Jie Han

List of Publications by Year
in descending order

106 papers	4,817 citations

230014

27 h-index	

162838

57 g-index	

106 all docs	106 docs citations

106 times ranked	2130 citing authors

#	Article	IF	Citations
1	Low-Power Approximate Logarithmic Squaring Circuit Design for DSP Applications. IEEE Transactions on Emerging Topics in Computing, 2022, 10, 500-506.	3.2	6
2	Hybrid Partial Product-Based High-Performance Approximate Recursive Multipliers. IEEE Transactions on Emerging Topics in Computing, 2022, 10, 507-513.	3.2	19
3	Highly accurate division and square root circuits by exploiting signal correlation in stochastic computing. International Journal of Circuit Theory and Applications, 2022, 50, 1375-1385.	1.3	5
4	Design of Majority Logic-Based Approximate Booth Multipliers for Error-Tolerant Applications. IEEE Nanotechnology Magazine, 2022, 21, 81-89.	1.1	18
5	A Genetic-algorithm-based Approach to the Design of DCT Hardware Accelerators. ACM Journal on Emerging Technologies in Computing Systems, 2022, 18, 1-25.	1.8	8
6	An Energy-Efficient Approximate Divider Based on Logarithmic Conversion and Piecewise Constant Approximation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2022, 69, 2655-2668.	3.5	4
7	Upward Packet Popup for Deadlock Freedom in Modular Chiplet-Based Systems. , 2022, , .		5
8	A Survey of Stochastic Computing Neural Networks for Machine Learning Applications. IEEE Transactions on Neural Networks and Learning Systems, 2021, 32, 2809-2824.	7.2	86
9	A Deflection-Based Deadlock Recovery Framework to Achieve High Throughput for Faulty NoCs. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 2170-2183.	1.9	4
10	An Improved Logarithmic Multiplier for Energy-Efficient Neural Computing. IEEE Transactions on Computers, 2021, 70, 614-625.	2.4	53
11	High Performance CNN Accelerators Based on Hardware and Algorithm Co-Optimization. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 250-263.	3.5	48
12	Fast and low-power leading-one detectors for energy-efficient logarithmic computing. IET Computers and Digital Techniques, 2021, 15, 241-250.	0.9	2
13	Non-Volatile Approximate Arithmetic Circuits Using Scalable Hybrid Spin-CMOS Majority Gates. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 1217-1230.	3.5	15
14	A Logarithmic Floating-Point Multiplier for the Efficient Training of Neural Networks. , 2021, , .		9
15	Accelerating Stochastic Computing Using Deterministic Halton Sequences. IEEE Transactions on Circuits and Systems II: Express Briefs, 2021, 68, 3351-3355.	2.2	6
16	Design and Implementation of a Highly Accurate Stochastic Spiking Neural Network. , 2021, , .		1
17	Absolute Subtraction and Division Circuits Using Uncorrelated Random Bitstreams in Stochastic Computing. , 2021, , .		2
18	A Review of Deterministic Approaches to Stochastic Computing. , 2021, , .		1

#	ARTICLE	IF	CITATIONS
19	A Novel Heuristic Search Method for Two-Level Approximate Logic Synthesis. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 654-669.	1.9	9
20	A Survey of Coarse-Grained Reconfigurable Architecture and Design. ACM Computing Surveys, 2020, 52, 1-39.	16.1	119
21	Improving the Accuracy and Hardware Efficiency of Neural Networks Using Approximate Multipliers. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2020, 28, 317-328.	2.1	87
22	Achieving Flexible Global Reconfiguration in NoCs Using Reconfigurable Rings. IEEE Transactions on Parallel and Distributed Systems, 2020, 31, 611-622.	4.0	7
23	Exploiting Asymmetry in eDRAM Errors for Redundancy-Free Error-Tolerant Design. IEEE Transactions on Emerging Topics in Computing, 2020, , 1-1.	3.2	4
24	Dynamic Stochastic Computing for Digital Signal Processing Applications. , 2020, , .		5
25	Aggressive Fine-Grained Power Gating of NoC Buffers. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 3177-3189.	1.9	3
26	Approximate Arithmetic Circuits: A Survey, Characterization, and Recent Applications. Proceedings of the IEEE, 2020, 108, 2108-2135.	16.4	155
27	Introduction to Dynamic Stochastic Computing. IEEE Circuits and Systems Magazine, 2020, 20, 19-33.	2.6	15
28	Profile-Based Output Error Compensation for Approximate Arithmetic Circuits. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 4707-4718.	3.5	9
29	Design, evaluation and application of approximate-truncated Booth multipliers. IET Circuits, Devices and Systems, 2020, 14, 1305-1317.	0.9	3
30	Low-Power Approximate Unsigned Multipliers With Configurable Error Recovery. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 189-202.	3.5	56
31	A High-Performance and Energy-Efficient FIR Adaptive Filter Using Approximate Distributed Arithmetic Circuits. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 313-326.	3.5	42
32	A Lifetime Reliability-Constrained Runtime Mapping for Throughput Optimization in Many-Core Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2019, 38, 1771-1784.	1.9	5
33	An Energy-Efficient and Noise-Tolerant Recurrent Neural Network Using Stochastic Computing. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 2213-2221.	2.1	30
34	Low-Power Unsigned Divider and Square Root Circuit Designs Using Adaptive Approximation. IEEE Transactions on Computers, 2019, 68, 1635-1646.	2.4	21
35	Pj-AxMTJ: Process-in-memory with Joint Magnetization Switching for Approximate Computing in Magnetic Tunnel Junction. , 2019, , .		4
36	Characterizing Approximate Adders and Multipliers Optimized under Different Design Constraints. , 2019, , .		15

