

Steven J Schiff

List of Publications by Year in descending order

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133
papers

9,698
citations

38742

50
h-index

40979

93
g-index

148
all docs

148
docs citations

148
times ranked

7217
citing authors

#	ARTICLE	IF	CITATIONS
1	Controlling chaos in the brain. <i>Nature</i> , 1994, 370, 615-620.	27.8	898
2	Randomized Trial of Cerebrospinal Fluid Shunt Valve Design in Pediatric Hydrocephalus. <i>Neurosurgery</i> , 1998, 43, 294-303.	1.1	672
3	Synchronization and desynchronization in epilepsy: controversies and hypotheses. <i>Journal of Physiology</i> , 2013, 591, 787-797.	2.9	450
4	Spiral Waves in Disinhibited Mammalian Neocortex. <i>Journal of Neuroscience</i> , 2004, 24, 9897-9902.	3.6	355
5	Detecting dynamical interdependence and generalized synchrony through mutual prediction in a neural ensemble. <i>Physical Review E</i> , 1996, 54, 6708-6724.	2.1	344
6	Stochastic Resonance in a Neuronal Network from Mammalian Brain. <i>Physical Review Letters</i> , 1996, 77, 4098-4101.	7.8	316
7	Decreased Neuronal Synchronization during Experimental Seizures. <i>Journal of Neuroscience</i> , 2002, 22, 7297-7307.	3.6	294
8	Sensitivity of Neurons to Weak Electric Fields. <i>Journal of Neuroscience</i> , 2003, 23, 7255-7261.	3.6	252
9	Interneuron and Pyramidal Cell Interplay During In Vitro Seizure-Like Events. <i>Journal of Neurophysiology</i> , 2006, 95, 3948-3954.	1.8	246
10	The influence of sodium and potassium dynamics on excitability, seizures, and the stability of persistent states: I. Single neuron dynamics. <i>Journal of Computational Neuroscience</i> , 2009, 26, 159-170.	1.0	230
11	Adaptive Electric Field Control of Epileptic Seizures. <i>Journal of Neuroscience</i> , 2001, 21, 590-600.	3.6	193
12	Fast wavelet transformation of EEG. <i>Electroencephalography and Clinical Neurophysiology</i> , 1994, 91, 442-455.	0.3	185
13	Unification of Neuronal Spikes, Seizures, and Spreading Depression. <i>Journal of Neuroscience</i> , 2014, 34, 11733-11743.	3.6	183
14	The effects of temperature on synaptic transmission in hippocampal tissue slices. <i>Brain Research</i> , 1985, 345, 279-284.	2.2	144
15	Detecting Unstable Periodic Orbits in Chaotic Experimental Data. <i>Physical Review Letters</i> , 1996, 76, 4705-4708.	7.8	140
16	Costs and benefits of neurosurgical intervention for infant hydrocephalus in sub-Saharan Africa. <i>Journal of Neurosurgery: Pediatrics</i> , 2011, 8, 509-521.	1.3	140
17	Early Seizure Detection. <i>Journal of Clinical Neurophysiology</i> , 2001, 18, 259-268.	1.7	128
18	The influence of sodium and potassium dynamics on excitability, seizures, and the stability of persistent states: II. Network and glial dynamics. <i>Journal of Computational Neuroscience</i> , 2009, 26, 171-183.	1.0	125

