Maurizio valle

List of Publications by Year
in descending order

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181	4,316	279798	144013
papers	citations	23 h-index	57 g-index

186	186	186	3469
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Tactile Sensingâ€"From Humans to Humanoids. IEEE Transactions on Robotics, 2010, 26, 1-20.	10.3	1,379
2	Directions Toward Effective Utilization of Tactile Skin: A Review. IEEE Sensors Journal, 2013, 13, 4121-4138.	4.7	356
3	Robotic Tactile Sensing. , 2013, , .		180
4	Piezoelectric oxide semiconductor field effect transistor touch sensing devices. Applied Physics Letters, 2009, 95, .	3.3	145
5	Towards Tactile Sensing System on Chip for Robotic Applications. IEEE Sensors Journal, 2011, 11, 3216-3226.	4.7	126
6	Electromechanical characterization of piezoelectric PVDF polymer films for tactile sensors in robotics applications. Sensors and Actuators A: Physical, 2011, 169, 49-58.	4.1	118
7	Piezoelectric Polymer Transducer Arrays for Flexible Tactile Sensors. IEEE Sensors Journal, 2013, 13, 4022-4029.	4.7	106
8	Tactile-Data Classification of Contact Materials Using Computational Intelligence. IEEE Transactions on Robotics, 2011, 27, 635-639.	10.3	91
9	A high-sensitivity tactile sensor based on piezoelectric polymer PVDF coupled to an ultra-low voltage organic transistor. Organic Electronics, 2016, 36, 57-60.	2.6	80
10	A dedicated very low power analog VLSI architecture for smart adaptive systems. Applied Soft Computing Journal, 2004, 4, 206-226.	7.2	64
11	SPICE model for lossy piezoelectric polymers. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2009, 56, 387-395.	3.0	60
12	A System for Electrotactile Feedback Using Electronic Skin and Flexible Matrix Electrodes: Experimental Evaluation. IEEE Transactions on Haptics, 2017, 10, 162-172.	2.7	57
13	Bioelectrochemical signal monitoring of in-vitro cultured cells by means of an automated microsystem based on solid state sensor-array. Biosensors and Bioelectronics, 2003, 18, 621-626.	10.1	56
14	Tactile Sensing Chips With POSFET Array and Integrated Interface Electronics. IEEE Sensors Journal, 2014, 14, 3448-3457.	4.7	52
15	Analog VLSI Implementation of Artificial Neural Networks with Supervised On-Chip Learning. Analog Integrated Circuits and Signal Processing, 2002, 33, 263-287.	1.4	44
16	A novel current-mode very low power analog cmos four quadrant multiplier. , 0, , .		44
17	CHARGE AMPLIFIER DESIGN METHODOLOGY FOR PVDF-BASED TACTILE SENSORS. Journal of Circuits, Systems and Computers, 2013, 22, 1350066.	1.5	39
18	A tensor-based approach to touch modality classification by using machine learning. Robotics and Autonomous Systems, 2015, 63, 268-278.	5.1	37