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37	A Hardware-Efficient Logarithmic Multiplier with Improved Accuracy. , 2019, , .		38
38	Design and Analysis of Majority Logic Based Approximate Radix-4 Booth Encoders. , 2019, , .		8
39	Approximate Leading One Detector Design for a Hardware-Efficient Mitchell Multiplier. , 2019, , .		12
40	Low-Power Approximate Multipliers Using Encoded Partial Products and Approximate Compressors. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2018, 8, 404-416.	2.7	142
41	An energy-efficient stochastic computational deep belief network. , 2018, , .		13
42	Design, Evaluation and Application of Approximate High-Radix Dividers. IEEE Transactions on Multi-Scale Computing Systems, 2018, 4, 299-312.	2.5	24
43	Toward Energy-Efficient Stochastic Circuits Using Parallel Sobol Sequences. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2018, 26, 1326-1339.	2.1	46
44	A Stochastic Computational Multi-Layer Perceptron with Backward Propagation. IEEE Transactions on Computers, 2018, 67, 1273-1286.	2.4	73
45	Expression-based analyses indicate a central role for hypoxia in driving tumor plasticity through microenvironment remodeling and chromosomal instability. Npj Systems Biology and Applications, 2018, 4, 38.	1.4	8
46	Approximate Arithmetic Circuits and Their Applications. , 2018, , .		0
47	Variation-Resilient True Random Number Generators Based on Multiple STT-MTJs. IEEE Nanotechnology Magazine, 2018, 17, 1270-1281.	1.1	24
48	Gradient Descent Using Stochastic Circuits for Efficient Training of Learning Machines. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2018, 37, 2530-2541.	1.9	27
49	Stochastic Analysis of Multiplex Boolean Networks for Understanding Epidemic Propagation. IEEE Access, 2018, 6, 35292-35304.	2.6	21
50	Approximate On-chip Memory Optimization Method For Deep Residual Networks. , 2018, , .		0
51	Majority-Based Spin-CMOS Primitives for Approximate Computing. IEEE Nanotechnology Magazine, 2018, , 1-1.	1.1	30
52	Scalable Construction of Approximate Multipliers With Formally Guaranteed Worst Case Error. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2018, 26, 2572-2576.	2.1	34
53	An Energy-Efficient Online-Learning Stochastic Computational Deep Belief Network. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2018, 8, 454-465.	2.7	14
54	Adaptive approximation in arithmetic circuits: A low-power unsigned divider design. , 2018, , .		20

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55	Automatic Selection of Process Corner Simulations for Faster Design Verification. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2018, 37, 1312-1316.	1.9	8
56	Feedback-Based Low-Power Soft-Error-Tolerant Design for Dual-Modular Redundancy. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2018, 26, 1585-1589.	2.1	18
57	Design of Approximate Radix-4 Booth Multipliers for Error-Tolerant Computing. IEEE Transactions on Computers, 2017, 66, 1435-1441.	2.4	201
58	Algorithm and Design of a Fully Parallel Approximate Coordinate Rotation Digital Computer (CORDIC). IEEE Transactions on Multi-Scale Computing Systems, 2017, 3, 139-151.	2.5	29
59	Energy efficient stochastic computing with Sobol sequences. , 2017, , .		65
60	A true random number generator based on parallel STT-MTJs. , 2017, , .		31
61	Design of Approximate High-Radix Dividers by Inexact Binary Signed-Digit Addition. , 2017, , .		16
62	A Stochastic Computational Approach for the Analysis of Fuzzy Systems. IEEE Access, 2017, 5, 13465-13477.	2.6	14
63	A Review, Classification, and Comparative Evaluation of Approximate Arithmetic Circuits. ACM Journal on Emerging Technologies in Computing Systems, 2017, 13, 1-34.	1.8	179
64	A stochastic analysis of competing failures with propagation effects in functional dependency gates. IISE Transactions, 2017, 49, 1050-1064.	1.6	10
65	Approximate reliability of multiâ€state twoâ€terminal networks by stochastic analysis. IET Networks, 2017, 6, 116-124.	1.1	3
66	Approximate Analysis of Multi-State Weighted k-Out-of-n Systems Applied to Transmission Lines. Energies, 2017, 10, 1740.	1.6	4
67	Hardware ODE Solvers using Stochastic Circuits. , 2017, , .		10
68	A Multi-accuracy-Level Approximate Memory Architecture Based on Data Significance Analysis. , 2016, , .		13
69	Identification of Potential Drug Targets in Cancer Signaling Pathways using Stochastic Logical Models. Scientific Reports, 2016, 6, 23078.	1.6	24
70	Stochastic Circuit Design and Performance Evaluation of Vector Quantization for Different Error Measures. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2016, 24, 3169-3183.	2.1	22
71	Reliability Evaluation of Phased-Mission Systems Using Stochastic Computation. IEEE Transactions on Reliability, 2016, 65, 1612-1623.	3.5	21
72	Adaptive Filter Design Using Stochastic Circuits. , 2016, , .		5

