Jie Han

List of Publications by Citations

94 papers	**2,717** citations
24 h-index	**50** g-index
106 ext. papers	**3,870** ext. citations
3.5 avg, IF	**5.88** L-index

#	Paper	IF	Citations
94	Approximate computing: An emerging paradigm for energy-efficient design **2013**,		454
93	. *IEEE Transactions on Computers*, **2013**, 62, 1760-1771	2.5	284
92	. *IEEE Transactions on Computers*, **2015**, 64, 984-994	2.5	235
91	Design of Approximate Radix-4 Booth Multipliers for Error-Tolerant Computing. *IEEE Transactions on Computers*, **2017**, 66, 1435-1441	2.5	123
90	Approximate XOR/XNOR-based adders for inexact computing **2013**,		119
89	A Review, Classification, and Comparative Evaluation of Approximate Arithmetic Circuits. *ACM Journal on Emerging Technologies in Computing Systems*, **2017**, 13, 1-34	1.7	104
88	Approximate Radix-8 Booth Multipliers for Low-Power and High-Performance Operation. *IEEE Transactions on Computers*, **2016**, 65, 2638-2644	2.5	102
87	Design and Evaluation of Multiple Valued Logic Gates Using Pseudo N-Type Carbon Nanotube FETs. *IEEE Nanotechnology Magazine*, **2014**, 13, 695-708	2.6	79
86	. *IEEE Transactions on Computers*, **2014**, 63, 1336-1350	2.5	68
85	An Analytical Framework for Evaluating the Error Characteristics of Approximate Adders. *IEEE Transactions on Computers*, **2015**, 64, 1268-1281	2.5	64
84	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	5.2	57
83	Approximate compressors for error-resilient multiplier design **2015**,		45
82	A Stochastic Computational Multi-Layer Perceptron with Backward Propagation. *IEEE Transactions on Computers*, **2018**, 67, 1273-1286	2.5	40
81	Approximate Arithmetic Circuits: A Survey, Characterization, and Recent Applications. *Proceedings of the IEEE*, **2020**, 108, 2108-2135	14.3	39
80	Energy efficient stochastic computing with Sobol sequences **2017**,		34
79	A Survey of Coarse-Grained Reconfigurable Architecture and Design. *ACM Computing Surveys*, **2020**, 52, 1-39	13.4	34
78	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	2.6	34

77	Transmission gate-based approximate adders for inexact computing **2015**,		33
76	*. IEEE Transactions on Computers*, **2016**, 65, 2522-2533	2.5	33
75	A low-power, high-performance approximate multiplier with configurable partial error recovery **2014**,		32
74	Design of Approximate Unsigned Integer Non-restoring Divider for Inexact Computing **2015**,		29
73	A low-power, high-performance approximate multiplier with configurable partial error recovery **2014**,		29
72	Low-Power Approximate Unsigned Multipliers With Configurable Error Recovery. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2019**, 66, 189-202	3.9	27
71	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	4.6	25
70	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	3.9	23
69	Toward Energy-Efficient Stochastic Circuits Using Parallel Sobol Sequences. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2018**, 26, 1326-1339	2.6	22
68	On the Reliability of Computational Structures Using Majority Logic. *IEEE Nanotechnology Magazine* , **2011**, 10, 1099-1112	2.6	20
67	An Improved Logarithmic Multiplier for Energy-Efficient Neural Computing. *IEEE Transactions on Computers*, **2021**, 70, 614-625	2.5	20
66	A true random number generator based on parallel STT-MTJs **2017**,		18
65	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	2.6	18
64	Identification of Potential Drug Targets in Cancer Signaling Pathways using Stochastic Logical Models. *Scientific Reports*, **2016**, 6, 23078	4.9	18
63	*. IEEE Transactions on Circuits and Systems I: Regular Papers*, **2021**, 68, 250-263	3.9	18
62	Stochastic Analysis of Multiplex Boolean Networks for Understanding Epidemic Propagation. *IEEE Access*, **2018**, 6, 35292-35304	3.5	18
61	Design, evaluation and fault-tolerance analysis of stochastic FIR filters. *Microelectronics Reliability*, **2016**, 57, 111-127	1.2	17
60	A Survey of Stochastic Computing Neural Networks for Machine Learning Applications. *IEEE Transactions on Neural Networks and Learning Systems*, **2021**, 32, 2809-2824	10.3	17

59	Reliability Evaluation of Phased-Mission Systems Using Stochastic Computation. *IEEE Transactions on Reliability*, **2016**, 65, 1612-1623	4.6	16
58	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	2.6	16
57	Majority-Based Spin-CMOS Primitives for Approximate Computing. *IEEE Nanotechnology Magazine*, **2018**, 1-1	2.6	16
56	A Hardware-Efficient Logarithmic Multiplier with Improved Accuracy **2019**,		15
55	. *IEEE Transactions on Multi-Scale Computing Systems*, **2018**, 4, 299-312		15
54	Scalable Construction of Approximate Multipliers With Formally Guaranteed Worst Case Error. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2018**, 26, 2572-2576	2.6	15
53	Algorithm and Design of a Fully Parallel Approximate Coordinate Rotation Digital Computer (CORDIC). *IEEE Transactions on Multi-Scale Computing Systems*, **2017**, 3, 139-151		14
52	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	5.2	14
51	. *IEEE Transactions on Computers*, **2019**, 68, 1635-1646	2.5	14
50	Design of Approximate High-Radix Dividers by Inexact Binary Signed-Digit Addition **2017**,		14
49	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	2.6	14
48	A Stochastic Computational Approach for the Analysis of Fuzzy Systems. *IEEE Access*, **2017**, 5, 13465-13477	3.5	13
47	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	2.5	13
46	Variation-Resilient True Random Number Generators Based on Multiple STT-MTJs. *IEEE Nanotechnology Magazine*, **2018**, 17, 1270-1281	2.6	12
45	**2018**,		11
44	Characterizing Approximate Adders and Multipliers Optimized under Different Design Constraints **2019**,		10
43	An energy-efficient stochastic computational deep belief network **2018**,		9
42	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	2.6	9

