JÃ¶rg Henkel

List of Publications by Year
in descending order

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155	3,647	279701	360920
papers	citations	23 h-index	35 g-index

156	156	156	1918
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Hardware Approximate Techniques for Deep Neural Network Accelerators: A Survey. ACM Computing Surveys, 2023, 55, 1-36.	16.1	22
2	Towards a New Thermal Monitoring Based Framework for Embedded CPS Device Security. IEEE Transactions on Dependable and Secure Computing, 2022, 19, 524-536.	3.7	15
3	Bridging the Gap Between Voltage Over-Scaling and Joint Hardware Accelerator-Algorithm Closed-Loop. IEEE Transactions on Circuits and Systems for Video Technology, 2022, 32, 398-410.	5.6	6
4	On the Reliability of FeFET On-Chip Memory. IEEE Transactions on Computers, 2022, 71, 947-958.	2.4	15
5	A Framework for Crossing Temperature-Induced Timing Errors Underlying Hardware Accelerators to the Algorithm and Application Layers. IEEE Transactions on Computers, 2022, 71, 349-363.	2.4	5
6	Probability-Driven Evaluation of Lower-Part Approximation Adders. IEEE Transactions on Circuits and Systems II: Express Briefs, 2022, 69, 204-208.	2.2	3
7	Impact of NCFET Technology on Eliminating the Cooling Cost and Boosting the Efficiency of Google TPU. IEEE Transactions on Computers, 2022, 71, 906-918.	2.4	4
8	FeFET-Based Binarized Neural Networks Under Temperature-Dependent Bit Errors. IEEE Transactions on Computers, 2022, 71, 1681-1695.	2.4	10
9	ARMOR: A Reliable and Mobility-Aware RPL for Mobile Internet of Things Infrastructures. IEEE Internet of Things Journal, 2022, 9, 1503-1516.	5.5	12
10	Energy Efficient Edge Computing Enabled by Satisfaction Games and Approximate Computing. IEEE Transactions on Green Communications and Networking, 2022, 6, 281-294.	3.5	17
11	Thermal-Aware Standby-Sparing Technique on Heterogeneous Real-Time Embedded Systems. IEEE Transactions on Emerging Topics in Computing, 2022, 10, 1883-1897.	3.2	11
12	MLCAD: A Survey of Research in Machine Learning for CAD Keynote Paper. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2022, 41, 3162-3181.	1.9	22
13	TherMa-MiCs: Thermal-Aware Scheduling for Fault-Tolerant Mixed-Criticality Systems. IEEE Transactions on Parallel and Distributed Systems, 2022, 33, 1678-1694.	4.0	13
14	FN-CACTI: Advanced CACTI for FinFET and NC-FinFET Technologies. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2022, 30, 339-352.	2.1	8
15	A Survey of Fault-Tolerance Techniques for Embedded Systems From the Perspective of Power, Energy, and Thermal Issues. IEEE Access, 2022, 10, 12229-12251.	2.6	24
16	Variability-Aware Approximate Circuit Synthesis via Genetic Optimization. IEEE Transactions on Circuits and Systems I: Regular Papers, 2022, 69, 4141-4153.	3.5	1
17	CoMeT: An Integrated Interval Thermal Simulation Toolchain for 2D, 2.5D, and 3D Processor-Memory Systems. Transactions on Architecture and Code Optimization, 2022, 19, 1-25.	1.6	7
18	Approximate Decision Trees For Machine Learning Classification on Tiny Printed Circuits. , 2022, , .		4

