Andr van Schaik

List of Publications by Citations

148 papers	3,280 citations	26 h-index	52 g-index
172 ext. papers	4,217 ext. citations	3.7 avg, IF	5.31 L-index

#	Paper	IF	Citations
148	Neuromorphic silicon neuron circuits. *Frontiers in Neuroscience*, **2011**, 5, 73	5.1	693
147	EMNIST: Extending MNIST to handwritten letters **2017**,		253
146	A new EEG recording system for passive dry electrodes. *Clinical Neurophysiology*, **2010**, 121, 686-93	4.3	125
145	Large-Scale Neuromorphic Spiking Array Processors: A Quest to Mimic the Brain. *Frontiers in Neuroscience*, **2018**, 12, 891	5.1	95
144	The role of high frequencies in speech localization. *Journal of the Acoustical Society of America*, **2005**, 118, 353-63	2.2	92
143	An active 2-d silicon cochlea. *IEEE Transactions on Biomedical Circuits and Systems*, **2008**, 2, 30-43	5.1	85
142	Asynchronous binaural spatial audition sensor with 2 ⨉ 64 ⨉ 4 channel output. *IEEE Transactions on Biomedical Circuits and Systems*, **2014**, 8, 453-64	5.1	83
141	Convergence analysis of efficient online learning in Bayesian spiking neurons. *BMC Neuroscience*, **2012**, 13,	3.2	78
140	L1 regularization method in electrical impedance tomography by using the L1-curve (Pareto frontier curve). *Applied Mathematical Modelling*, **2012**, 36, 1095-1105	4.5	56
139	Benefit from spatial separation of multiple talkers in bilateral hearing-aid users: Effects of hearing loss, age, and cognition. *International Journal of Audiology*, **2009**, 48, 758-74	2.6	53
138	Extending the viability of acute brain slices. *Scientific Reports*, **2014**, 4, 5309	4.9	47
137	Fast, Simple and Accurate Handwritten Digit Classification by Training Shallow Neural Network Classifiers with the 'Extreme Learning Machine' Algorithm. *PLoS ONE*, **2015**, 10, e0134254	3.7	47
136	An FPGA Implementation of a Polychronous Spiking Neural Network with Delay Adaptation. *Frontiers in Neuroscience*, **2013**, 7, 14	5.1	46
135	. *Proceedings of the IEEE*, **2014**, 102, 843-859	14.3	45
134	Event-based 64-channel binaural silicon cochlea with Q enhancement mechanisms **2010**,		44
133	A mobile EEG system with dry electrodes **2008**,		44
132	Synthesis of neural networks for spatio-temporal spike pattern recognition and processing. *Frontiers in Neuroscience*, **2013**, 7, 153	5.1	43