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19	Brain chirps: spectrographic signatures of epileptic seizures. <i>Clinical Neurophysiology</i> , 2000, 111, 953-958.	1.5	124
20	High Dose Barbiturate Therapy in Neurosurgery and Intensive Care. <i>Neurosurgery</i> , 1984, 15, 427-444.	1.1	123
21	Endoscopic Treatment versus Shunting for Infant Hydrocephalus in Uganda. <i>New England Journal of Medicine</i> , 2017, 377, 2456-2464.	27.0	119
22	Dynamical Evolution of Spatiotemporal Patterns in Mammalian Middle Cortex. <i>Physical Review Letters</i> , 2007, 98, 178102.	7.8	108
23	Inflammation in acquired hydrocephalus: pathogenic mechanisms and therapeutic targets. <i>Nature Reviews Neurology</i> , 2020, 16, 285-296.	10.1	107
24	Neuronal spatiotemporal pattern discrimination: The dynamical evolution of seizures. <i>NeuroImage</i> , 2005, 28, 1043-1055.	4.2	106
25	Towards model-based control of Parkinson's disease. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2010, 368, 2269-2308.	3.4	105
26	Control of Traveling Waves in the Mammalian Cortex. <i>Physical Review Letters</i> , 2005, 94, 028103.	7.8	103
27	Extracting unstable periodic orbits from chaotic time series data. <i>Physical Review E</i> , 1997, 55, 5398-5417.	2.1	102
28	Observability and Controllability of Nonlinear Networks: The Role of Symmetry. <i>Physical Review X</i> , 2015, 5, .	8.9	100
29	Assimilating Seizure Dynamics. <i>PLoS Computational Biology</i> , 2010, 6, e1000776.	3.2	98
30	Kalman filter control of a model of spatiotemporal cortical dynamics. <i>Journal of Neural Engineering</i> , 2008, 5, 1-8.	3.5	97
31	Periodic Orbits: A New Language for Neuronal Dynamics. <i>Biophysical Journal</i> , 1998, 74, 2776-2785.	0.5	94
32	Hyperexcitability following moderate hypoxia in hippocampal tissue slices. <i>Brain Research</i> , 1985, 337, 337-340.	2.2	92
33	A Model of the Effects of Applied Electric Fields on Neuronal Synchronization. <i>Journal of Computational Neuroscience</i> , 2005, 19, 53-70.	1.0	88
34	Seizures as imbalanced up states: excitatory and inhibitory conductances during seizure-like events. <i>Journal of Neurophysiology</i> , 2013, 109, 1296-1306.	1.8	87
35	Exome sequencing implicates genetic disruption of prenatal neuro-gliogenesis in sporadic congenital hydrocephalus. <i>Nature Medicine</i> , 2020, 26, 1754-1765.	30.7	84
36	Dangerous Phase. <i>Neuroinformatics</i> , 2005, 3, 315-318.	2.8	80