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19	Power-Efficient Heterogeneous Many-Core Design With NCFET Technology. IEEE Transactions on Computers, 2021, 70, 1484-1497.	2.4	7
20	Automatic Floorplanning and Standalone Generation of Bitstream-Level IP Cores. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2021, 29, 38-50.	2.1	3
21	Post-Silicon Heat-Source Identification and Machine-Learning-Based Thermal Modeling Using Infrared Thermal Imaging. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 694-707.	1.9	10
22	Minimizing Excess Timing Guard Banding Under Transistor Self-Heating Through Biasing at Zero-Temperature Coefficient. IEEE Access, 2021, 9, 30687-30697.	2.6	7
23	Longevity of Commodity DRAMs in Harsh Environments Through Thermoelectric Cooling. IEEE Access, 2021, 9, 83950-83962.	2.6	9
24	FeFET and NCFET for Future Neural Networks: Visions and Opportunities. , 2021, , .		0
25	Special Issue Hack@DAC: Security Competition at the Design Automation Conference. IEEE Design and Test, 2021, 38, 4-4.	1.1	0
26	Reliability-Aware Quantization for Anti-Aging NPUs. , 2021, , .		8
27	Report on First and Second ACM/IEEE Workshop on Machine Learning for CAD (MLCAD). IEEE Design and Test, 2021, 38, 97-99.	1.1	0
28	Open-Source Electronic Design Automation (EDA) Tools. IEEE Design and Test, 2021, 38, 4-4.	1.1	0
29	A Cluster-Based and Drop-aware Extension of RPL to Provide Reliability in IoT Applications. , 2021, , .		2
30	On the Resiliency of NCFET Circuits Against Voltage Over-Scaling. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 1481-1492.	3.5	16
31	Top Picks in Hardware and Embedded Security. IEEE Design and Test, 2021, 38, 4-4.	1.1	0
32	On-Demand Mobile CPU Cooling With Thin-Film Thermoelectric Array. IEEE Micro, 2021, 41, 67-73.	1.8	12
33	AxLS: A Framework for Approximate Logic Synthesis Based on Netlist Transformations. IEEE Transactions on Circuits and Systems II: Express Briefs, 2021, 68, 2845-2849.	2.2	8
34	Machine Intelligence at the Edge. IEEE Design and Test, 2021, 38, 4-4.	1.1	0
35	Multiple approximate instances in neural processing units for energy-efficient circuit synthesis. , 2021, , .		0
36	Cross-Layer Design of Cyberâ€“Physical Systems. IEEE Design and Test, 2021, 38, 4-4.	1.1	0

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37	PROTON: Post-Synthesis Ferroelectric Thickness Optimization for NCFET Circuits. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4299-4309.	3.5	2
38	Impact of NCFET on Neural Network Accelerators. IEEE Access, 2021, 9, 43748-43758.	2.6	1
39	Cross-Layer Approximate Hardware Synthesis for Runtime Configurable Accuracy. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2021, 29, 1231-1243.	2.1	7
40	Approximate Computing for ML. , 2021, , .		22
41	Automated Design Approximation to Overcome Circuit Aging. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4710-4721.	3.5	3
42	Control Variate Approximation for DNN Accelerators. , 2021, , .		16
43	SmartBoost: Lightweight ML-Driven Boosting for Thermally-Constrained Many-Core Processors. , 2021, , .		9
44	Positive/Negative Approximate Multipliers for DNN Accelerators. , 2021, , .		11
45	Stochastic Computing for Neuromorphic Applications. IEEE Design and Test, 2021, 38, 4-4.	1.1	0
46	Machine Learning for Power, Energy, and Thermal Management on Multicore Processors: A Survey. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 101-116.	1.9	58
47	Toward Model Checking-Driven Fair Comparison of Dynamic Thermal Management Techniques Under Multithreaded Workloads. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 1725-1738.	1.9	2
48	Power- and Cache-Aware Task Mapping with Dynamic Power Budgeting for Many-Cores. IEEE Transactions on Computers, 2020, 69, 1-13.	2.4	21
49	A Cross-Layer Gate-Level-to-Application Co-Simulation for Design Space Exploration of Approximate Circuits in HEVC Video Encoders. IEEE Transactions on Circuits and Systems for Video Technology, 2020, 30, 3814-3828.	5.6	29
50	On the Workload Dependence of Self-Heating in FinFET Circuits. IEEE Transactions on Circuits and Systems II: Express Briefs, 2020, 67, 1949-1953.	2.2	9
51	Neural Network-based Performance Prediction for Task Migration on S-NUCA Many-Cores. IEEE Transactions on Computers, 2020, , 1-1.	2.4	12
52	Energy Optimization in NCFET-based Processors. , 2020, , .		2
53	Exposing Hardware Trojans in Embedded Platforms via Short-Term Aging. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 3519-3530.	1.9	9
54	Hybrid Application Mapping for Composable Many-Core Systems: Overview and Future Perspective. Journal of Low Power Electronics and Applications, 2020, 10, 38.	1.3	7