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19	A Controller Area Network Bus Transceiver Behavioral Model for Network Design and Simulation. IEEE Transactions on Industrial Electronics, 2009, 56, 3762-3771.	7.9	35
20	Design and fabrication of posfet devices for tactile sensing. , 2009, , .		34
21	Indoor ranging and localisation algorithm based on received signal strength indicator using statistic parameters for wireless sensor networks. IET Wireless Sensor Systems, 2015, 5, 243-249.	1.7	34
22	Evaluating Energy Consumption in Wireless Sensor Networks Applications. , 2007, , .		33
23	A Tensor-Based Pattern-Recognition Framework for the Interpretation of Touch Modality in Artificial Skin Systems. IEEE Sensors Journal, 2014, 14, 2216-2225.	4.7	32
24	An experimental analog VLSI neural network with on-chip back-propagation learning. Analog Integrated Circuits and Signal Processing, 1996, 9, 231.	1.4	31
25	Deposition, processing and characterization of P(VDF-TrFE) thin films for sensing applications. , 2008, , .		28
26	POSFET Based Tactile Sensor Arrays. , 2007, , .		27
27	Computational Intelligence Techniques for Tactile Sensing Systems. Sensors, 2014, 14, 10952-10976.	3.8	25
28	Electronic Skin: Achievements, Issues and Trends. Procedia Technology, 2014, 15, 549-558.	1.1	24
29	Towards integrating intelligence in electronic skin. Mechatronics, 2016, 34, 84-94.	3.3	24
30	Spike-Based Readout of POSFET Tactile Sensors. IEEE Transactions on Circuits and Systems I: Regular Papers, 2017, 64, 1421-1431.	5.4	24
31	Interface Electronics for Tactile Sensors Based on Piezoelectric Polymers. IEEE Sensors Journal, 2017, 17, 5937-5947.	4.7	24
32	Tactile Sensing Technologies. , 2013, , 79-136.		23
33	Experimental Analysis of Wireless Sensor Nodes Current Consumption. , 2008, , .		22
34	POSFET devices based tactile sensing arrays. , 2010, , .		21
35	Real-Time Embedded Machine Learning for Tensorial Tactile Data Processing. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 3897-3906.	5.4	21
36	Guest Editorial Special Issue on Robotic Sense of Touch. , 2011, 27, 385-388.		20

#	Article	IF	Citations
37	Smart Tactile Sensing Systems Based on Embedded CNN Implementations. Micromachines, 2020, 11, 103.	2.9	20
38	Analysis of the behavior of a dynamic latch comparator. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 1998, 45, 294-298.	0.1	19
39	Approximate Computing Methods for Embedded Machine Learning. , 2018, , .		19
40	DCNN for Tactile Sensory Data Classification based on Transfer Learning. , 2019, , .		19
41	Asynchronous, event-driven readout of POSFET devices for tactile sensing. , 2014, , .		18
42	Towards prosthetic systems providing comprehensive tactile feedback for utility and embodiment. , 2014, , .		16
43	Tactile data processing method for the reconstruction of contact force distributions. Mechatronics, 2015, 27, 28-37.	3.3	16
44	Validation of Screen-Printed Electronic Skin Based on Piezoelectric Polymer Sensors. Sensors, 2020, 20, 1160.	3.8	16
45	System approach: A paradigm for robotic tactile sensing. , 2008, , .		15
46	Approximate Multipliers Based on Inexact Adders for Energy Efficient Data Processing. , 2017, , .		15
47	Virtual Reality based Telerobotics Framework with Depth Cameras. , 2020, , .		15
48	Embedded Electrotactile Feedback System for Hand Prostheses Using Matrix Electrode and Electronic Skin. IEEE Transactions on Biomedical Circuits and Systems, 2021, 15, 912-925.	4.0	15
49	Touch Modality Classification Using Recurrent Neural Networks. IEEE Sensors Journal, 2021, 21, 9983-9993.	4.7	15
50	Real-time reconstruction of contact shapes for large area robot skin. , 2013, , .		14
51	Real-Time Digital Signal Processing Based on FPGAs for Electronic Skin Implementation â€. Sensors, 2017, 17, 558.	3.8	14
52	Algorithmic-Level Approximate Tensorial SVM Using High-Level Synthesis on FPGA. Electronics (Switzerland), 2021, 10, 205.	3.1	14
53	A Novel Learning Strategy for the Trade-Off Between Accuracy and Computational Cost: A Touch Modalities Classification Case Study. IEEE Sensors Journal, 2022, 22, 659-670.	4.7	14
54	Experimental Assessment of the Interface Electronic System for PVDF-Based Piezoelectric Tactile Sensors. Sensors, 2019, 19, 4437.	3.8	13