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37	Economic burden of neonatal sepsis in sub-Saharan Africa. <i>BMJ Global Health</i> , 2018, 3, e000347.	4.7	78
38	Tracking and control of neuronal Hodgkin-Huxley dynamics. <i>Physical Review E</i> , 2009, 79, 040901.	2.1	76
39	Time-related patterns of ventricular shunt failure. <i>Child's Nervous System</i> , 1994, 10, 524-528.	1.1	74
40	Five-year survival and outcome of treatment for postinfectious hydrocephalus in Ugandan infants. <i>Journal of Neurosurgery: Pediatrics</i> , 2011, 8, 502-508.	1.3	74
41	Oxygen and seizure dynamics: II. Computational modeling. <i>Journal of Neurophysiology</i> , 2014, 112, 213-223.	1.8	73
42	Interplay of Electroencephalogram Phase and Auditory-Evoked Neural Activity. <i>Journal of Neuroscience</i> , 2003, 23, 10122-10127.	3.6	72
43	The Role of Cell Volume in the Dynamics of Seizure, Spreading Depression, and Anoxic Depolarization. <i>PLoS Computational Biology</i> , 2015, 11, e1004414.	3.2	72
44	Congenital Cytomegalovirus Infection Burden and Epidemiologic Risk Factors in Countries With Universal Screening. <i>JAMA Network Open</i> , 2021, 4, e2120736.	5.9	71
45	Neural Control Engineering. , 2011, , .		70
46	In Vivo Modulation of Hippocampal Epileptiform Activity with Radial Electric Fields. <i>Epilepsia</i> , 2003, 44, 768-777.	5.1	65
47	Controversies in epilepsy: Debates held during the Fourth International Workshop on Seizure Prediction. <i>Epilepsy and Behavior</i> , 2010, 19, 4-16.	1.7	61
48	Quinolinic acid in tumors, hemorrhage and bacterial infections of the central nervous system in children. <i>Journal of the Neurological Sciences</i> , 1995, 133, 112-118.	0.6	59
49	Rapid Eye Movement Sleep and Hippocampal Theta Oscillations Precede Seizure Onset in the Tetanus Toxin Model of Temporal Lobe Epilepsy. <i>Journal of Neuroscience</i> , 2014, 34, 1105-1114.	3.6	59
50	Selective neuronal vulnerability to hypoxia in vitro. <i>Neuroscience Letters</i> , 1986, 67, 92-96.	2.1	58
51	Volumetric brain analysis in neurosurgery: Part 2. Brain and CSF volumes discriminate neurocognitive outcomes in hydrocephalus. <i>Journal of Neurosurgery: Pediatrics</i> , 2015, 15, 125-132.	1.3	54
52	Modulation of hippocampal rhythms by subthreshold electric fields and network topology. <i>Journal of Computational Neuroscience</i> , 2013, 34, 369-389.	1.0	50
53	Forecasting brain storms. <i>Nature Medicine</i> , 1998, 4, 1117-1118.	30.7	46
54	The Microbial Spectrum of Neonatal Sepsis in Uganda: Recovery of Culturable Bacteria in Mother-Infant Pairs. <i>PLoS ONE</i> , 2013, 8, e72775.	2.5	45

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55	Multivariate linear discrimination of seizures. <i>Clinical Neurophysiology</i> , 2005, 116, 545-551.	1.5	43
56	Association of bacteria with hydrocephalus in Ugandan infants. <i>Journal of Neurosurgery: Pediatrics</i> , 2011, 7, 73-87.	1.3	43
57	Advances in the Application of Technology to Epilepsy: The CIMIT/NIO Epilepsy Innovation Summit. <i>Epilepsy and Behavior</i> , 2009, 16, 3-46.	1.7	41
58	Global, regional and national epidemiology and prevalence of child stunting, wasting and underweight in low- and middle-income countries, 2006–2018. <i>Scientific Reports</i> , 2021, 11, 5204.	3.3	41
59	Differentiation of linearly correlated noise from chaos in a biologic system using surrogate data. <i>Biological Cybernetics</i> , 1992, 67, 387-393.	1.3	39
60	Learning Based Segmentation of CT Brain Images: Application to Postoperative Hydrocephalic Scans. <i>IEEE Transactions on Biomedical Engineering</i> , 2018, 65, 1871-1884.	4.2	39
61	<i>Paenibacillus</i> infection with frequent viral coinfection contributes to postinfectious hydrocephalus in Ugandan infants. <i>Science Translational Medicine</i> , 2020, 12, .	12.4	39
62	Deep MR Brain Image Super-Resolution Using Spatio-Structural Priors. <i>IEEE Transactions on Image Processing</i> , 2020, 29, 1368-1383.	9.8	37
63	FRET excited ratiometric oxygen sensing in living tissue. <i>Journal of Neuroscience Methods</i> , 2013, 214, 45-51.	2.5	36
64	Role of Multiple-Scale Modeling of Epilepsy in Seizure Forecasting. <i>Journal of Clinical Neurophysiology</i> , 2015, 32, 220-226.	1.7	36
65	Spreading depression as an innate antiseizure mechanism. <i>Nature Communications</i> , 2021, 12, 2206.	12.8	36
66	Improved sleep–wake and behavior discrimination using MEMS accelerometers. <i>Journal of Neuroscience Methods</i> , 2007, 163, 373-383.	2.5	35
67	Oxygen and seizure dynamics: I. Experiments. <i>Journal of Neurophysiology</i> , 2014, 112, 205-212.	1.8	35
68	Volumetric brain analysis in neurosurgery: Part 1. Particle filter segmentation of brain and cerebrospinal fluid growth dynamics from MRI and CT images. <i>Journal of Neurosurgery: Pediatrics</i> , 2015, 15, 113-124.	1.3	32
69	Design of a sustainable prepolarizing magnetic resonance imaging system for infant hydrocephalus. <i>Magnetic Resonance Materials in Physics, Biology, and Medicine</i> , 2018, 31, 665-676.	2.0	32
70	Reflex variability in selective dorsal rhizotomy. <i>Journal of Neurosurgery</i> , 1993, 79, 346-353.	1.6	30
71	Resolving time-series structure with a controlled wavelet transform. <i>Optical Engineering</i> , 1992, 31, 2492.	1.0	29
72	Reconstructing Mammalian Sleep Dynamics with Data Assimilation. <i>PLoS Computational Biology</i> , 2012, 8, e1002788.	3.2	29