131	Bias Current Generators with Wide Dynamic Range. *Analog Integrated Circuits and Signal Processing*, **2005**, 43, 247-268	1.2	43
130	An ultra-high input impedance ECG amplifier for long-term monitoring of athletes. *Medical Devices: Evidence and Research*, **2010**, 3, 1-9	1.5	41
129	Separation of concurrent broadband sound sources by human listeners. *Journal of the Acoustical Society of America*, **2004**, 115, 324-36	2.2	40
128	Contrasting monaural and interaural spectral cues for human sound localization. *Journal of the Acoustical Society of America*, **2004**, 115, 3124-41	2.2	38
127	. *IEEE Transactions on Multimedia*, **2014**, 16, 37-46	6.6	36
126	A Review of Control Strategies in Closed-Loop Neuroprosthetic Systems. *Frontiers in Neuroscience*, **2016**, 10, 312	5.1	32
125	Online and adaptive pseudoinverse solutions for ELM weights. *Neurocomputing*, **2015**, 149, 233-238	5.4	30
124	A psychophysical evaluation of near-field head-related transfer functions synthesized using a distance variation function. *Journal of the Acoustical Society of America*, **2009**, 125, 2233-42	2.2	28
123	A log-domain implementation of the Izhikevich neuron model **2010**,		27
122	Astrocytic modulation of cortical oscillations. *Scientific Reports*, **2018**, 8, 11565	4.9	26
121	Skimming Digits: Neuromorphic Classification of Spike-Encoded Images. *Frontiers in Neuroscience*, **2016**, 10, 184	5.1	26
120	Comparison of the measured and theoretical performance of a broadband circular microphone array. *Journal of the Acoustical Society of America*, **2011**, 130, 3827-37	2.2	25
119	Calcium Imaging of AM Dyes Following Prolonged Incubation in Acute Neuronal Tissue. *PLoS ONE*, **2016**, 11, e0155468	3.7	25
118	Neuromorphic Hardware Architecture Using the Neural Engineering Framework for Pattern Recognition. *IEEE Transactions on Biomedical Circuits and Systems*, **2017**, 11, 574-584	5.1	24
117	A FPGA Implementation of the CAR-FAC Cochlear Model. *Frontiers in Neuroscience*, **2018**, 12, 198	5.1	22
116	A mixed-signal implementation of a polychronous spiking neural network with delay adaptation. *Frontiers in Neuroscience*, **2014**, 8, 51	5.1	22
115	An FPGA-Based Massively Parallel Neuromorphic Cortex Simulator. *Frontiers in Neuroscience*, **2018**, 12, 213	5.1	21
114	Dry electrode bio-potential recordings. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2010**, 2010, 6493-6	0.9	21

113	Localization in speech mixtures by listeners with hearing loss. *Journal of the Acoustical Society of America*, **2011**, 129, EL210-15	2.2	21
112	Design of an Analogue VLSI Model of an Active Cochlea. *Analog Integrated Circuits and Signal Processing*, **1997**, 13, 19-35	1.2	21
111	Bayesian Estimation and Inference Using Stochastic Electronics. *Frontiers in Neuroscience*, **2016**, 10, 104	5.1	20
110	Event-based Sensing for Space Situational Awareness. *Journal of the Astronautical Sciences*, **2019**, 66, 125-141	1.1	19
109	A neuromorphic implementation of multiple spike-timing synaptic plasticity rules for large-scale neural networks. *Frontiers in Neuroscience*, **2015**, 9, 180	5.1	19
108	Analog very large-scale integrated (VLSI) implementation of a model of amplitude-modulation sensitivity in the auditory brainstem. *Journal of the Acoustical Society of America*, **1999**, 105, 811-21	2.2	19
107	Efficient FPGA Implementations of Pair and Triplet-Based STDP for Neuromorphic Architectures. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2019**, 66, 1558-1570	3.9	19
106	Neuromorphic audio-visual sensor fusion on a sound-localizing robot. *Frontiers in Neuroscience*, **2012**, 6, 21	5.1	18
105	Towards true unipolar bio-potential recording: a preliminary result for ECG. *Physiological Measurement*, **2013**, 34, N1-7	2.9	18
104	A log-domain implementation of the Mihalas-Niebur neuron model **2010**,		18
103	A Neuromorphic Sound Localizer for a Smart MEMS System. *Analog Integrated Circuits and Signal Processing*, **2004**, 39, 267-273	1.2	18
102	An FPGA design framework for large-scale spiking neural networks **2014**,		17
101	FPGA implementation of the CAR Model of the cochlea **2014**,		17
100	A Low Power Trainable Neuromorphic Integrated Circuit That Is Tolerant to Device Mismatch. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2016**, 63, 211-221	3.9	16
99	Code-division-multiplexed electrical impedance tomography spectroscopy. *IEEE Transactions on Biomedical Circuits and Systems*, **2009**, 3, 332-8	5.1	16
98	Wearable dry sensors with bluetooth connection for use in remote patient monitoring systems. *Studies in Health Technology and Informatics*, **2010**, 161, 57-65	0.5	16
97	Turn Down That Noise: Synaptic Encoding of Afferent SNR in a Single Spiking Neuron. *IEEE Transactions on Biomedical Circuits and Systems*, **2015**, 9, 188-96	5.1	13
96	Towards true unipolar ECG recording without the Wilson central terminal (preliminary results). *Physiological Measurement*, **2013**, 34, 991-1012	2.9	13

