

Ronald Tetzlaff

List of Publications by Year in descending order

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Version: 2024-02-01

150
papers

1,940
citations

304743

22
h-index

315739

38
g-index

154
all docs

154
docs citations

154
times ranked

1308
citing authors

#	ARTICLE	IF	CITATIONS
1	Memristor Model Comparison. IEEE Circuits and Systems Magazine, 2013, 13, 89-105.	2.3	158
2	Nonlinear Dynamics of a Locally-Active Memristor. IEEE Transactions on Circuits and Systems I: Regular Papers, 2015, 62, 1165-1174.	5.4	139
3	Physical model of threshold switching in NbO ₂ based memristors. RSC Advances, 2015, 5, 102318-102322.	3.6	125
4	The Art of Finding Accurate Memristor Model Solutions. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2015, 5, 133-142.	3.6	65
5	On Local Activity and Edge of Chaos in a NaMLab Memristor. Frontiers in Neuroscience, 2021, 15, 651452.	2.8	63
6	History Erase Effect in a Non-Volatile Memristor. IEEE Transactions on Circuits and Systems I: Regular Papers, 2016, 63, 389-400.	5.4	60
7	Generalized boundary condition memristor model. International Journal of Circuit Theory and Applications, 2016, 44, 60-84.	2.0	59
8	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.	5.4	49
9	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.	5.4	46
10	A class of versatile circuits, made up of standard electrical components, are memristors. International Journal of Circuit Theory and Applications, 2016, 44, 127-146.	2.0	44
11	Theoretical Foundations of Memristor Cellular Nonlinear Networks: A DRM ₂ -Based Method to Design Memcomputers With Dynamic Memristors. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 2753-2766.	5.4	44
12	Ultrasensitive detection of Ebola matrix protein in a memristor mode. Nano Research, 2018, 11, 1057-1068.	10.4	43
13	Neuronal Synapse as a Memristor: Modeling Pair- and Triplet-Based STDP Rule. IEEE Transactions on Biomedical Circuits and Systems, 2015, 9, 87-95.	4.0	39
14	Pattern Formation With Locally Active S-Type NbO _x Memristors. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 2627-2638.	5.4	37
15	Intrinsic plasticity of silicon nanowire neurotransistors for dynamic memory and learning functions. Nature Electronics, 2020, 3, 398-408.	26.0	37
16	Adaptive Neuromorphic Architecture (ANA). Neural Networks, 2013, 45, 111-116.	5.9	35
17	Synchronization conditions in simple memristor neural networks. Journal of the Franklin Institute, 2015, 352, 3196-3220.	3.4	30
18	Convolutional Neural Networks for Epileptic Seizure Prediction. , 2018, , .		30

#	ARTICLE	IF	CITATIONS
19	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.	5.4	30
20	Robust Simulation of a TaO Memristor Model. Radioengineering, 2015, 24, 384-392.	0.6	29
21	Edge of Chaos Theory Resolves Smale Paradox. IEEE Transactions on Circuits and Systems I: Regular Papers, 2022, 69, 1252-1265.	5.4	28
22	NbO ₂ -Mott Memristor: A Circuit- Theoretic Investigation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4979-4992.	5.4	27
23	The First Ever Real Bistable Memristorsâ€”Part I: Theoretical Insights on Local Fading Memory. IEEE Transactions on Circuits and Systems II: Express Briefs, 2016, 63, 1091-1095.	3.0	25
24	The First Ever Real Bistable Memristorsâ€”Part II: Design and Analysis of a Local Fading Memory System. IEEE Transactions on Circuits and Systems II: Express Briefs, 2016, 63, 1096-1100.	3.0	21
25	Selective and self-validating breath-level detection of hydrogen sulfide in humid air by gold nanoparticle-functionalized nanotube arrays. Nano Research, 2022, 15, 2512-2521.	10.4	21
26	Memristorâ€”enhanced humanoid robot control system â€” Part I: Theory behind the novel memcomputing paradigm. International Journal of Circuit Theory and Applications, 2018, 46, 155-183.	2.0	20
27	Experimental evaluation of the dynamic route map in the reset transition of memristive ReRAMs. Chaos, Solitons and Fractals, 2020, 139, 110288.	5.1	20
28	Multiple slopes in the negative differential resistance region of NbO _x -based threshold switches. Journal Physics D: Applied Physics, 2019, 52, 325104.	2.8	19
29	PSpice switch-based versatile memristor model. , 2013, , .		18
30	Improved Vertex Coloring With NbO _x Memristor-Based Oscillatory Networks. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 2082-2095.	5.4	18
31	Memristorâ€”enhanced humanoid robot control system â€” Part II: Circuit theoretic model and performance analysis. International Journal of Circuit Theory and Applications, 2018, 46, 184-220.	2.0	17
32	Exploring the Dynamics of Real-World Memristors on the Basis of Circuit Theoretic Model Predictions. IEEE Circuits and Systems Magazine, 2018, 18, 48-76.	2.3	17
33	The Seizure Prediction Problem in Epilepsy: Cellular Nonlinear Networks. IEEE Circuits and Systems Magazine, 2012, 12, 8-20.	2.3	14
34	Registration and Fusion of Thermographic and Visual-Light Images in Neurosurgery. IEEE Transactions on Biomedical Circuits and Systems, 2018, 12, 1313-1321.	4.0	14
35	Graph Coloring via Locally-Active Memristor Oscillatory Networks. Journal of Low Power Electronics and Applications, 2022, 12, 22.	2.0	14
36	Beyond series and parallel: Coupling as a third relation in memristive systems. , 2014, , .		13

