Ronald Tetzlaff

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

121 papers	1,211 citations	18 h-index	29 g-index
154 ext. papers	1,588 ext. citations	3.4 avg, IF	5.04 L-index

#	Paper	IF	Citations
121	Edge of Chaos Theory Resolves Smale Paradox. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2022**, 1-14	3.9	9
120	Towards Simplified Physics-based Memristor Modeling of Valence Change Mechanism Devices. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2022**, 1-1	3.5	3
119	Registration of IRT and visible light images in neurosurgery: analysis and comparison of automatic intensity-based registration approaches.. *International Journal of Computer Assisted Radiology and Surgery*, **2022**, 17, 683	3.9	
118	Sniffbots to the Rescue Fog Services for a Gas-Sniffing Immersive Robot Collective. *Lecture Notes in Computer Science*, **2022**, 3-28	0.9	
117	Graph Coloring via Locally-Active Memristor Oscillatory Networks. *Journal of Low Power Electronics and Applications*, **2022**, 12, 22	1.7	5
116	On the chaotic nature of random telegraph noise in unipolar RRAM memristor devices. *Chaos, Solitons and Fractals*, **2022**, 160, 112224	9.3	0
115	Pattern Formation in an M-CNN Structure Utilizing a Locally Active NbOx Memristor **2022**, 79-101		0
114	Coherent false seizure prediction in epilepsy, coincidence or providence?. *Clinical Neurophysiology*, **2021**, 133, 157-157	4.3	0
113	How to Build a Memristive Integrate-and-Fire Model for Spiking Neuronal Signal Generation. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2021**, 68, 4837-4850	3.9	9
112	NbO2-Mott Memristor: A Circuit- Theoretic Investigation. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2021**, 68, 4979-4992	3.9	11
111	A Compact and Continuous Reformulation of the Strachan TaOx Memristor Model With Improved Numerical Stability. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2021**, 1-12	3.9	2
110	On Local Activity and Edge of Chaos in a NaMLab Memristor. *Frontiers in Neuroscience*, **2021**, 15, 651452	5.1	28
109	System-Theoretic Methods for Designing Bio-Inspired Mem-Computing Memristor Cellular Nonlinear Networks. *Frontiers in Nanotechnology*, **2021**, 3,	5.5	4
108	Selective and self-validating breath-level detection of hydrogen sulfide in humid air by gold nanoparticle-functionalized nanotube arrays. *Nano Research*, **2021**, 1-10	10	4
107	A Compact Memristor Model for Neuromorphic ReRAM Devices in Flux-Charge Space. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2021**, 68, 3631-3641	3.9	5
106	Motion correction for IRT imaging in neurosurgery: Analysis and comparison of frequency-/filter- and intensity-based approaches. *Infrared Physics and Technology*, **2021**, 117, 103804	2.7	1
105	Improved Vertex Coloring With NbOx Memristor-Based Oscillatory Networks. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2021**, 1-14	3.9	8

104	Tactile electronics **2021**, 277-292		1
103	A Simple Monte Carlo Model for the Cycle-to-Cycle Reset Transition Variation of ReRAM Memristive Devices **2020**,		4
102	A New CNN Occlusion Masking Method for IRT Imaging in Neurosurgery **2020**,		1
101	Experimental evaluation of the dynamic route map in the reset transition of memristive ReRAMs. *Chaos, Solitons and Fractals*, **2020**, 139, 110288	9.3	12
100	Theoretical Foundations of Memristor Cellular Nonlinear Networks: A DRM2-Based Method to Design Memcomputers With Dynamic Memristors. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2020**, 67, 2753-2766	3.9	27
99	Motion Correction in Multimodal Intraoperative Imaging. *IEEE Transactions on Biomedical Circuits and Systems*, **2020**, 14, 671-680	5.1	0
98	A Flux-Controlled Memristor Model for Neuromorphic ReRAM Devices **2020**,		3
97	Intrinsic plasticity of silicon nanowire neurotransistors for dynamic memory and learning functions. *Nature Electronics*, **2020**, 3, 398-408	28.4	14
96	Theoretical Foundations of Memristor Cellular Nonlinear Networks: Stability Analysis With Dynamic Memristors. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2020**, 67, 1389-1401	3.9	26
95	A Simple Memristor Model for Neuromorphic ReRAM Devices **2020**,		6
94	A robust optical flow motion estimation and correction method for IRT imaging in brain surgery. *Quantitative InfraRed Thermography Journal*, **2020**, 1-26	1.1	2
93	Theoretical Foundations of Memristor Cellular Nonlinear Networks: Memcomputing With Bistable-Like Memristors. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2020**, 67, 502-515	3.9	27
92	Edge of Chaos in Nanoscale Memristor CNN **2019**,		4
91	Multiple slopes in the negative differential resistance region of NbO x -based threshold switches. *Journal Physics D: Applied Physics*, **2019**, 52, 325104	3	10
90	Improvement of NbO x -based threshold switching devices by implementing multilayer stacks. *Semiconductor Science and Technology*, **2019**, 34, 075005	1.8	4
89	Pattern Formation With Locally Active S-Type NbOx Memristors. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2019**, 66, 2627-2638	3.9	22
88	Evaluation of machine learning methods for seizure prediction in epilepsy. *Current Directions in Biomedical Engineering*, **2019**, 5, 109-112	0.5	2
87	Synapse as a Memristor **2019**, 351-367		1