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55	Dual-Parameter Modulation Improves Stimulus Localization in Multichannel Electrotactile Stimulation. IEEE Transactions on Haptics, 2020, 13, 393-403.	2.7	13
56	An analog VLSI implementation of a feature extractor for real time optical character recognition. IEEE Journal of Solid-State Circuits, 1998, 33, 556-564.	5.4	11
57	Tactile sensing arrays for humanoid robots. , 2007, , .		11
58	Bio-inspired tactile sensing arrays. , 2009, , .		11
59	Piezoelectric polymer transducer arrays for flexible tactile sensors. , 2012, , .		11
60	POSFET tactile sensing chips using CMOS technology. , 2013, , .		11
61	Distributed Sensing and Stimulation Systems for Sense of Touch Restoration in Prosthetics. , 2017, , .		11
62	A Tactile Sensing System Based on Arrays of Piezoelectric Polymer Transducers. , 0, , .		10
63	Preliminary evaluation of the tactile feedback system based on artificial skin and electrotactile stimulation. , 2015, 2015, 4554-7.		10
64	Approximate FPGA Implementation of CORDIC for Tactile Data Processing Using Speculative Adders. , 2017, , .		10
65	Inexact Arithmetic Circuits for Energy Efficient IoT Sensors Data Processing. , 2018, , .		10
66	An Efficient Selection-Based kNN Architecture for Smart Embedded Hardware Accelerators. IEEE Open Journal of Circuits and Systems, 2021, 2, 534-545.	1.9	10
67	Piezoelectric polymer oxide semiconductor field effect transistor (POSFET) devices for touch sensing. , 2009, , .		9
68	SPICE model for Piezoelectric Bender Generators. , 2009, , .		9
69	Analysis of self-powered vibration-based energy scavenging system. , 2010, , .		9
70	CMOS Implementation of POSFET Tactile Sensing Arrays with on Chip Readout. , 2010, , .		9
71	An event-driven POSFET taxel for sustained and transient sensing. , 2016, , .		9
72	Data Oriented Approximate K-Nearest Neighbor Classifier for Touch Modality Recognition. , 2019, , .		9

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73	1-D Convolutional Neural Networks for Touch Modalities Classification. , 2021, , .		9
74	A Comparative Study of Various Probability Density Estimation Methods for Data Analysis. International Journal of Computational Intelligence Systems, 2008, 1, 188-201.	2.7	8
75	Development and characterization of touch sensing devices for robotic applications. , 2009, , .		8
76	Low-noise low-power CMOS preamplifier for multisite extracellular neuronal recordings. Microelectronics Journal, 2009, 40, 1779-1787.	2.0	8
77	Interface electronics design for POSFET devices based tactile sensing systems. , 2010, , .		8
78	Time-based calibration-less read-out circuit for interfacing wide range MOX gas sensors. The Integration VLSI Journal, 2018, 63, 232-239.	2.1	8
79	Temporal Asynchrony but Not Total Energy Nor Duration Improves the Judgment of Numerosity in Electrotactile Stimulation. Frontiers in Bioengineering and Biotechnology, 2020, 8, 555.	4.1	8
80	Tactile Sensing: Definitions and Classification. , 2013, , 13-17.		8
81	Low Power Approximate Multipliers for Energy Efficient Data Processing. Journal of Low Power Electronics, 2018, 14, 110-117.	0.6	8
82	Feature extraction circuit for optical character recognition. Electronics Letters, 1994, 30, 769-771.	1.0	7
83	Title is missing!. Analog Integrated Circuits and Signal Processing, 1999, 18, 163-173.	1.4	7
84	Behavioral models of basic mixed-mode circuits: practical issues and application. , 2007, , .		7
85	Mixed-mode behavioral model of flexray physical layer transceiver. , 2009, , .		7
86	Tactile sensors with integrated piezoelectric polymer and low voltage organic thin-film transistors. , 2014, , .		7
87	Towards the integration of e-skin into prosthetic devices. , 2016, , .		7
88	Tunable Floating-Point for Artificial Neural Networks. , 2018, , .		7
89	Wearable System for Sensory Substitution for Prosthetics. , 2018, , .		7
90	Algorithmic Level Approximate Computing for Machine Learning Classifiers. , 2019, , .		7