41	A stochastic analysis of competing failures with propagation effects in functional dependency gates. *IISE Transactions*, **2017**, 49, 1050-1064	3.3	9
40	A Multi-accuracy-Level Approximate Memory Architecture Based on Data Significance Analysis **2016**,		9
39	Approximate Leading One Detector Design for a Hardware-Efficient Mitchell Multiplier **2019**,		8
38	Gene perturbation and intervention in context-sensitive stochastic Boolean networks. *BMC Systems Biology*, **2014**, 8, 60	3.5	7
37	. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2021**, 68, 1217-1230	3.9	7
36	Hardware ODE Solvers using Stochastic Circuits **2017**,		6
35	A 6.0⊓3.5 GHz Alias-Locked Loop Frequency Synthesizer in 130 nm CMOS. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2013**, 60, 108-115	3.9	6
34	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	2.5	5
33	A novel approach using a minimum cost maximum flow algorithm for fault-tolerant topology reconfiguration in NoC architectures **2015**,		5
32	A system-level scheme for resistance drift tolerance of a multilevel phase change memory **2014**,		5
31	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	2.5	5
30	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	2.6	4
29	. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2020**, 67, 4707-4718	3.9	4
28	Low-Power Approximate Logarithmic Squaring Circuit Design for DSP Applications. *IEEE Transactions on Emerging Topics in Computing*, **2020**, 1-1	4.1	4
27	Introduction to approximate computing **2016**,		4
26	A memristor-based memory cell with no refresh **2014**,		4
25	. *IEEE Circuits and Systems Magazine*, **2020**, 20, 19-33	3.2	4
24	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	5	4

23	Computing: Naturally random. *Nature Nanotechnology*, **2015**, 10, 1011-2	28.7	3
22	Adaptive Filter Design Using Stochastic Circuits **2016**,		3
21	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	2.5	3
20	Approximate reliability of multi-state two-terminal networks by stochastic analysis. *IET Networks*, **2017**, 6, 116-124	2.8	3
19	Approximate Analysis of Multi-State Weighted k-Out-of-n Systems Applied to Transmission Lines. *Energies*, **2017**, 10, 1740	3.1	3
18	Design and Analysis of Majority Logic Based Approximate Radix-4 Booth Encoders **2019**,		3
17	. *IEEE Transactions on Emerging Topics in Computing*, **2021**, 1-1	4.1	3
16	Pj-AxMTJ: Process-in-memory with Joint Magnetization Switching for Approximate Computing in Magnetic Tunnel Junction **2019**,		2
15	Stochastic circuit design and performance evaluation of vector quantization **2015**,		2
14	Design and evaluation of stochastic FIR filters **2015**,		2
13	A Genetic-algorithm-based Approach to the Design of DCT Hardware Accelerators. *ACM Journal on Emerging Technologies in Computing Systems*, **2022**, 18, 1-25	1.7	2
12	Achieving Flexible Global Reconfiguration in NoCs Using Reconfigurable Rings. *IEEE Transactions on Parallel and Distributed Systems*, **2020**, 31, 611-622	3.7	2
11	. *IEEE Transactions on Emerging Topics in Computing*, **2020**, 1-1	4.1	2
10	A novel gate grading approach for soft error tolerance in combinational circuits **2016**,		1
9	A PCM-based TCAM cell using NDR **2013**,		1
8	Design of Majority Logic-based Approximate Booth Multipliers for Error-Tolerant Applications. *IEEE Nanotechnology Magazine*, **2022**, 1-1	2.6	1
7	Aggressive Fine-Grained Power Gating of NoC Buffers. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, **2020**, 39, 3177-3189	2.5	1
6	A Logarithmic Floating-Point Multiplier for the Efficient Training of Neural Networks **2021**,		1

LIST OF PUBLICATIONS

5	Design, evaluation and application of approximate-truncated Booth multipliers. *IET Circuits, Devices and Systems*, **2020**, 14, 1305-1317	1.1	0
4	A Deflection-Based Deadlock Recovery Framework to Achieve High Throughput for Faulty NoCs. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, **2020**, 1-1	2.5	0
3	Fast and low-power leading-one detectors for energy-efficient logarithmic computing. *IET Computers and Digital Techniques*, **2021**, 15, 241-250	0.9	0
2	Accelerating Stochastic Computing Using Deterministic Halton Sequences. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2021**, 68, 3351-3355	3.5	0
1	An Energy-Efficient Approximate Divider Based on Logarithmic Conversion and Piecewise Constant Approximation. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2022**, 1-14	3.9	