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73	A novel gate grading approach for soft error tolerance in combinational circuits. , 2016, , .		1
74	Introduction to approximate computing. , 2016, , .		9
75	Design, evaluation and fault-tolerance analysis of stochastic FIR filters. Microelectronics Reliability, 2016, 57, 111-127.	0.9	31
76	Approximate Radix-8 Booth Multipliers for Low-Power and High-Performance Operation. IEEE Transactions on Computers, 2016, 65, 2638-2644.	2.4	156
77	On the Design of Approximate Restoring Dividers for Error-Tolerant Applications. IEEE Transactions on Computers, 2016, 65, 2522-2533.	2.4	51
78	Stochastic circuit design and performance evaluation of vector quantization. , 2015, , .		5
79	DPALS: A dynamic programming-based algorithm for two-level approximate logic synthesis. , 2015, , .		7
80	HSPICE macromodel of a PMA racetrack memory. , 2015, , .		1
81	A novel approach using a minimum cost maximum flow algorithm for fault-tolerant topology reconfiguration in NoC architectures. , 2015, , .		6
82	Design and evaluation of stochastic FIR filters. , 2015, , .		5
83	Approximate compressors for error-resilient multiplier design. , 2015, , .		93
84	A Flexible Energy- and Reliability-Aware Application Mapping for NoC-Based Reconfigurable Architectures. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2015, 23, 2566-2580.	2.1	20
85	Naturally random. Nature Nanotechnology, 2015, 10, 1011-1012.	15.6	3
86	Design of Approximate Unsigned Integer Non-restoring Divider for Inexact Computing. , 2015, , .		48
87	Transmission gate-based approximate adders for inexact computing. , 2015, , .		52
88	A Stochastic Approach for the Analysis of Dynamic Fault Trees With Spare Gates Under Probabilistic Common Cause Failures. IEEE Transactions on Reliability, 2015, 64, 878-892.	3.5	33
89	Design and Analysis of Approximate Compressors for Multiplication. IEEE Transactions on Computers, 2015, 64, 984-994.	2.4	415
90	An Analytical Framework for Evaluating the Error Characteristics of Approximate Adders. IEEE Transactions on Computers, 2015, 64, 1268-1281.	2.4	85

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91	On the Nonvolatile Performance of Flip-Flop/SRAM Cells With a Single MTJ. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2015, 23, 1160-1164.	2.1	8
92	A memristor-based memory cell with no refresh. , 2014, , .		7
93	A system-level scheme for resistance drift tolerance of a multilevel phase change memory. , 2014, , .		6
94	A low-power, high-performance approximate multiplier with configurable partial error recovery. , 2014, , .		46
95	Gene perturbation and intervention in context-sensitive stochastic Boolean networks. BMC Systems Biology, 2014, 8, 60.	3.0	10
96	Design and Evaluation of Multiple Valued Logic Gates Using Pseudo N-Type Carbon Nanotube FETs. IEEE Nanotechnology Magazine, 2014, 13, 695-708.	1.1	118
97	A Stochastic Computational Approach for Accurate and Efficient Reliability Evaluation. IEEE Transactions on Computers, 2014, 63, 1336-1350.	2.4	102
98	A low-power, high-performance approximate multiplier with configurable partial error recovery. , 2014, , .		43
99	Approximate XOR/XNOR-based adders for inexact computing. , 2013, , .		173
100	New Metrics for the Reliability of Approximate and Probabilistic Adders. IEEE Transactions on Computers, 2013, 62, 1760-1771.	2.4	425
101	A 6.0â€"13.5 GHz Alias-Locked Loop Frequency Synthesizer in 130 nm CMOS. IEEE Transactions on Circuits and Systems I: Regular Papers, 2013, 60, 108-115.	3.5	13
102	Approximate computing: An emerging paradigm for energy-efficient design. , 2013, , .		726
103	A PCM-based TCAM cell using NDR. , 2013, , .		1
104	On the Effects of Intra-gate Resistive Open Defects in Gates at Nanoscaled CMOS. , 2011, , .		0
105	On the Reliability of Computational Structures Using Majority Logic. IEEE Nanotechnology Magazine, 2011, 10, 1099-1112.	1.1	29
106	A stochastic computing architecture for local contrast and mean image thresholding algorithm. International Journal of Circuit Theory and Applications, 0, , .	1.3	1