95	The adaptation of spike backpropagation delays in cortical neurons. *Frontiers in Cellular Neuroscience*, **2013**, 7, 192	6.1	13
94	Investigation of Event-Based Surfaces for High-Speed Detection, Unsupervised Feature Extraction, and Object Recognition. *Frontiers in Neuroscience*, **2018**, 12, 1047	5.1	12
93	Racing to learn: statistical inference and learning in a single spiking neuron with adaptive kernels. *Frontiers in Neuroscience*, **2014**, 8, 377	5.1	12
92	Adaptive sound localization with a silicon cochlea pair. *Frontiers in Neuroscience*, **2010**, 4, 196	5.1	12
91	Investigating the role of combined acoustic-visual feedback in one-dimensional synchronous brain computer interfaces, a preliminary study. *Medical Devices: Evidence and Research*, **2012**, 5, 81-8	1.5	12
90	Low Power, CMOS-MoS Memtransistor based Neuromorphic Hybrid Architecture for Wake-Up Systems. *Scientific Reports*, **2019**, 9, 15604	4.9	11
89	A neuromorphic hardware framework based on population coding **2015**,		11
88	Sound stream segregation: a neuromorphic approach to solve the "cocktail party problem" in real-time. *Frontiers in Neuroscience*, **2015**, 9, 309	5.1	11
87	Human localisation of band-pass filtered noise. *International Journal of Neural Systems*, **1999**, 9, 441-6	6.2	11
86	A first-order nonhomogeneous Markov model for the response of spiking neurons stimulated by small phase-continuous signals. *Neural Computation*, **2009**, 21, 1554-88	2.9	10
85	Mobile biomedical sensing with dry electrodes **2008**,		10
84	Acoustic holography with a concentric rigid and open spherical microphone array **2009**,		9
83	A programmable axonal propagation delay circuit for time-delay spiking neural networks **2011**,		9
82	An address-event vision sensor for multiple transient object detection. *IEEE Transactions on Biomedical Circuits and Systems*, **2007**, 1, 278-88	5.1	9
81	Event-Based Object Detection and Tracking for Space Situational Awareness. *IEEE Sensors Journal*, **2020**, 20, 15117-15132	4	9
80	A compact reconfigurable mixed-signal implementation of synaptic plasticity in spiking neurons **2014**,		8
79	A generalised conductance-based silicon neuron for large-scale spiking neural networks **2014**,		8
78	Time domain reconstruction of spatial sound fields using compressed sensing **2011**,		8

77	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	3.9	7
76	Live demonstration: FPGA implementation of the CAR model of the cochlea **2014**,		7
75	Prolonged Incubation of Acute Neuronal Tissue for Electrophysiology and Calcium-imaging. *Journal of Visualized Experiments*, **2017**,	1.6	7
74	A compact aVLSI conductance-based silicon neuron **2015**,		7
73	A comparison of extreme learning machines and back-propagation trained feed-forward networks processing the mnist database **2015**,		7
72	Pregnancy detection and monitoring in cattle via combined foetus electrocardiogram and phonocardiogram signal processing. *BMC Veterinary Research*, **2012**, 8, 164	2.7	7
71	An aVLSI programmable axonal delay circuit with spike timing dependent delay adaptation **2012**,		7
70	The Design and Evaluation of an Economically Constructed Anechoic Chamber. *Architectural Science Review*, **2009**, 52, 312-319	2.6	7
69	Active electrode design suitable for simultaneous EIT and EEG. *Electronics Letters*, **2012**, 48, 1583-1584	1.1	7
68	Analogue VLSI implementations of two dimensional, nonlinear, active cochlea models **2008**,		7
67	A 2-D Cochlea with Hopf Oscillators **2007**,		7
66	Explicit Computation of Input Weights in Extreme Learning Machines. *Proceedings in Adaptation, Learning and Optimization*, **2015**, 41-49	0.2	7
65	Electronic cochlea: CAR-FAC model on FPGA **2016**,		7
64	Star Tracking Using an Event Camera **2019**,		7
63	Breaking Liebig's Law: An Advanced Multipurpose Neuromorphic Engine. *Frontiers in Neuroscience*, **2018**, 12, 593	5.1	7
62	A Binaural Sound Localization System using Deep Convolutional Neural Networks **2019**,		6
61	**2014**,		6
60	A 1.2V 2-bit phase interpolator for 65nm CMOS **2012**,		6