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91	Modelling charge injection in MOS analogue switches using a compact model in a deep submicron technology. IET Circuits, Devices and Systems, 2006, 153, 269.	0.6	6
92	On the Performance Degradation of Poly(3-Hexylthiophene) Field-Effect Transistors. IEEE Transactions on Device and Materials Reliability, 2015, 15, 342-351.	2.0	6
93	153dB Dynamic Range Calibration-Less Gas Sensor Interface Circuit with Quasi-Digital Output. , 2017, , .		6
94	Energy Efficient System for Tactile Data Decoding Using an Ultra-Low Power Parallel Platform. , 2017, , .		6
95	Singular value decomposition FPGA implementation for tactile data processing. , 2015, , .		5
96	Assessment of FPGA Implementations of One Sided Jacobi Algorithm for Singular Value Decomposition. , 2015, , .		5
97	Tunable Floating-Point for Embedded Machine Learning Algorithms Implementation. , 2018, , .		5
98	Multi-Channel Electrotactile Stimulation System for Touch Substitution: A Case Study. , 2018, , .		5
99	Touch Modality Classification using Spiking Neural Networks and Supervised-STDP Learning. , 2021, , .		5
100	A mixed-mode behavioral model of a Controller-Area-Network bus transceiver: a case study. , 2007, , .		4
101	Identification and validation of a fractional order dynamic model for a piezoelectric tactile sensor. , 2010, , .		4
102	Interface electronics for tactile sensing arrays. , 2011, , .		4
103	Smart readout design for tactile sensing devices. , 2011, , .		4
104	FPGA implementation of fixed point CORDIC-SVD for E-skin systems. , 2015, , .		4
105	Wide range resistance to current conversion circuit for resistive gas sensors applications. , 2016, , .		4
106	CMOS Dynamic Tactile Sensor. , 2017, , .		4
107	Interface Circuits Based on FPGA for Tactile Sensor Systems. , 2017, , .		4
108	Approximate Computing Techniques for Low Power Implementation of Reconfigurable Coordinate Rotation Digital Computer Circuits. Journal of Low Power Electronics, 2017, 13, 196-204.	0.6	4

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109	TACTILE SENSING ARRAYS FOR HUMANOID ROBOTS USING PIEZO-POLYMER-FET DEVICES. , 2008, , .		4
110	Near Sensors Computation based on Embedded Machine Learning for Electronic Skin. Procedia Manufacturing, 2020, 52, 295-300.	1.9	4
111	Full-hand electrotactile feedback using electronic skin and matrix electrodes for high-bandwidth humanâ€“machine interfacing. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, .	3.4	4
112	Integrated low noise low power interface for neural bio-potentials recording and conditioning. , 2005, , .		3
113	Integrated low noise preamplifier for biologic-electronics interfaces. , 0, , .		3
114	Modelling mismatch effects in CMOS translinear loops and current mode multipliers. , 0, , .		3
115	A behavioral model for the non-linear on-resistance in sample-and-hold analog switches. , 0, , .		3
116	Assessment of the MAC Layer Behavior of Wireless Sensor Networks Simulators Using Experimental Testbeds. , 2007, , .		3
117	SPICE model of lossy piezoelectric polymers. , 2008, , .		3
118	EXPERIMENTAL RESULTS OF PIEZOELECTRIC BENDER GENERATORS FOR THE ENERGY SUPPLY OF SMART WIRELESS SENSORS. , 2008, , .		3
119	Human Tactile Sensing. , 2013, , 19-41.		3
120	Experimental characterization of dedicated front-end electronics for piezoelectric tactile sensing arrays. The Integration VLSI Journal, 2018, 63, 266-272.	2.1	3
121	Low Power Electronic System for Tactile Sensory Feedback for Prosthetics. Journal of Low Power Electronics, 2019, 15, 95-103.	0.6	3
122	Energy Efficient Implementation of Machine Learning Algorithms on Hardware Platforms. , 2019, , .		3
123	Stochastic Supervised Learning Algorithms with Local and Adaptive Learning Rate for Recognising Hand-Written Characters. Lecture Notes in Computer Science, 2002, , 619-624.	1.3	3
124	A Convolutional Neural Network-Based Method for Discriminating Shadowed Targets in Frequency-Modulated Continuous-Wave Radar Systems. Sensors, 2022, 22, 1048.	3.8	3
125	Convolutional Neural Networks Based Tactile Object Recognition for Tactile Sensing System. Lecture Notes in Electrical Engineering, 2022, , 280-285.	0.4	3
126	Tactile Classification of Object Materials for Virtual Reality based Robot Teleoperation. , 2022, , .		3