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73	From Generalized Synchrony to Topological Decoherence: Emergent Sets in Coupled Chaotic Systems. <i>Physical Review Letters</i> , 2000, 84, 1689-1692.	7.8	28
74	Rainfall drives hydrocephalus in East Africa. <i>Journal of Neurosurgery: Pediatrics</i> , 2012, 10, 161-167.	1.3	27
75	Changes in Ugandan Climate Rainfall at the Village and Forest Level. <i>Scientific Reports</i> , 2018, 8, 3551.	3.3	27
76	Normative human brain volume growth. <i>Journal of Neurosurgery: Pediatrics</i> , 2018, 21, 478-485.	1.3	25
77	Delayed Cerebrospinal-Fluid Shunt Infection in Children. <i>Pediatric Neurosurgery</i> , 1989, 15, 131-135.	0.7	24
78	Design of a mobile, homogeneous, and efficient electromagnet with a large field of view for neonatal low-field MRI. <i>Magnetic Resonance Materials in Physics, Biology, and Medicine</i> , 2016, 29, 691-698.	2.0	24
79	A surgeon's risk of AIDS. <i>Journal of Neurosurgery</i> , 1990, 73, 651-660.	1.6	23
80	The dynamics of brain and cerebrospinal fluid growth in normal versus hydrocephalic mice. <i>Journal of Neurosurgery: Pediatrics</i> , 2010, 6, 1-10.	1.3	23
81	Intracerebral Extension of Nasal Dermoid Cyst. <i>Journal of Computer Assisted Tomography</i> , 1989, 13, 1061-1064.	0.9	22
82	Failure of single-unit neuronal activity to differentiate globus pallidus internus and externus in Parkinson disease. <i>Journal of Neurosurgery</i> , 2002, 97, 119-128.	1.6	22
83	Pan-African evolution of within- and between-country COVID-19 dynamics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	22
84	The use of computed tomography-guided stereotactic techniques in the treatment of brain stem abscesses. <i>Clinical Neurology and Neurosurgery</i> , 1988, 90, 365-368.	1.4	21
85	Data assimilation for heterogeneous networks: The consensus set. <i>Physical Review E</i> , 2009, 79, 051909.	2.1	21
86	Barbiturate protection against hypoxic neuronal damage in vitro. <i>Journal of Neurosurgery</i> , 1986, 65, 230-232.	1.6	20
87	Kalman meets neuron: The emerging intersection of control theory with neuroscience. , 2009, 2009, 3318-21.		20
88	Looking for chaos in brain slices. <i>Journal of Neuroscience Methods</i> , 1995, 59, 41-48.	2.5	18
89	Detecting Coupling in the Presence of Noise and Nonlinearity. , 0, , 265-282.		18
90	Acceptance of brain-computer interfaces in amyotrophic lateral sclerosis. <i>Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration</i> , 2015, 16, 258-264.	1.7	18