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37	Application of the Volterra Series Paradigm to Memristive Systems. , 2014, , 163-191.		13
38	New CNN based algorithms for the full penetration hole extraction in laser welding processes: Experimental results.. , 2009, , .		12
39	NERO mastering 300k CNN cells. , 2013, , .		12
40	Closedâ€form analytical solution for onâ€switching dynamics in a TaO memristor. Electronics Letters, 2017, 53, 1125-1126.	1.0	12
41	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.	3.0	12
42	Improvement of NbO_x-based threshold switching devices by implementing multilayer stacks. Semiconductor Science and Technology, 2019, 34, 075005.	2.0	12
43	A Simple Memristor Model for Neuromorphic ReRAM Devices. , 2020, , .		12
44	System-Theoretic Methods for Designing Bio-Inspired Mem-Computing Memristor Cellular Nonlinear Networks. Frontiers in Nanotechnology, 2021, 3, .	4.8	12
45	Feature extraction in laser welding processes. , 2008, , .		11
46	Toward Simplified Physics-Based Memristor Modeling of Valence Change Mechanism Devices. IEEE Transactions on Circuits and Systems II: Express Briefs, 2022, 69, 2473-2477.	3.0	11
47	About v-i Pinched Hysteresis of Some Non-Memristive Systems. Mathematical Problems in Engineering, 2018, 2018, 1-10.	1.1	10
48	Requirements and Challenges for Modelling Redox-based Memristive Devices. , 2018, , .		10
49	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.	5.4	9
50	Prediction Error Profiles allowing a Seizure Forecasting in Epilepsy ?. , 2006, , .		8
51	New CNN based algorithms for the full penetration hole extraction in laser welding processes. , 2009, , .		8
52	Motion correction of thermographic images in neurosurgery: Performance comparison. , 2014, , .		8
53	Real-time artefact filter for intraoperative thermographic imaging. , 2016, , .		8
54	NEROvideo: a general-purpose CNN-UM video processing system. Journal of Real-Time Image Processing, 2016, 12, 763-774.	3.5	8

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55	A Compact and Continuous Reformulation of the Strachan TaO _x Memristor Model With Improved Numerical Stability. IEEE Transactions on Circuits and Systems I: Regular Papers, 2022, 69, 1266-1277.	5.4	8
56	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.	2.0	7
57	Omnidirectional algorithm for the full penetration hole extraction in laser welding processes. , 2009, , .		7
58	CESAR: Emulating Cellular Networks on FPGA. , 2012, , .		7
59	Memristors and memristive circuits - an overview. , 2012, , .		7
60	Unfolding the Threshold Switching Behavior of a Memristor. Communications in Computer and Information Science, 2014, , 156-164.	0.5	7
61	Analysis of memristors with nonlinear memristance versus state maps. International Journal of Circuit Theory and Applications, 2017, 45, 1814-1832.	2.0	7
62	Transformation techniques applied to a TaO memristor model to enable stable device simulations. , 2017, , .		7
63	Analytical approach to single memristor circuits. , 2011, , .		6
64	Advanced memristive model of synapses with adaptive thresholds. , 2012, , .		6
65	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.	5.4	6
66	Edge of chaos in reaction diffusion CNN model. Open Mathematics, 2017, 15, 21-29.	1.0	6
67	Continuous and Differentiable Approximation of a TaO Memristor Model for Robust Numerical Simulations. Springer Proceedings in Physics, 2017, , 61-69.	0.2	6
68	A robust optical flow motion estimation and correction method for IRT imaging in brain surgery. Quantitative InfraRed Thermography Journal, 2021, 18, 226-251.	4.2	6
69	A Simple Monte Carlo Model for the Cycle-to-Cycle Reset Transition Variation of ReRAM Memristive Devices. , 2020, , .		6
70	Spatio-temporal analysis of brain electrical activity in epilepsy based on cellular nonlinear networks. , 2009, , .		5
71	A new cellular nonlinear network emulation on FPGA for EEG signal processing in epilepsy. , 2011, , .		5
72	A new high-speed real-time video processing platform. , 2014, , .		5