86	Memristor CNNs with Hysteresis. *Studies in Computational Intelligence*, **2019**, 383-394	0.8	2
85	Programmable Emulator of Genuinely Floating Memristive Switching Devices **2019**,		1
84	Motion Correction for Thermography using Co-registered Visual-Light Images **2019**,		1
83	An Improved Cellular Nonlinear Network Architecture for Binary and Grayscale Image Processing. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2018**, 65, 1084-1088	3.5	9
82	[From the Guest Editors]. *IEEE Circuits and Systems Magazine*, **2018**, 18, 5-6	3.2	
81	Exploring the Dynamics of Real-World Memristors on the Basis of Circuit Theoretic Model Predictions. *IEEE Circuits and Systems Magazine*, **2018**, 18, 48-76	3.2	10
80	Architectures for Intraoperative Image Fusion in Brain Surgery **2018**,		1
79	Requirements and Challenges for Modelling Redox-based Memristive Devices **2018**,		8
78	Memristor-enhanced humanoid robot control system Part II: Circuit theoretic model and performance analysis. *International Journal of Circuit Theory and Applications*, **2018**, 46, 184-220	2	13
77	Memristor-enhanced humanoid robot control system Part I: Theory behind the novel memcomputing paradigm. *International Journal of Circuit Theory and Applications*, **2018**, 46, 155-183	2	13
76	Ultrasensitive detection of Ebola matrix protein in a memristor mode. *Nano Research*, **2018**, 11, 1057-1068	10	23
75	About v-i Pinched Hysteresis of Some Non-Memristive Systems. *Mathematical Problems in Engineering*, **2018**, 2018, 1-10	1.1	5
74	Multilevel Interpolation for Feature-based Motion Correction in Neurosurgery **2018**,		2
73	Convolutional Neural Networks for Epileptic Seizure Prediction **2018**,		14
72	Seizure Prediction by Multivariate Autoregressive Model Order Optimization. *Current Directions in Biomedical Engineering*, **2018**, 4, 395-398	0.5	2
71	Efficient feature-based motion estimation in neurosurgery using non-maximum suppression. *Current Directions in Biomedical Engineering*, **2018**, 4, 555-558	0.5	2
70	Intraoperative motion correction in neurosurgery: a comparison of intensity- and feature-based methods. *Biomedizinische Technik*, **2018**, 63, 573-578	1.3	1
69	Registration and Fusion of Thermographic and Visual-Light Images in Neurosurgery. *IEEE Transactions on Biomedical Circuits and Systems*, **2018**, 12, 1313-1321	5.1	10

68	Analysis of memristors with nonlinear memristance versus state maps. *International Journal of Circuit Theory and Applications*, **2017**, 45, 1814-1832	2	5
67	Edge of chaos in reaction diffusion CNN model. *Open Mathematics*, **2017**, 15, 21-29	0.8	5
66	Continuous and Differentiable Approximation of a TaO Memristor Model for Robust Numerical Simulations. *Springer Proceedings in Physics*, **2017**, 61-69	0.2	6
65	Closed-form analytical solution for on-switching dynamics in a TaO memristor. *Electronics Letters*, **2017**, 53, 1125-1126	1.1	11
64	Transformation techniques applied to a TaO memristor model to enable stable device simulations **2017**,		5
63	An intraoperative imaging system for neurosurgical thermography **2017**,		4
62	Motion estimation and correction for thermographic imaging in brain surgery **2017**,		2
61	The First Ever Real Bistable Memristors Part I: Theoretical Insights on Local Fading Memory. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2016**, 63, 1091-1095	3.5	19
60	A Cellular Network Architecture With Polynomial Weight Functions. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2016**, 24, 353-357	2.6	3
59	Generalized boundary condition memristor model. *International Journal of Circuit Theory and Applications*, **2016**, 44, 60-84	2	39
58	NEROvideo: a general-purpose CNN-UM video processing system. *Journal of Real-Time Image Processing*, **2016**, 12, 763-774	1.9	7
57	Real-time artefact filter for intraoperative thermographic imaging **2016**,		6
56	History Erase Effect in a Non-Volatile Memristor. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2016**, 63, 389-400	3.9	39
55	New Signal Processing Methods for the Development of Seizure Warning Devices in Epilepsy. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2016**, 63, 609-616	3.9	5
54	Memristors - Devices, Models, Circuits, Systems and Applications *International Journal of Circuit Theory and Applications*, **2016**, 44, 1478-1479	2	1
53	The First Ever Real Bistable Memristors Part II: Design and Analysis of a Local Fading Memory System. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2016**, 63, 1096-1100	3.5	16
52	A class of versatile circuits, made up of standard electrical components, are memristors. *International Journal of Circuit Theory and Applications*, **2016**, 44, 127-146	2	32
51	Robust Simulation of a TaO Memristor Model. *Radioengineering*, **2015**, 24, 384-392	0.8	19