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91	Use of recombinant human erythropoietin to avoid blood transfusion in a Jehovah's Witness requiring hemispherectomy. <i>Journal of Neurosurgery</i> , 1993, 79, 600-602.	1.6	17
92	The Problem of Microbial Dark Matter in Neonatal Sepsis. <i>Emerging Infectious Diseases</i> , 2020, 26, 2543-2548.	4.3	17
93	Overshoot of oxygen pressure in post-hypoxic brain tissue: a re-evaluation. <i>Brain Research</i> , 1985, 344, 150-153.	2.2	16
94	Deep Learning Applications for Acute Stroke Management. <i>Annals of Neurology</i> , 2022, 92, 574-587.	5.3	16
95	Switching between gamma and theta: Dynamic network control using subthreshold electric fields. <i>Neurocomputing</i> , 2007, 70, 2091-2095.	5.9	15
96	A Brain-Heart Biomarker for Epileptogenesis. <i>Journal of Neuroscience</i> , 2018, 38, 8473-8483.	3.6	15
97	Brain growth after surgical treatment for infant postinfectious hydrocephalus in Sub-Saharan Africa: 2-year results of a randomized trial. <i>Journal of Neurosurgery: Pediatrics</i> , 2021, 28, 326-334.	1.3	15
98	Normal childhood brain growth and a universal sex and anthropomorphic relationship to cerebrospinal fluid. <i>Journal of Neurosurgery: Pediatrics</i> , 2021, 28, 458-468.	1.3	15
99	Chip-scale high Q-factor glassblown microspherical shells for magnetic sensing. <i>AIP Advances</i> , 2018, 8, 065214.	1.3	14
100	An experimental study of reflex variability in selective dorsal rhizotomy. <i>Journal of Neurosurgery</i> , 1994, 81, 885-894.	1.6	13
101	The role of inhibition in oscillatory wave dynamics in the cortex. <i>European Journal of Neuroscience</i> , 2012, 36, 2201-2212.	2.6	13
102	A Murine Model to Study Epilepsy and SUDEP Induced by Malaria Infection. <i>Scientific Reports</i> , 2017, 7, 43652.	3.3	12
103	Kalman filter tracking of intracellular neuronal voltage and current. , 2011, , .		11
104	Expansion mini-microscopy: An enabling alternative in point-of-care diagnostics. <i>Current Opinion in Biomedical Engineering</i> , 2017, 1, 45-53.	3.4	11
105	Glutamine can enhance synaptic transmission in hippocampal slices. <i>Brain Research</i> , 1985, 343, 366-369.	2.2	10
106	Toward a Model-Based Predictive Controller Design in Brain-Computer Interfaces. <i>Annals of Biomedical Engineering</i> , 2011, 39, 1482-1492.	2.5	10
107	Complete Genome Sequences of the Human Pathogen <i>Paenibacillus thiaminolyticus</i> Mbale and Type Strain P. <i>thiaminolyticus</i> NRRL B-4156. <i>Microbiology Resource Announcements</i> , 2020, 9, .	0.6	10
108	Immune activation during <i>Paenibacillus</i> brain infection in African infants with frequent cytomegalovirus co-infection. <i>IScience</i> , 2021, 24, 102351.	4.1	10

