

# Ralph Etienne-Cummings

## List of Publications by Year in descending order

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Version: 2024-02-01

99  
papers

1,349  
citations

516215

16  
h-index

454577

30  
g-index

108  
all docs

108  
docs citations

108  
times ranked

1402  
citing authors

#	ARTICLE	IF	CITATIONS
1	Analysis and Design Methodology of RF Energy Harvesting Rectifier Circuit for Ultra-Low Power Applications. IEEE Open Journal of Circuits and Systems, 2022, 3, 82-96.	1.4	11
2	A syndromic surveillance tool to detect anomalous clusters of COVID-19 symptoms in the United States. Scientific Reports, 2021, 11, 4660.	1.6	26
3	Magnetolectric Versus Inductive Power Delivery for Sub-mm Receivers. , 2021, , .		6
4	A Neuromorphic Proto-Object Based Dynamic Visual Saliency Model With a Hybrid FPGA Implementation. IEEE Transactions on Biomedical Circuits and Systems, 2021, 15, 580-594.	2.7	7
5	Decoding accelerometry for classification and prediction of critically ill patients with severe brain injury. Scientific Reports, 2021, 11, 23654.	1.6	4
6	A Compact Free-Floating Device for Passive Charge-Balanced Neural Stimulation using PEDOT/CNT microelectrodes. , 2020, 2020, 3375-3378.		1
7	Proto-Object Based Saliency Model With Texture Detection Channel. Frontiers in Computational Neuroscience, 2020, 14, 541581.	1.2	7
8	Closed-loop bioelectronic medicine for diabetes management. Bioelectronic Medicine, 2020, 6, 11.	1.0	18
9	Detection and Confirmation of Multiple Human Targets Using Pixel-Wise Code Aperture Measurements. Journal of Imaging, 2020, 6, 40.	1.7	15
10	A Closed-Loop, All-Electronic Pixel-Wise Adaptive Imaging System for High Dynamic Range Videography. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 1803-1814.	3.5	10
11	Real-Time and Deep Learning Based Vehicle Detection and Classification Using Pixel-Wise Code Exposure Measurements. Electronics (Switzerland), 2020, 9, 1014.	1.8	23
12	The Microbead: A 0.009 mm <sup>3</sup> Implantable Wireless Neural Stimulator. IEEE Transactions on Biomedical Circuits and Systems, 2019, 13, 971-985.	2.7	87
13	Deep Learning-Based Target Tracking and Classification for Low Quality Videos Using Coded Aperture Cameras. Sensors, 2019, 19, 3702.	2.1	25
14	A Model-Based Systems Engineering Approach to Trade Space Exploration of Implanted Wireless Biotelemetry Communication Systems. IEEE Systems Journal, 2019, 13, 1669-1677.	2.9	10
15	An Analogue Neuromorphic Co-Processor That Utilizes Device Mismatch for Learning Applications. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 1174-1184.	3.5	13
16	The Microbead: A Highly Miniaturized Wirelessly Powered Implantable Neural Stimulating System. IEEE Transactions on Biomedical Circuits and Systems, 2018, 12, 521-531.	2.7	52
17	Computational stereo-vision model of proto-object based saliency in three-dimensional space. , 2018, , .		4
18	Automated Tracking System for Identification of Tagged Mice for Automatic Social Behavior Analysis. , 2018, , .		1