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127	A hardware implementation of hierarchical Neural Networks for real-time quality control systems in industrial applications. Lecture Notes in Computer Science, 1997, , 1229-1234.	1.3	2
128	Wireless Sensor Networks Power-Aware Deployment. , 2008, , .		2
129	A Systematic Development Methodology for Mixed-Mode Behavioral Models of In-Vehicle Embedded Electronic Systems. Eurasip Journal on Embedded Systems, 2010, 2010, 1-11.	1.2	2
130	System verification of flexray communication networks through behavioral simulations. , 2010, , .		2
131	Bias circuit design for POSFET based tactile sensing devices. , 2011, , .		2
132	A scheme for measuring and extracting level-1 parameter of FET device applied toward POSFET sensors array. , 2011, , .		2
133	A generic framework for failure modes and effects analysis of automotive networks. , 2011, , .		2
134	Touch Sensingâ€"Why and Where?. , 2013, , 3-12.		2
135	Model-Based Simulation Framework for FlexRay Communication Systems. Journal of Circuits, Systems and Computers, 2016, 25, 1650137.	1.5	2
136	Efficient Machine Learning Algorithm for Embedded Tactile Data Processing. , 2021, , .		2
137	Efficient FPGA Implementation of Approximate Singular Value Decomposition based on Shallow Neural Networks. , 2021, , .		2
138	A Shallow Neural Network for Real-Time Embedded Machine Learning for Tensorial Tactile Data Processing. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4232-4244.	5.4	2
139	Piezo-Polymer-FET Devices Based Tactile Sensors for Humanoid Robots. Lecture Notes in Electrical Engineering, 2010, , 369-372.	0.4	2
140	An Energy Efficient E-Skin Embedded System for Real-Time Tactile Data Decoding. Journal of Low Power Electronics, 2018, 14, 101-109.	0.6	2
141	Novel Wearable Tactile Feedback System for post-stroke Rehabilitation. , 2021, , .		2
142	Hybrid Fixed-point/Binary Convolutional Neural Network Accelerator for Real-time Tactile Processing. , 2021, , .		2
143	A Novel Tactile Sensing System for Robotic Tactile Perception of Object Properties. Lecture Notes in Electrical Engineering, 2023, , 182-187.	0.4	2
144	Gradient descent learning algorithm for hierarchical neural networks: A case study in industrial quality. Lecture Notes in Computer Science, 1999, , 578-587.	1.3	1