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109	Separating Putative Pathogens from Background Contamination with Principal Orthogonal Decomposition: Evidence for Leptospira in the Ugandan Neonatal Septisome. <i>Frontiers in Medicine</i> , 2016, 3, 22.	2.6	8
110	Prevalence and correlates of MRSA and MSSA nasal carriage at a Ugandan regional referral hospital. <i>Journal of Antimicrobial Chemotherapy</i> , 2016, 72, dkw472.	3.0	8
111	Control of Spreading Depression with Electrical Fields. <i>Scientific Reports</i> , 2018, 8, 8769.	3.3	8
112	The Incidence of Postoperative Seizures Following Treatment of Postinfectious Hydrocephalus in Ugandan Infants: A Post Hoc Comparison of Endoscopic Treatment vs Shunt Placement in a Randomized Controlled Trial. <i>Neurosurgery</i> , 2019, 85, E714-E721.	1.1	8
113	Frequency dependence of behavioral modulation by hippocampal electrical stimulation. <i>Journal of Neurophysiology</i> , 2014, 111, 470-480.	1.8	7
114	Volumetric brain analysis in neurosurgery: Part 3. Volumetric CT analysis as a predictor of seizure outcome following temporal lobectomy. <i>Journal of Neurosurgery: Pediatrics</i> , 2015, 15, 133-143.	1.3	7
115	Poisson Kalman filter for disease surveillance. <i>Physical Review Research</i> , 2020, 2, .	3.6	6
116	Vaginal microbiome topic modeling of laboring Ugandan women with and without fever. <i>Npj Biofilms and Microbiomes</i> , 2021, 7, 75.	6.4	5
117	Deep Mr Image Super-Resolution Using Structural Priors. , 2018, 2018, 410-414.		4
118	Approaches in cooling of resistive coil-based low-field Magnetic Resonance Imaging (MRI) systems for application in low resource settings. <i>BMC Biomedical Engineering</i> , 2021, 3, 3.	2.6	4
119	Assessing the utility of low resolution brain imaging: treatment of infant hydrocephalus. <i>NeuroImage: Clinical</i> , 2021, 32, 102896.	2.7	4
120	Learning based image segmentation of post-operative CT-images: A hydrocephalus case study. , 2017, , .		3
121	An Unmatched Radio Frequency Chain for Low-Field Magnetic Resonance Imaging. <i>Frontiers in Physics</i> , 2022, 9, .	2.1	3
122	mirTarRnaSeq: An R/Bioconductor Statistical Package for miRNA-mRNA Target Identification and Interaction Analysis. <i>BMC Genomics</i> , 2022, 23, .	2.8	3
123	Estimation of internal variables from Hodgkin-Huxley neuron voltage. , 2013, , .		2
124	Effects of symmetry on the structural controllability of neural networks: A perspective. , 2016, 2016, 5785-5790.		2
125	Preoperative risk and postoperative outcome from subdural fluid collections in African infants with postinfectious hydrocephalus. <i>Journal of Neurosurgery: Pediatrics</i> , 2022, 29, 31-39.	1.3	2
126	Improving Infant Hydrocephalus Outcomes in Uganda: A Longitudinal Prospective Study Protocol for Predicting Developmental Outcomes and Identifying Patients at Risk for Early Treatment Failure after ETV/CPC. <i>Metabolites</i> , 2022, 12, 78.	2.9	2

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127	Cytomegalovirus Infections in Ugandan Infants: Newborn-Mother Pairs, Neonates with Sepsis, and Infants with Hydrocephalus. <i>International Journal of Infectious Diseases</i> , 2022, , .	3.3	2
128	Differentiability implies continuity in neuronal dynamics. <i>Physica D: Nonlinear Phenomena</i> , 2001, 148, 175-181.	2.8	1
129	Fully optimized discrimination of physiological responses to auditory stimuli. <i>Journal of Neural Engineering</i> , 2008, 5, 133-143.	3.5	1
130	Optimization of Metglas 2605SA1 and PZT-5A magnetoelectric laminates for magnetic sensing applications. , 2016, 2016, .		1
131	Expansion of C9ORF72 in amyotrophic lateral sclerosis correlates with brain-computer interface performance. <i>Scientific Reports</i> , 2017, 7, 8875.	3.3	1
132	Global and Regional Congenital Cytomegalovirus (CMV) Epidemiology and Burden: Systematic Review and Meta-Analysis. <i>SSRN Electronic Journal</i> , 0, , .	0.4	1
133	Towards model-based control of Parkinson's disease: A perspective. , 2011, , .		0