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19	Proto-Object Based Saliency Model with Second-Order Texture Feature. , 2018, , .		3
20	The Challenges of Designing an Inductively Coupled Power Link for 1/4m-sized On-Chip Coils. , 2018, , .		4
21	Large-Scale Neuromorphic Spiking Array Processors: A Quest to Mimic the Brain. <i>Frontiers in Neuroscience</i> , 2018, 12, 891.	1.4	177
22	Using Deep Learning to Extract Scenery Information in Real Time Spatiotemporal Compressed Sensing. , 2018, , .		1
23	Live demonstration: Event-based image processing on CMOS Mihalas-Niebur neuron array transceiver. , 2017, , .		0
24	Novel integration and packaging concepts of highly miniaturized inductively powered neural implants. , 2017, 2017, 234-237.		9
25	Active phantoms: a paradigm for ultrasound calibration using phantom feedback. <i>Journal of Medical Imaging</i> , 2017, 4, 035001.	0.8	3
26	Inference in spiking Bayesian neurons using stochastic computation. , 2017, , .		2
27	Low-power, low-mismatch, highly-dense array of VLSI Mihalas-Niebur neurons. , 2017, , .		15
28	lontophoresis instrumentation for the enhancement of gene therapy in wound healing. , 2017, , .		0
29	Coil array design for maximizing wireless power transfer to sub-mm sized implantable devices. , 2017, , .		10
30	Live demonstration: A wirelessly powered highly miniaturized neural stimulator. , 2017, , .		0
31	Live demonstration: Real-time, dynamic visual saliency computation in a VR environment seeing through the eyes of a mobile robot. , 2017, , .		0
32	A model based approach for realizing a safe wireless biotelemetry system. , 2017, , .		2
33	Live demonstration: FPGA neural array emulation for real-time, event-based simultaneous dewarping and filtering for aerial vehicles. , 2017, , .		0
34	Live demonstration: A compact all-CMOS spatiotemporal compressed sensing video camera. , 2017, , .		2
35	Bio-inspired system architecture for energy efficient, BIGDATA computing with application to wide area motion imagery. , 2016, , .		6
36	Stochastic image processing and simultaneous dewarping for aerial vehicles. , 2016, , .		1

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37	A compact, low-power, fully analog implantable microstimulator. , 2016, , .		17
38	Communication Channel Analysis and Real Time Compressed Sensing for High Density Neural Recording Devices. IEEE Transactions on Circuits and Systems I: Regular Papers, 2016, 63, 599-608.	3.5	13
39	Live demonstration: Real-time implementation of a proto-object-based dynamic visual saliency model. , 2015, , .		3
40	An unsupervised dictionary learning algorithm for neural recordings. , 2015, , .		9
41	Compressed sensing block-wise exposure control algorithm using optical flow estimation. , 2015, , .		1
42	FPGA emulation of a spike-based, stochastic system for real-time image dewarping. , 2015, , .		6
43	A 5 $\frac{1}{4}W$ /channel 9b-ENOB BioADC array for electrocortical recording. , 2015, , .		0
44	CMOS implementation of pixel-wise coded exposure imaging for insect-based sensor node. , 2015, , .		4
45	Active Ultrasound Pattern Injection System (AUSPIS) for Interventional Tool Guidance. PLoS ONE, 2014, 9, e104262.	1.1	22
46	Bioinspired Imaging: Discovery, Emulation, and Future Prospects [Scanning the Issue]. Proceedings of the IEEE, 2014, 102, 1404-1410.	16.4	2
47	A dictionary learning algorithm for multi-channel neural recordings. , 2014, , .		11
48	A model of proto-object based saliency. Vision Research, 2014, 94, 1-15.	0.7	84
49	Bioinspired Visual Motion Estimation. Proceedings of the IEEE, 2014, 102, 1520-1536.	16.4	28
50	Energy-efficient two-stage Compressed Sensing method for implantable neural recordings. , 2013, , .		8
51	Reconstruction of neural action potentials using signal dependent sparse representations. , 2013, , .		6
52	Fast Neuromimetic Object Recognition Using FPGA Outperforms GPU Implementations. IEEE Transactions on Neural Networks and Learning Systems, 2013, 24, 1239-1252.	7.2	25
53	A spiking neural network architecture for visual motion estimation. , 2013, , .		36
54	Real-time motion estimation using spatiotemporal filtering in FPGA. , 2013, , .		5