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145	A current-mode two-quadrant multiplier for analogue array-based neural systems. International Journal of Electronics, 2000, 87, 407-411.	1.4	1
146	Modeling of lossy piezoelectric polymers in SPICE. Proceedings of SPIE, 2008, , .	0.8	1
147	Identification and validation of a lumped parameters model for the dielectric relaxation of a piezoelectric tactile sensor. , 2010, , .		1
148	An approach to realize high value resistance using PMOS device at weak inversion for POSFET sensor. , 2011, , .		1
149	Bending response of PVDF piezoelectric sensors. , 2012, , .		1
150	POSFET touch sensing transducers: Interface electronics design methodology based on the transconductance-to-drain-current efficiency gm/ID. Sensors and Actuators A: Physical, 2013, 201, 377-386.	4.1	1
151	High accuracy resistance to current circuit design for resistive gas sensor biomedical applications. , 2015, , .		1
152	Design of Operational Transconductance Amplifiers for voltage to current conversion in gas sensing applications. , 2016, , .		1
153	Differential R-to-I conversion circuit for gas sensing in biomedical applications. , 2016, , .		1
154	Flexible hardware architecture for the generation of ultrasound pulses in medical imaging. , 2016, , .		1
155	CMOS event-driven tactile sensor circuit. The Integration VLSI Journal, 2018, 63, 315-322.	2.1	1
156	FPGA Implementation of Approximate CORDIC Circuits for Energy Efficient Applications. , 2019, , .		1
157	Introduction to the Special Issue on the 1st IEEE International Conference on Artificial Intelligence Circuits and Systems (AICAS 2019). IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2019, 9, 595-597.	3.6	1
158	Introduction to the Special Issue on the 2nd IEEE International Conference on Artificial Intelligence Circuits and Systems (AICAS 2020). IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2020, 10, 403-405.	3.6	1
159	Back-Propagation Learning Algorithms for Analog VLSI Implementation. , 1994, , 35-44.		1
160	A VLSI Image Processing Architecture Dedicated to Real-Time Quality Control Analysis in an Industrial Plant. Real Time Imaging, 1996, 2, 361-371.	1.6	0
161	â€œSoftâ€œ Acoustic Event Detectors for Limited Resources Platforms. , 2008, , .		0
162	Errata for "SPICE model for lossy piezoelectric polymers" [Feb 09 387-395]. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2009, 56, 1288-1288.	3.0	0

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163	High abstraction level CAD tool implementation of MOS drain current models. Microelectronics Journal, 2009, 40, 1225-1234.	2.0	0
164	Signal-to-noise ratio evaluation for embedded wireless sensor nodes: A novel methodology. , 2009, , .		0
165	Reliable Event Detectors for Constrained Resources Wireless Sensor Node Hardware. Eurasip Journal on Embedded Systems, 2009, 2009, 474903.	1.2	0
166	Design and simulation of automotive communication networks: the challenges. Elektrotechnik Und Informationstechnik, 2011, 128, 228-233.	1.1	0
167	Integrated Tactile Sensing on Silicon. , 2013, , 139-152.		0
168	Resiliency in nanometer CMOS systems: An overview. , 2016, , .		0
169	Embedded Electronic System Based on Dedicated Hardware DSPs for Electronic Skin Implementation. Procedia Technology, 2016, 26, 43-50.	1.1	0
170	Improved event-driven touch CMOS sensor. , 2017, , .		0
171	Selected Articles from the NGCAS 2018 Conference. Journal of Low Power Electronics, 2019, 15, 27-29.	0.6	0
172	Guest Editorial: Special Issue on Selected Papers From IEEE ISCAS 2019. IEEE Transactions on Biomedical Circuits and Systems, 2019, 13, 1125-1127.	4.0	0
173	Editorial of Special Issue â€œTactile Sensing Technology and Systemsâ€• Micromachines, 2020, 11, 506.	2.9	0
174	A Comparative Study of Various Probability Density Estimation Methods for Data Analysis. International Journal of Computational Intelligence Systems, 2008, 1, 188.	2.7	0
175	SIGNAL PROCESSING AND ACOUSTIC EVENT DETECTION FOR WIRELESS SMART SENSORS. , 2008, , .		0
176	BATTERY CURRENT CONSUMPTION MEASUREMENT SYSTEM FOR LIFETIME ESTIMATION OF WIRELESS SENSOR NODES. , 2008, , .		0
177	POSFET Iâ€”The Touch Sensing Device. , 2013, , 153-175.		0
178	POSFET Iiâ€”The Tactile Sensing Chip. , 2013, , 177-194.		0
179	System Issues, Requirements and Expectations. , 2013, , 43-78.		0
180	Selected Articles from the NGCAS 2017 Conference. Journal of Low Power Electronics, 2018, 14, 99-100.	0.6	0

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181	Approximate Computing Circuits for Embedded Tactile Data Processing. Electronics (Switzerland), 2022, 11, 190.	3.1	0