **2015**, 16,	3.2	78
94	Broadband onset inhibition can suppress spectral splatter in the auditory brainstem. *PLoS ONE*, **2015**, 10, e0126500	3.7	6
93	Improved visual performance in letter perception through edge orientation encoding in a retinal prosthesis simulation. *Journal of Neural Engineering*, **2014**, 11, 066002	5	2
92	A linear-nonlinear model accurately predicts cortical responses to simultaneous electrical stimulation with a retinal implant. *BMC Neuroscience*, **2014**, 15, P95	3.2	78
91	Seizure dynamics: a computational model based approach demonstrating variability in seizure mechanisms. *BMC Neuroscience*, **2014**, 15,	3.2	78
90	Goal-directed control with cortical units that are gated by both top-down feedback and oscillatory coherence. *BMC Neuroscience*, **2014**, 15, P197	3.2	78
89	Observability limits for networked oscillators. *Automatica*, **2014**, 50, 1087-1099	5.7	6
88	A comparison of open-loop and closed-loop stimulation strategies to control excitation of retinal ganglion cells. *Biomedical Signal Processing and Control*, **2014**, 14, 164-174	4.9	2
87	Coexistence of reward and unsupervised learning during the operant conditioning of neural firing rates. *PLoS ONE*, **2014**, 9, e87123	3.7	3

86	Goal-directed control with cortical units that are gated by both top-down feedback and oscillatory coherence. *Frontiers in Neural Circuits*, **2014**, 8, 94	3.5	3
85	Application of a pitch perception model to investigate the effect of stimulation field spread on the pitch ranking abilities of cochlear implant recipients. *Hearing Research*, **2014**, 316, 129-37	3.9	4
84	Interplay of intrinsic and synaptic conductances in the generation of high-frequency oscillations in interneuronal networks with irregular spiking. *PLoS Computational Biology*, **2014**, 10, e1003574	5	14
83	Modelling extracellular electrical stimulation: part 4. Effect of the cellular composition of neural tissue on its spatio-temporal filtering properties. *Journal of Neural Engineering*, **2014**, 11, 065005	5	20
82	Modelling extracellular electrical stimulation: part 3. Derivation and interpretation of neural tissue equations. *Journal of Neural Engineering*, **2014**, 11, 065004	5	26
81	Feedback stimulation strategy: control of retinal ganglion cells activation. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2014**, 2014, 1703-6	0.9	
80	First-in-human trial of a novel suprachoroidal retinal prosthesis. *PLoS ONE*, **2014**, 9, e115239	3.7	201
79	The effect of morphology upon electrophysiological responses of retinal ganglion cells: simulation results. *Journal of Computational Neuroscience*, **2014**, 36, 157-75	1.4	15
78	Onset-inhibition in the auditory brainstem: a potential mechanism for signal enhancement of speech-like sounds. *BMC Neuroscience*, **2013**, 14,	3.2	78
77	The Neurodynamics of Epilepsy: Synaptic regulation and reversal potential modulation during seizures in a neural field model with conductance-based synapses. *BMC Neuroscience*, **2013**, 14,	3.2	1
76	Spatial shaping of neural activity using electrical stimulation. *BMC Neuroscience*, **2013**, 14,	3.2	78
75	Predicting the location of the axon initial segment using spike waveform analysis: simulations of retinal ganglion cell physiology. *BMC Neuroscience*, **2013**, 14,	3.2	78
74	Requirements for the robust operant conditioning of neural firing rates. *BMC Neuroscience*, **2013**, 14,	3.2	78
73	Modeling intrinsic electrophysiology of AII amacrine cells: preliminary results. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2013**, 2013, 6551-4	0.9	2
72	Delay selection by spike-timing-dependent plasticity in recurrent networks of spiking neurons receiving oscillatory inputs. *PLoS Computational Biology*, **2013**, 9, e1002897	5	14
71	Optimized single pulse stimulation strategy for retinal implants. *Journal of Neural Engineering*, **2013**, 10, 016003	5	3
70	Retinal ganglion cells electrophysiology: the effect of cell morphology on impulse waveform. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2013**, 2013, 2583-6	0.9	
69	Effect of soma polarization on electrical stimulation thresholds of retinal ganglion cells **2013**,		2