59	The ripple pond: enabling spiking networks to see. *Frontiers in Neuroscience*, **2013**, 7, 212	5.1	6
58	An analogue VLSI implementation of polychromous spiking neural networks **2011**,		6
57	An asynchronous parallel neuromorphic ADC architecture **2012**,		6
56	Self-tuned regenerative amplification and the hopf bifurcation **2008**,		6
55	Measured and theoretical performance comparison of a co-centred rigid and open spherical microphone array **2008**,		6
54	An Analog VLSI Model of Periodicity Extraction in the Human Auditory System. *Analog Integrated Circuits and Signal Processing*, **2001**, 26, 157-177	1.2	6
53	Vibrotactile sensitivity of patients with HIV-related sensory neuropathy: An exploratory study. *Brain and Behavior*, **2019**, 9, e01184	3.4	6
52	A Neuroethics Framework for the Australian Brain Initiative. *Neuron*, **2019**, 101, 365-369	13.9	5
51	Event-Based Feature Extraction Using Adaptive Selection Thresholds. *Sensors*, **2020**, 20,	3.8	5
50	Spatial and Temporal Downsampling in Event-Based Visual Classification. *IEEE Transactions on Neural Networks and Learning Systems*, **2018**, 29, 5030-5044	10.3	5
49	A 0.3mm2 10-b 100MS/s pipelined ADC using Nauta structure op-amps in 180nm CMOS **2013**,		5
48	FPGA implementation of biologically-inspired auto-associative memory. *Electronics Letters*, **2012**, 48, 148	1.1	5
47	A 2-D silicon cochlea with an improved automatic quality factor control-loop **2008**,		5
46	Event-Based Processing of Single Photon Avalanche Diode Sensors. *IEEE Sensors Journal*, **2020**, 20, 7677-7691	7	5
45	ELM solutions for event-based systems. *Neurocomputing*, **2015**, 149, 435-442	5.4	4
44	Event-Based Computation for Touch Localization Based on Precise Spike Timing. *Frontiers in Neuroscience*, **2020**, 14, 420	5.1	4
43	Temporal order detection and coding in nervous systems. *Neural Computation*, **2013**, 25, 510-31	2.9	4
42	Emergence of competitive control in a memristor-based neuromorphic circuit **2012**,		4