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73	Hierarchical description and analysis of CNN algorithms. , 2014, , .		5
74	An intraoperative imaging system for neurosurgical thermography. , 2017, , .		5
75	Motion estimation and correction for thermographic imaging in brain surgery. , 2017, , .		5
76	Evaluation of machine learning methods for seizure prediction in epilepsy. Current Directions in Biomedical Engineering, 2019, 5, 109-112.	0.4	5
77	Analytical Investigation of Pattern Formation in an M-CNN with Locally Active NbO_x Memristors. , 2021, , .		5
78	Mathematical Analysis of Memristor CNN. , 0, , .		5
79	Coherent false seizure prediction in epilepsy, coincidence or providence?. Clinical Neurophysiology, 2022, 133, 157-164.	1.5	5
80	Semi-Totalistic CNN Genes for Compact Image Compression. , 2006, , .		4
81	Cellular Neural Network (CNN) based control algorithms for omnidirectional laser welding processes: Experimental results. , 2010, , .		4
82	Spatio-temporal coupling of EEG signals in epilepsy. , 2011, , .		4
83	Complex dynamics in neuromorphic memristor circuits. , 2013, , .		4
84	Memristor for Neuromorphic Applications: Models and Circuit Implementations. , 2014, , 379-403.		4
85	Modelling brain electrical activity by reaction diffusion cellular nonlinear networks (RD-CNN) in laplace domain. , 2014, , .		4
86	A Cellular Network Architecture With Polynomial Weight Functions. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2016, 24, 353-357.	3.1	4
87	Edge of Chaos in Nanoscale Memristor CNN. , 2019, , .		4
88	Programmable Emulator of Genuinely Floating Memristive Switching Devices. , 2019, , .		4
89	Motion correction for IRT imaging in neurosurgery: Analysis and comparison of frequency-/filter- and intensity-based approaches. Infrared Physics and Technology, 2021, 117, 103804.	2.9	4
90	Tactile electronics. , 2021, , 277-292.		4

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91	Memristor CNNs with Hysteresis. Studies in Computational Intelligence, 2019, , 383-394.	0.9	4
92	Mathematical Investigation of Static Pattern Formation with a Locally Active Memristor Model. , 2021, , .		4
93	Special issue on cellular wave computing architectures, Part II. International Journal of Circuit Theory and Applications, 2009, 37, 503-504.	2.0	3
94	CNN computing of the interaction of fluxons. , 2011, , .		3
95	Memristor plasticity enables emergence of synchronization in neuromorphic networks. , 2014, , .		3
96	CNN based movement correction in thermography for intrasurgical diagnostics. , 2014, , .		3
97	Cellular nonlinear network-based signal prediction in epilepsy: Method comparison. , 2015, , .		3
98	Motion correction of thermographic images in neurosurgery. , 2015, , .		3
99	Motion Correction in Multimodal Intraoperative Imaging. IEEE Transactions on Biomedical Circuits and Systems, 2020, 14, 671-680.	4.0	3
100	A Flux-Controlled Memristor Model for Neuromorphic ReRAM Devices. , 2020, , .		3
101	On the chaotic nature of random telegraph noise in unipolar RRAM memristor devices. Chaos, Solitons and Fractals, 2022, 160, 112224.	5.1	3
102	Pattern Formation in an M-CNN Structure Utilizing a Locally Active NbOx Memristor. , 2022, , 79-101.		3
103	CNN Technology for Spatiotemporal Signal Processing. Eurasip Journal on Advances in Signal Processing, 2009, 2009, .	1.7	2
104	Feasibility study of codebook generation applying complex systems. , 2011, , .		2
105	Memristor technology in future electronic system design. , 2012, , .		2
106	Analysis of multi-memristor circuits. , 2013, , .		2
107	Complex behavior in memristor circuits based on static nonlinear two-ports and dynamic bipole. , 2015, , .		2
108	Stability analysis supports memristor circuit design. , 2015, , .		2