68	Internal inconsistencies in models of electrical stimulation in neural tissue. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2013**, 2013, 5946-9	0.9	3
67	Embracing the irregular: a patient-specific image processing strategy for visual prostheses. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2013**, 2013, 3563-6	0.9	4
66	Multicompartment retinal ganglion cells response to high frequency bi-phasic pulse train stimulation: Simulation results. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2013**, 2013, 69-72	0.9	1
65	Heating of the eye by a retinal prosthesis: modeling, cadaver and in vivo study. *IEEE Transactions on Biomedical Engineering*, **2012**, 59, 339-45	5	33
64	STDP encodes oscillation frequencies in the connections of recurrent networks of spiking neurons. *BMC Neuroscience*, **2012**, 13,	3.2	78
63	Modeling extracellular electrical stimulation: I. Derivation and interpretation of neurite equations. *Journal of Neural Engineering*, **2012**, 9, 065005	5	39
62	Frequency selectivity emerging from spike-timing-dependent plasticity. *Neural Computation*, **2012**, 24, 2251-79	2.9	14
61	Modeling extracellular electrical stimulation: II. Computational validation and numerical results. *Journal of Neural Engineering*, **2012**, 9, 065006	5	21
60	Spectral analysis of input spike trains by spike-timing-dependent plasticity. *PLoS Computational Biology*, **2012**, 8, e1002584	5	12
59	Retinal prosthesis safety: alterations in microglia morphology due to thermal damage and retinal implant contact **2012**, 53, 7802-12		23
58	Feature accentuation in phosphenated images. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2012**, 2012, 5915-8	0.9	1
57	Information theoretic inference of the optimal number of electrodes for future cochlear implants using a spiral cochlea model. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, 2012, 2012, 2915-8	0.9	4
56	Minimisation of required charge for desired neuronal spike rate. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2012**, 2012, 3009-12	0.9	1
55	Determining the electrical impedance of the retina from a complex voltage map. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2012**, 2012, 3005-8	0.9	1
54	An investigation of dendritic delay in octopus cells of the mammalian cochlear nucleus. *Frontiers in Computational Neuroscience*, **2012**, 6, 83	3.5	11
53	Sinusoidal Stimulation of Retinal Bipolar Cells: A Modelling Study **2012**,		2
52	Probing for cortical excitability. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2011**, 2011, 1644-7	0.9	1
51	Electrical probing of cortical excitability in patients with epilepsy. *Epilepsy and Behavior*, **2011**, 22 Suppl 1, S110-8	3.2	41

50	Exploring the tolerability of spatiotemporally complex electrical stimulation paradigms. *Epilepsy Research*, **2011**, 96, 267-75	3	30
49	Modelling intrinsic electrophysiological properties of ON and OFF retinal ganglion cells. *Journal of Computational Neuroscience*, **2011**, 31, 547-61	1.4	26
48	A bifurcation analysis of a modified neural field model: conductance-based synapses act as an anti-epileptic regulatory mechanism. *BMC Neuroscience*, **2011**, 12,	3.2	78
47	Learning a sparse code for temporal sequences using STDP and sequence compression. *Neural Computation*, **2011**, 23, 2567-98	2.9	20
46	Theoretical framework for estimating the conductivity map of the retina through finite element analysis. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2011**, 2011, 6721-4	0.9	1
45	Simulating electrical stimulation of degenerative retinal ganglion cells with bi-phasic pulse trains. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2011**, 2011, 7103-6	0.9	2
44	Predicting phosphene elicitation in patients with retinal implants: a mathematical study. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2011**, 2011, 6246-9	0.9	2
43	Closed-loop seizure control with very high frequency electrical stimulation at seizure onset in the GAERS model of absence epilepsy. *International Journal of Neural Systems*, **2011**, 21, 163-73	6.2	50
42	Differential stimulation of ON and OFF retinal ganglion cells: a modeling study. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2010**, 2010, 4246-9	0.9	3
41	Spiking neuron model for temporal sequence recognition. *Neural Computation*, **2010**, 22, 61-93	2.9	3
40	Thermal heating of a retinal prosthesis: thermal model and in-vitro study. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2010**, 2010, 1597-600	0.9	8
39	Representation of input structure in synaptic weights by spike-timing-dependent plasticity. *Physical Review E*, **2010**, 82, 021912	2.4	8
38	Viability of the inner retina in a novel mouse model of retinitis pigmentosa. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2010**, 2010, 553-6	0.9	2
37	Emergence of network structure due to spike-timing-dependent plasticity in recurrent neuronal networks V: self-organization schemes and weight dependence. *Biological Cybernetics*, **2010**, 103, 365-86	2.8	24
36	Across-frequency delays based on the cochlear traveling wave: enhanced speech presentation for cochlear implants. *IEEE Transactions on Biomedical Engineering*, **2010**, 57, 596-606	5	3
35	A Channel Model for Inferring the Optimal Number of Electrodes for Future Cochlear Implants. *IEEE Transactions on Information Theory*, **2010**, 56, 928-940	2.8	13
34	Seizure severity and duration in the cortical stimulation model of experimental epilepsy in rats: a longitudinal study. *Epilepsy Research*, **2010**, 89, 261-70	3	11
33	Patient-specific bivariate-synchrony-based seizure prediction for short prediction horizons. *Epilepsy Research*, **2010**, 91, 214-31	3	57