41	**2010**,		4
40	Directional hearing in a silicon cricket. *BioSystems*, **2007**, 87, 307-13	1.9	4
39	A Log-Domain CMOS Transcapacitor: Design, Analysis and Applications. *Analog Integrated Circuits and Signal Processing*, **2000**, 22, 195-208	1.2	4
38	A stochastic approach to STDP **2016**,		4
37	Silicon Models of the Auditory Pathway. *Springer Handbook of Auditory Research*, **2010**, 261-276	1.2	4
36	Drift in a popular metal oxide sensor dataset reveals limitations for gas classification benchmarks. *Sensors and Actuators B: Chemical*, **2022**, 361, 131668	8.5	4
35	Low-power transcutaneous current stimulator for wearable applications. *BioMedical Engineering OnLine*, **2017**, 16, 118	4.1	3
34	A pneumatic Bionic Voice prosthesis-Pre-clinical trials of controlling the voice onset and offset. *PLoS ONE*, **2018**, 13, e0192257	3.7	3
33	Approximate, computationally efficient online learning in Bayesian spiking neurons. *Neural Computation*, **2014**, 26, 472-96	2.9	3
32	Sleep apnoea episodes recognition by a committee of ELM classifiers from ECG signal. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2015**, 2015, 7675-8	0.9	3
31	A reconfigurable mixed-signal implementation of a neuromorphic ADC **2015**,		3
30	A digital to transconductance converter for nauta structure op-amps in 65nm CMOS **2014**,		3
29	An improved aVLSI axon with programmable delay using spike timing dependent delay plasticity **2013**,		3
28	Silicon implementation of the generalized integrate-and-fire neuron model **2011**,		3
27	Sound localisation with a silicon cochlea pair **2009**,		3
26	A Basilar Membrane Resonator for an Active 2-D Cochlea **2007**,		3
25	An Analogue VLSI Implementation of the Meddis Inner Hair Cell Model. *Eurasip Journal on Advances in Signal Processing*, **2003**, 2003, 1	1.9	3
24	Embedded implementation of a random feature detecting network for real-time classification of time-of-flight SPAD array recordings **2019**,		3

23	Wald's martingale and the conditional distributions of absorption time in the Moran process. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2020**, 476, 20200135	2.4	3
22	. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2019**, 66, 1805-1817	3.9	3
21	FPGA Implementation of Particle Filters for Robotic Source Localization. *IEEE Access*, **2021**, 9, 98185-98203	3.3	3
20	Decoding force from multiunit recordings from the median nerve **2015**,		2
19	CAR-Lite: A Multi-Rate Cochlea Model on FPGA **2018**,		2
18	Measurement of perception thresholds for electrical noise stimuli. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2017**, 2017, 2166-2169	0.9	2
17	Research topic: neuromorphic engineering systems and applications. A snapshot of neuromorphic systems engineering. *Frontiers in Neuroscience*, **2014**, 8, 424	5.1	2
16	Unipolar ECG circuits: Towards more precise cardiac event identification **2013**,		2
15	Spiking neural network-based auto-associative memory using FPGA interconnect delays **2011**,		2
14	Learning ELM Network Weights Using Linear Discriminant Analysis. *Proceedings in Adaptation, Learning and Optimization*, **2015**, 183-191	0.2	2
13	Advances in Machine Learning and Deep Neural Networks. *Proceedings of the IEEE*, **2021**, 109, 607-611	14.3	2
12	A Machine Hearing System for Binaural Sound Localization based on Instantaneous Correlation **2018**,		2
11	Symbolic analysis of the Tau Cell log-domain filter using affine MOSFET models **2010**,		1
10	Noise-robust text-dependent speaker identification using cochlear models.. *Journal of the Acoustical Society of America*, **2022**, 151, 500	2.2	1
9	Martingales and the characteristic functions of absorption time on bipartite graphs. *Royal Society Open Science*, **2021**, 8, 210657	3.3	1
8	The Bayesian Decoding of Force Stimuli from Slowly Adapting Type I Fibers in Humans. *PLoS ONE*, **2016**, 11, e0153366	3.7	1
7	Event Camera Simulator Improvements via Characterized Parameters. *Frontiers in Neuroscience*, **2021**, 15, 702765	5.1	1
6	A Biologically Inspired Sound Localisation System Using a Silicon Cochlea Pair. *Applied Sciences (Switzerland)*, **2021**, 11, 1519	2.6	1

5   Martingales and the fixation time of evolutionary graphs with arbitrary dimensionality.. *Royal Society Open Science*, **2022**, 9, 220011   3.3   1

4   Neuromorphic Engineering Needs Closed-Loop Benchmarks.. *Frontiers in Neuroscience*, **2022**, 16, 813555   5.1   0

3   Suitability of the INPHAZE impedance analyzer for Bio-impedance and EIT. *Journal of Physics: Conference Series*, **2010**, 224, 012014   0.3

2   The Electronic Ear **1996**, 233-250

1   Neuromorphic Sensors, Cochlea **2022**, 2325-2329