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109	“Memristors - Devices, Models, Circuits, Systems and Applications” International Journal of Circuit Theory and Applications, 2016, 44, 1478-1479.	2.0	2
110	Guest Editorial “ Special Issue on “Memristors: Devices, Models, Circuits, Systems, and Applications”™. International Journal of Circuit Theory and Applications, 2018, 46, 1-3.	2.0	2
111	Multilevel Interpolation for Feature-based Motion Correction in Neurosurgery. , 2018, , .		2
112	Seizure Prediction by Multivariate Autoregressive Model Order Optimization. Current Directions in Biomedical Engineering, 2018, 4, 395-398.	0.4	2
113	Efficient feature-based motion estimation in neurosurgery using non-maximum suppression. Current Directions in Biomedical Engineering, 2018, 4, 555-558.	0.4	2
114	Intraoperative motion correction in neurosurgery: a comparison of intensity- and feature-based methods. Biomedizinische Technik, 2018, 63, 573-578.	0.8	2
115	Motion Correction for Thermography using Co-registered Visual-Light Images. , 2019, , .		2
116	Edge of Chaos in Memristor CNN with Hysteresis and Applications in Pattern Formation. , 2021, , .		2
117	Synapse as a Memristor. , 2019, , 351-367.		2
118	Simscape and LTspice models of HP ideal generic memristor based on finite closed form solution for window functions. , 2021, , .		2
119	Sniffbots to “the” Rescue “ Fog Services for “Gas-Sniffing Immersive Robot Collective. Lecture Notes in Computer Science, 2022, , 3-28.	1.3	2
120	Infrared Thermographic Imaging of Chest Wall Perfusion in Patients Undergoing Coronary Artery Bypass Grafting. Annals of Biomedical Engineering, 2022, 50, 1837-1845.	2.5	2
121	Analysis of EEG-signals in epilepsy: Spatio-temporal models. , 2008, , .		1
122	A camera based closed loop control system for keyhole welding processes: Algorithm comparison. , 2010, , .		1
123	Multi-feature detection for quality assessment in laser beam welding: Experimental results. , 2012, , .		1
124	Image representation by means of CNN dynamics. , 2012, , .		1
125	Synchronization properties of a bio-inspired neural network. , 2015, , .		1
126	Architectures for Intraoperative Image Fusion in Brain Surgery. , 2018, , .		1

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127	A New CNN Occlusion Masking Method for IRT Imaging in Neurosurgery. , 2020, , .		1
128	Pattern Formation in a RD-MCNN with Locally Active Memristors. , 0, , .		1
129	Gas Sensing Discrimination using a Cellular Nonlinear Network. , 2021, , .		1
130	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, 683-697.	2.8	1
131	Analysis of local activity in reaction-diffusion networks: EEG signals in epilepsy. , 2009, , .		0
132	Applying Cellular Neural Networks dynamics for image representation. , 2013, , .		0
133	Critical role of initial condition in the dynamics of memristive systems: Orbital narrowing revisited. , 2013, , .		0
134	Application of tool-specific simulation algorithms to Memristor models written in Modelica. , 2013, , .		0
135	ANALYTICAL ANALYSIS OF MEMRISTIVE NETWORKS. , 2013, , 529-539.		0
136	[From the Guest Editors]. IEEE Circuits and Systems Magazine, 2013, 13, 4-6.	2.3	0
137	CNN-based image predictive coding. , 2014, , .		0
138	The NEROvideo CNN video processing system. , 2014, , .		0
139	Class of memristors from cascade of static nonlinear two ports with dynamic one-ports. , 2015, , .		0
140	EU COST action IC1401 â€” Pushing the frontiers of memristive devices to systems. , 2016, , .		0
141	BiFeO ₃ memristor-based encryption of medical data. , 2016, , .		0
142	Towards an analytical description of a TaO memristor. , 2017, , .		0
143	Gap engineering for improved control of memristor nanosensors. , 2017, , .		0
144	Image classification by cellular nonlinear networks. , 2017, , .		0

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145	[From the Guest Editors]. IEEE Circuits and Systems Magazine, 2018, 18, 5-6.	2.3	0
146	Control Strategies to Optimize Graph Coloring via M-CNNs with Locally-Active NbOx Memristors. , 2021,, .		0
147	Cellular Neural Networks Proposed for Image Predictive Coding. Communications in Computer and Information Science, 2014, , 237-245.	0.5	0
148	Optimization and Application of Niobium Oxide based Memristive NDR devices. , 2021, , .		0
149	Registration and Fusion of Visible Light and IRT Images in Neurosurgery. , 2021, , .		0
150	Seizure prediction with long-term iEEG recordings: What can we learn from data nonstationarity?. , 2021,, .		0