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55	Impacts of Mobility Models on RPL-Based Mobile IoT Infrastructures: An Evaluative Comparison and Survey. IEEE Access, 2020, 8, 167779-167829.	2.6	36
56	Weight-Oriented Approximation for Energy-Efficient Neural Network Inference Accelerators. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 4670-4683.	3.5	54
57	Impact of Interface Traps on Negative Capacitance Transistor: Device and Circuit Reliability. IEEE Journal of the Electron Devices Society, 2020, 8, 1193-1201.	1.2	33
58	Dynamic Power and Energy Management for NCFET-Based Processors. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 3361-3372.	1.9	6
59	A Lightweight Nonlinear Methodology to Accurately Model Multicore Processor Power. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 3152-3164.	1.9	12
60	NPU Thermal Management. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 3842-3855.	1.9	31
61	Hierarchical Classification for Constrained IoT Devices: A Case Study on Human Activity Recognition. IEEE Internet of Things Journal, 2020, 7, 8287-8295.	5.5	29
62	Aging Compensation With Dynamic Computation Approximation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 1319-1332.	3.5	10
63	Design Automation of Approximate Circuits With Runtime Reconfigurable Accuracy. IEEE Access, 2020, 8, 53522-53538.	2.6	36
64	Impact of Self-Heating on Performance, Power and Reliability in FinFET Technology. , 2020, , .		4
65	BTI and HCD Degradation in a Complete 32 Ã— 64 bit SRAM Array â€“ including Sense Amplifiers and Write Drivers â€“ under Processor Activity. , 2020, , .		12
66	Combinatorial Auctions for Temperature-Constrained Resource Management in Manycores. IEEE Transactions on Parallel and Distributed Systems, 2020, 31, 1605-1620.	4.0	5
67	Hardware Trojan Detection Using Controlled Circuit Aging. IEEE Access, 2020, 8, 77415-77434.	2.6	19
68	Approximate Acceleration for CNN-based Applications on IoT Edge Devices. , 2020, , .		12
69	NCFET to Rescue Technology Scaling: Opportunities and Challenges. , 2020, , .		9
70	From the EIC: Education for Cyber-Physical Systems. IEEE Design and Test, 2020, 37, 4-4.	1.1	1
71	Runtime Accuracy-Configurable Approximate Hardware Synthesis Using Logic Gating and Relaxation. , 2020, , .		2
72	From the EIC: Special Issue on Image Processing, Correspondsing Hardware Architectures, and EDA Tools. IEEE Design and Test, 2020, 37, 4-4.	1.1	0

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73	Improved Feature Extraction Method for Sound Recognition Applied to Automatic Sorting of Recycling Wastes. Journal of Information Processing, 2020, 28, 658-665.	0.3	0
74	Towards NN-based Online Estimation of the Full-Chip Temperature and the Rate of Temperature Change. , 2020, , .		5
75	AxHLS. , 2020, , .		11
76	From the EIC: Special Issue on VTS. IEEE Design and Test, 2020, 37, 4-4.	1.1	0
77	From the EIC: From Smartphones to Wearable Devices. IEEE Design and Test, 2020, 37, 4-4.	1.1	0
78	Dynamic Guardband Selection: Thermal-Aware Optimization for Unreliable Multi-Core Systems. IEEE Transactions on Computers, 2019, 68, 53-66.	2.4	5
79	HotSniper: Sniper-Based Toolchain for Many-Core Thermal Simulations in Open Systems. IEEE Embedded Systems Letters, 2019, 11, 54-57.	1.3	24
80	NCFET-Aware Voltage Scaling. , 2019, , .		14
81	Smart Thermal Management for Heterogeneous Multicores. , 2019, , .		7
82	Prediction-Based Task Migration on S-NUCA Many-Cores. , 2019, , .		15
83	New Worst-Case Timing for Standard Cells Under Aging Effects. IEEE Transactions on Device and Materials Reliability, 2019, 19, 149-158.	1.5	14
84	On the Efficiency of Voltage Overscaling under Temperature and Aging Effects. IEEE Transactions on Computers, 2019, 68, 1647-1662.	2.4	19
85	Unveiling the Impact of IR-Drop on Performance Gain in NCFET-Based Processors. IEEE Transactions on Electron Devices, 2019, 66, 3215-3223.	1.6	30
86	Performance, Power and Cooling Trade-Offs with NCFET-based Many-Cores. , 2019, , .		23
87	Oops. ACM Transactions on Internet Technology, 2019, 19, 1-21.	3.0	7
88	Modeling the Interdependences Between Voltage Fluctuation and BTI Aging. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 1652-1665.	2.1	12
89	Modeling and Mitigating Time-Dependent Variability From the Physical Level to the Circuit Level. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 2671-2684.	3.5	15
90	Selecting the Optimal Energy Point in Near-Threshold Computing. , 2019, , .		4