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55	Perceptual organization, attention and object recognition: Closing the loop. , 2012, , .		0
56	Live demonstration: A tactile perception system for sensing the visual world. , 2012, , .		0
57	An entropy based ideal observer model for visual saliency. , 2012, , .		2
58	Real Time Compressive Sensing Video Reconstruction in Hardware. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2012, 2, 604-615.	2.7	12
59	Implementation of functional components of the Locomotion Processing Unit. , 2011, , .		2
60	A novel 3D display using multi-hyperstereo image stitching. , 2011, , .		0
61	Towards a Cortical Prosthesis: Implementing A Spike-Based HMAX Model of Visual Object Recognition in Silico. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2011, 1, 516-525.	2.7	16
62	Maximum likelihood parameter estimation of a spiking silicon neuron. , 2011, , .		2
63	Current Mode Image Sensor With Two Transistors per Pixel. IEEE Transactions on Circuits and Systems I: Regular Papers, 2010, 57, 1154-1165.	3.5	31
64	A spike based 3D imager chip using a mixed mode encoding readout. , 2010, , .		3
65	Discriminating Multiple Nearby Targets Using Single-Ping Ultrasonic Scene Mapping. IEEE Transactions on Circuits and Systems I: Regular Papers, 2010, 57, 2915-2924.	3.5	3
66	Low-voltage high CMRR OTA for electrophysiological measurements. , 2009, , .		1
67	A CMOS switched capacitor implementation of the Mihalas-Niebur neuron. , 2009, , .		26
68	A switched capacitor implementation of the generalized linear integrate-and-fire neuron. , 2009, , .		38
69	A color detection glove with haptic feedback for the visually disabled. , 2009, , .		5
70	Simulation of a single ping ultrasonic bearing estimation design using spatiotemporal filtering. , 2009, , .		0
71	Correction to "Asynchronous Decoding of Dexterous Finger Movements Using M1 Neurons" [Feb 08 3-14]. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2008, 16, 421-421.	2.7	1
72	A Silicon Central Pattern Generator Controls Locomotion in Vivo. IEEE Transactions on Biomedical Circuits and Systems, 2008, 2, 212-222.	2.7	58

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73	Biomorphic circuits and systems: Control of robotic and prosthetic limbs. , 2008, , .		2
74	Practical considerations for the use of a Howland current source for neuro-stimulation. , 2008, , .		18
75	Real-time silicon implementation of V1 in hierarchical visual information processing. , 2008, , .		9
76	The feeling of color: A haptic feedback device for the visually disabled. , 2008, , .		8
77	A size and position invariant event-based human posture recognition algorithm. , 2008, , .		2
78	Finite element modeling of tissue for optimal ultrasonic transducer array design. , 2008, , .		0
79	Image sensor with focal plane change event driven video compression. , 2008, , .		2
80	Implementing a neuromorphic cross-correlation engine with silicon neurons. , 2008, , .		4
81	A 5-bits precision CMOS bandgap reference with on-chip bi-directional resistance trimming. , 2008, , .		2
82	Adaptive hysteretic comparator with opamp threshold level setting. , 2008, , .		5
83	Optical Flow Approximation of Sub-Pixel Accurate Block Matching for Video Coding. , 2007, , .		13
84	Sensor-based Dynamic Control of the Central Pattern Generator for Locomotion. , 2007, , .		3
85	Video Sensor Node for Low-Power Ad-hoc Wireless Networks. , 2007, , .		4
86	Configuring of Spiking Central Pattern Generator Networks for Bipedal Walking Using Genetic Algorithms. , 2007, , .		23
87	Linear Current-Mode Active Pixel Sensor. IEEE Journal of Solid-State Circuits, 2007, 42, 2482-2491.	3.5	40
88	Design and Optimization of a Capacitive Micromachined Ultrasonic Transducer Micro-Array for Near Field Sensing. , 2007, , .		1
89	A robust multi-application automatic gain control chip. Midwest Symposium on Circuits and Systems, 2007, , .	1.0	6
90	Incremental Encoder Based Position and Velocity Measurements VLSI Chip with Serial Peripheral Interface. , 2007, , .		12

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91	CMOS Camera With In-Pixel Temporal Change Detection and ADC. IEEE Journal of Solid-State Circuits, 2007, 42, 2187-2196.	3.5	68
92	Neuromorphic Vision Systems for Mobile Applications. , 2006, , .		9
93	Design of an Ultrasonic Micro-Array for Near Field Sensing during Retinal Microsurgery. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0
94	Single-Chip Stereo Imager. Analog Integrated Circuits and Signal Processing, 2004, 39, 237-250.	0.9	11
95	A Pipelined Temporal Difference Imager. IEEE Journal of Solid-State Circuits, 2004, 39, 538-543.	3.5	33
96	A dual pixel-type array for imaging and motion centroid localization. IEEE Sensors Journal, 2002, 2, 529-548.	2.4	16
97	Biologically Inspired Visual Motion Detection in VLSI. International Journal of Computer Vision, 2001, 44, 175-198.	10.9	7
98	High Performance Biomorphic Image Processing Under Tight Space and Power Constraints. Autonomous Robots, 2001, 11, 227-232.	3.2	2
99	Intelligent Robot Vision Sensors in VLSI. Autonomous Robots, 1999, 7, 225-237.	3.2	6