32	The effect of visual cues on auditory stream segregation in musicians and non-musicians. *PLoS ONE*, **2010**, 5, e11297	3.7	13
31	Emergence of network structure due to spike-timing-dependent plasticity in recurrent neuronal networks. I. Input selectivity--strengthening correlated input pathways. *Biological Cybernetics*, **2009** , 101, 81-102	2.8	58
30	Emergence of network structure due to spike-timing-dependent plasticity in recurrent neuronal networks. II. Input selectivity--symmetry breaking. *Biological Cybernetics*, **2009**, 101, 103-14	2.8	32
29	Emergence of network structure due to spike-timing-dependent plasticity in recurrent neuronal networks III: Partially connected neurons driven by spontaneous activity. *Biological Cybernetics*, **2009**, 101, 411-26	2.8	34
28	Emergence of network structure due to spike-timing-dependent plasticity in recurrent neuronal networks IV: structuring synaptic pathways among recurrent connections. *Biological Cybernetics*, **2009**, 101, 427-44	2.8	45
27	Seizure detection using seizure probability estimation: comparison of features used to detect seizures. *Annals of Biomedical Engineering*, **2009**, 37, 2129-45	4.7	39
26	Speech coding with traveling wave delays: Desynchronizing cochlear implant frequency bands with cochlea-like group delays. *Speech Communication*, **2009**, 51, 1114-1123	2.8	1
25	The thalamocortical circuit and the generation of epileptic spikes in rat models of focal epilepsy. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2009**, 2009, 1533-6	0.9	1
24	Spike-Timing Dependent Plasticity in Recurrently Connected Networks with Fixed External Inputs. *Lecture Notes in Computer Science*, **2008**, 102-111	0.9	
23	Transmission of spiking-rate information through layered networks: the role of recurrent and feedback connections. *BMC Neuroscience*, **2007**, 8,	3.2	78
22	Dynamically adjustable contrast enhancement from cortical background activity. *Neurocomputing*, **2005**, 65-66, 633-639	5.4	1
21	Spike-timing-dependent plasticity: the relationship to rate-based learning for models with weight dynamics determined by a stable fixed point. *Neural Computation*, **2004**, 16, 885-940	2.9	67
20	An analytical model for the "large, fluctuating synaptic conductance state" typical of neocortical neurons in vivo. *Journal of Computational Neuroscience*, **2004**, 16, 159-75	1.4	36
19	Ventral cochlear nucleus coding of voice onset time in naturally spoken syllables. *Hearing Research*, **2004**, 190, 37-59	3.9	6
18	Summation of spatiotemporal input patterns in leaky integrate-and-fire neurons: application to neurons in the cochlear nucleus receiving converging auditory nerve fiber input. *Journal of Computational Neuroscience*, **2002**, 12, 55-73	1.4	23
17	Shot noise in the leaky integrate-and-fire neuron. *Physical Review E*, **2001**, 63, 031902	2.4	47
16	Delay analysis in the auditory brainstem of the rat: comparison with click latency. *Hearing Research*, **2001**, 159, 85-100	3.9	18
15	Temporal processing from the auditory nerve to the medial nucleus of the trapezoid body in the rat. *Hearing Research*, **2001**, 159, 101-16	3.9	93

14	Intracellular responses of the rat cochlear nucleus to sound and its role in temporal coding. *NeuroReport*, **1997**, 8, 3415-21	1.7	22
13	Optimised attractor neural networks with external inputs. *Lecture Notes in Computer Science*, **1993**, 167-172	0.5	1
12	Parallel Algorithms for Statistical Physics Problems. *Topics in Applied Physics*, **1992**, 53-74	0.5	1
11	Parallel algorithms for statistical physics problems. *Topics in Applied Physics*, **1992**, 53-74	0.5	1
10	Geometrically Parallel Algorithms. *Springer Series in Information Sciences*, **1991**, 75-104		0
9	Computer Simulation Methods. *Springer Series in Information Sciences*, **1991**, 5-35		
8	System size dependence of the autocorrelation time for the Swendsen-Wang Ising model. *Physica A: Statistical Mechanics and Its Applications*, **1990**, 162, 210-214	3.3	72
7	Parallelization of the Ising model and its performance evaluation. *Parallel Computing*, **1990**, 13, 345-357	1	15
6	Parallelization of a cluster algorithm. *Computer Physics Communications*, **1989**, 54, 201-209	4.2	26
5	A cochlear implant speech processing strategy based on an auditory model		3
4	Spatiotemporal patterns of high-frequency activity (80-170 Hz) in long-term intracranial EEG		3
3	Learning an efficient hippocampal place map from entorhinal inputs using non-negative sparse coding		1
2	Predictive coding with neural transmission delays: a real-time temporal alignment hypothesis		3
1	Critical slowing as a biomarker for seizure susceptibility		4