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91	Aging Effects: From Physics to CAD. , 2019, , 43-69.		2
92	From Cloud Down to Things: An Overview of Machine Learning in Internet of Things. IEEE Internet of Things Journal, 2019, 6, 4921-4934.	5.5	158
93	Estimating and Mitigating Aging Effects in Routing Network of FPGAs. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 651-664.	2.1	13
94	A Simulation Study of NBTI Impact on 14-nm Node FinFET Technology for Logic Applications: Device Degradation to Circuit-Level Interaction. IEEE Transactions on Electron Devices, 2019, 66, 271-278.	1.6	46
95	Thermally Composable Hybrid Application Mapping for Real-Time Applications in Heterogeneous Many-Core Systems. , 2019, , .		6
96	Aging-Aware Boosting. IEEE Transactions on Computers, 2018, 67, 1217-1230.	2.4	18
97	Reliability in Super- and Near-Threshold Computing: A Unified Model of RTN, BTI, and PV. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 293-306.	3.5	33
98	Trading Off Temperature Guardbands via Adaptive Approximations. , 2018, , .		14
99	SlackHammer: Logic Synthesis for Graceful Errors Under Frequency Scaling. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2018, 37, 2802-2811.	1.9	7
100	Negative Capacitance Transistor to Address the Fundamental Limitations in Technology Scaling: Processor Performance. IEEE Access, 2018, 6, 52754-52765.	2.6	70
101	Compiler-driven error analysis for designing approximate accelerators. , 2018, , .		17
102	Thermal Safe Power (TSP): Efficient Power Budgeting for Heterogeneous Manycore Systems in Dark Silicon. IEEE Transactions on Computers, 2017, 66, 147-162.	2.4	60
103	Complexity control of HEVC encoders targeting real-time constraints. Journal of Real-Time Image Processing, 2017, 13, 5-24.	2.2	11
104	Ultra-low power and dependability for IoT devices (Invited paper for IoT technologies). , 2017, , .		44
105	CAnDy-TM: Comparative analysis of dynamic thermal management in many-cores using model checking. , 2017, , .		1
106	Towards Aging-Induced Approximations. , 2017, , .		35
107	CoRQ: Enabling Runtime Reconfiguration Under WCET Guarantees for Real-Time Systems. IEEE Embedded Systems Letters, 2017, 9, 77-80.	1.3	12
108	Optimizing temperature guardbands. , 2017, , .		13