50	Synchronization conditions in simple memristor neural networks. *Journal of the Franklin Institute*, **2015**, 352, 3196-3220	4	21
49	Nonlinear Dynamics of a Locally-Active Memristor. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2015**, 62, 1165-1174	3.9	92
48	Complex behavior in memristor circuits based on static nonlinear two-ports and dynamic bipole **2015**,		2
47	Physical model of threshold switching in NbO2 based memristors. *RSC Advances*, **2015**, 5, 102318-102323	3.7	100
46	Neuronal synapse as a memristor: modeling pair- and triplet-based STDP rule. *IEEE Transactions on Biomedical Circuits and Systems*, **2015**, 9, 87-95	5.1	28
45	Cellular nonlinear network-based signal prediction in epilepsy: Method comparison **2015**,		2
44	The Art of Finding Accurate Memristor Model Solutions. *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, **2015**, 5, 133-142	5.2	44
43	Motion correction of thermographic images in neurosurgery **2015**,		2
42	Synchronization properties of a bio-inspired neural network **2015**,		1
41	CNN based movement correction in thermography for intrasurgical diagnostics **2014**,		2
40	Beyond series and parallel: Coupling as a third relation in memristive systems **2014**,		10
39	Motion correction of thermographic images in neurosurgery: Performance comparison **2014**,		7
38	A new high-speed real-time video processing platform **2014**,		3
37	Memristor for Neuromorphic Applications: Models and Circuit Implementations **2014**, 379-403		4
36	Hierarchical description and analysis of CNN algorithms **2014**,		4
35	Modelling brain electrical activity by reaction diffusion cellular nonlinear networks (RD-CNN) in laplace domain **2014**,		3
34	Memristor plasticity enables emergence of synchronization in neuromorphic networks **2014**,		2
33	Unfolding the Threshold Switching Behavior of a Memristor. *Communications in Computer and Information Science*, **2014**, 156-164	0.3	5

32	Cellular Neural Networks Proposed for Image Predictive Coding. *Communications in Computer and Information Science*, **2014**, 237-245	0.3	
31	Application of the Volterra Series Paradigm to Memristive Systems **2014**, 163-191		9
30	Analysis of multi-memristor circuits **2013**,		1
29	PSpice switch-based versatile memristor model **2013**,		12
28	NERO mastering 300k CNN cells **2013**,		9
27	ANALYTICAL ANALYSIS OF MEMRISTIVE NETWORKS **2013**, 529-539		
26	Memristor Model Comparison. *IEEE Circuits and Systems Magazine*, **2013**, 13, 89-105	3.2	116
25	Adaptive Neuromorphic Architecture (ANA). *Neural Networks*, **2013**, 45, 111-6	9.1	24
24	Complex dynamics in neuromorphic memristor circuits **2013**,		2
23	[From the Guest Editors]. *IEEE Circuits and Systems Magazine*, **2013**, 13, 4-6	3.2	
22	Advanced memristive model of synapses with adaptive thresholds **2012**,		6
21	CESAR: Emulating Cellular Networks on FPGA **2012**,		5
20	Memristors and memristive circuits - an overview **2012**,		7
19	The Seizure Prediction Problem in Epilepsy: Cellular Nonlinear Networks. *IEEE Circuits and Systems Magazine*, **2012**, 12, 8-20	3.2	11
18	**2011**,		5
17	CNN computing of the interaction of fluxons **2011**,		3
16	A new cellular nonlinear network emulation on FPGA for EEG signal processing in epilepsy **2011**,		3
15	Spatio-temporal coupling of EEG signals in epilepsy **2011**,		3

14	Real-Time Control of Laser Beam Welding Processes: Reality **2011**, 261-281		4
13	Cellular Neural Network (CNN) based control algorithms for omnidirectional laser welding processes: Experimental results **2010**,		3
12	Omnidirectional algorithm for the full penetration hole extraction in laser welding processes **2009**,		6
11	New CNN based algorithms for the full penetration hole extraction in laser welding processes **2009** ,		5
10	New CNN based algorithms for the full penetration hole extraction in laser welding processes: Experimental results. **2009**,		9
9	Spatio-temporal analysis of brain electrical activity in epilepsy based on cellular nonlinear networks **2009**,		4
8	Feature extraction in laser welding processes **2008**,		8
7	Analysis of EEG-signals in epilepsy: Spatio-temporal models **2008**,		1
6	Toward an autonomous platform for spatio-temporal EEG-signal analysis based on cellular nonlinear networks. *International Journal of Circuit Theory and Applications*, **2008**, 36, 623-639	2	5
5	Prediction Error Profiles allowing a Seizure Forecasting in Epilepsy ? **2006**,		4
4	Semi-Totalistic CNN Genes for Compact Image Compression **2006**,		2
3	Pattern Formation in a RD-MCNN with Locally Active Memristors		1
2	Mathematical Analysis of Memristor CNN		4
1	Theory and Technology of Memristive Devices1-35		