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109	Impact of BTI on dynamic and static power: From the physical to circuit level. , 2017, , .		26
110	Power Density-Aware Resource Management for Heterogeneous Tiled Multicores. IEEE Transactions on Computers, 2017, 66, 488-501.	2.4	54
111	FAMe-TM: Formal analysis methodology for task migration algorithms in Many-Core systems. Science of Computer Programming, 2017, 133, 154-174.	1.5	6
112	Theorem proving based Formal Verification of Distributed Dynamic Thermal Management schemes. Journal of Parallel and Distributed Computing, 2017, 100, 157-171.	2.7	11
113	Emerging (un-)reliability based security threats and mitigations for embedded systems. , 2017, , .		17
114	IoT technologies for embedded computing. , 2016, , .		134
115	Reliability-aware design to suppress aging. , 2016, , .		84
116	Content-Aware Low-Power Configurable Aging Mitigation for SRAM Memories. IEEE Transactions on Computers, 2016, 65, 3617-3630.	2.4	7
117	Invited - Cross-layer approximate computing: from logic to architectures. , 2016, , .		134
118	Architecting On-Chip DRAM Cache for Simultaneous Miss Rate and Latency Reduction. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2016, 35, 651-664.	1.9	12
119	Scalable Power Management for On-Chip Systems with Malleable Applications. IEEE Transactions on Computers, 2016, 65, 3398-3412.	2.4	9
120	Two-State Checkpointing for Energy-Efficient Fault Tolerance in Hard Real-Time Systems. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2016, 24, 2426-2437.	2.1	49
121	Task Mapping for Redundant Multithreading in Multi-Cores with Reliability and Performance Heterogeneity. IEEE Transactions on Computers, 2016, 65, 3441-3455.	2.4	24
122	Aging-Aware Voltage Scaling. , 2016, , .		31
123	Towards Performance and Reliability-Efficient Computing in the Dark Silicon Era. , 2016, , .		9
124	Formal Probabilistic Analysis of Distributed Dynamic Thermal Management. , 2015, , .		5
125	Probabilistic Formal Verification Methodology for Decentralized Thermal Management in On-Chip Systems. , 2015, , .		4
126	A low latency generic accuracy configurable adder. , 2015, , .		258

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127	Thermal constrained resource management for mixed ILP-TLP workloads in dark silicon chips. , 2015, , .		68
128	DRVS: Power-efficient reliability management through Dynamic Redundancy and Voltage Scaling under variations. , 2015, , .		40
129	Lucid infrared thermography of thermally-constrained processors. , 2015, , .		22
130	Hayat. , 2015, , .		55
131	New trends in dark silicon. , 2015, , .		86
132	Resource-awareness on heterogeneous MPSoCs for image processing. Journal of Systems Architecture, 2015, 61, 668-680.	2.5	6
133	Dependable embedded systems. IT - Information Technology, 2015, 57, 147-148.	0.6	0
134	TSP: thermal safe power. , 2014, , .		86
135	Towards interdependencies of aging mechanisms. , 2014, , .		60
136	Peak Power Management for scheduling real-time tasks on heterogeneous many-core systems. , 2014, , .		21
137	dTune. , 2014, , .		38
138	The EDA Challenges in the Dark Silicon Era. , 2014, , .		153
139	Power- and area-efficient Approximate Wallace Tree Multiplier for error-resilient systems. , 2014, , .		107
140	Resilience Articulation Point (RAP): Cross-layer dependability modeling for nanometer system-on-chip resilience. Microelectronics Reliability, 2014, 54, 1066-1074.	0.9	27
141	Adaptive embedded computing with i -core. ACM SIGBED Review, 2014, 11, 20-21.	1.8	0
142	Selected Peer-Reviewed Articles from the 4th European Workshop on CMOS Variability, Karlsruhe, Germany, September 9â€“11, 2013. Journal of Low Power Electronics, 2014, 10, 116-117.	0.6	0
143	Test Strategies for Reliable Runtime Reconfigurable Architectures. IEEE Transactions on Computers, 2013, 62, 1494-1507.	2.4	24
144	Reliable on-chip systems in the nano-era. , 2013, , .		156

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145	Thermal management for dependable on-chip systems. , 2013, , .		17
146	Analyzing the thermal hotspots in FPGA-based embedded systems. , 2013, , .		12
147	Formal verification of distributed dynamic thermal management. , 2013, , .		7
148	RASTER. , 2013, , .		20
149	Partial online-synthesis for mixed-grained reconfigurable architectures. , 2012, , .		9
150	AdNoC: Runtime Adaptive Network-on-Chip Architecture. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2012, 20, 257-269.	2.1	23
151	CASES 2009 guest editorâ€™s introduction. Design Automation for Embedded Systems, 2010, 14, 285-286.	0.7	0
152	Runtime Thermal Management Using Software Agents for Multi- and Many-Core Architectures. IEEE Design and Test of Computers, 2010, 27, 58-68.	1.4	40
153	TAPE. , 2009, , .		105
154	QoS-supported On-chip Communication for Multi-processors. International Journal of Parallel Programming, 2008, 36, 114-139.	1.1	9
155	A Flexible Framework for Communication Evaluation in SoC Design. International Journal of Parallel Programming, 2008, 36, 457-477.	1.1	1