Lothar Thiele

List of Publications by Year
in descending order

158 papers	10,616 citations	331670 21 h-index	168389 53 g-index
159 all docs	159 docs citations	159 times ranked	7866 citing authors

#	Article	IF	Citations
1	Resource-Aware Stochastic Self-Triggered Model Predictive Control. , 2022, 6, 1262-1267.		2
2	Non-Intrusive Distributed Tracing of Wireless IoT Devices with the FlockLabÂ2 Testbed. ACM Transactions on Internet of Things, 2022, 3, 1-31.	4.6	0
3	Robust Resource-Aware Self-Triggered Model Predictive Control. , 2022, 6, 1724-1729.		2
4	iSpray. , 2022, 6, 1-29.		1
5	Dataflow Driven Partitioning of Machine Learning Applications for Optimal Energy Use in Batteryless Systems. Transactions on Embedded Computing Systems, 2022, 21, 1-29.	2.9	2
6	Robustness of predictive energy harvesting systems: Analysis and adaptive prediction scaling. IET Computers and Digital Techniques, 2022, 16, 106-124.	1.2	5
7	SensorFormer: Efficient Many-to-Many Sensor Calibration With Learnable Input Subsampling. IEEE Internet of Things Journal, 2022, 9, 20577-20589.	8.7	3
8	Accurate Onboard Predictions for Indoor Energy Harvesting using Random Forests. , 2022, , .		6
9	Wireless Control for Smart Manufacturing: Recent Approaches and Open Challenges. Proceedings of the IEEE, 2021, 109, 441-467.	21.3	33
10	Schedulability of probabilistic mixed-criticality systems. Real-Time Systems, 2021, 57, 397-442.	1.3	0
11	Optimal Power Management for Energy Harvesting Systems with A Backup Power Source. , 2021, , .		10
12	Environment and Application Testbed for Low-Power Energy Harvesting System Design. IEEE Transactions on Industrial Electronics, 2021, 68, 11146-11156.	7.9	7
13	Joint Energy Management for Distributed Energy Harvesting Systems. , 2021, , .		4
14	Automatic Energy-Hotspot Detection and Elimination in Real-Time Deeply Embedded Systems. , 2021, , .		0
15	Thermoelectric Energy Harvesting From Gradients in the Earth Surface. IEEE Transactions on Industrial Electronics, 2020, 67, 9460-9470.	7.9	37
16	Real-Time and IoT â€" Why and How?. , 2020, , .		0
17	Adaptive Loss-Aware Quantization for Multi-Bit Networks. , 2020, , .		19
18	Performance maximization of energy-variable self-powered (m,Âk)-firm real-time systems. Real-Time Systems, 2020, 56, 64-111.	1.3	4

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19	Increased reproducibility and comparability of data leak evaluations using ExOT. , 2020, , .		0
20	Maestro: Autonomous QoS Management for Mobile Applications Under Thermal Constraints. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2019, 38, 1557-1570.	2.7	13
21	Systematic identification of external influences in multi-year microseismic recordings using convolutional neural networks. Earth Surface Dynamics, 2019, 7, 171-190.	2.4	9
22	Feedback control goes wireless. , 2019, , .		34
23	ICT. , 2019, 3, 1-19.		22
24	Enhancing Multi-hop Sensor Calibration with Uncertainty Estimates. , 2019, , .		4
25	FFOB: efficient online mode-switch procrastination in mixed-criticality systems. Real-Time Systems, 2019, 55, 471-513.	1.3	17
26	Extending the Lifetime of Nano-Blimps via Dynamic Motor Control. Journal of Signal Processing Systems, 2019, 91, 339-361.	2.1	11
27	A decade of detailed observations (2008â€"2018) in steep bedrock permafrost at the Matterhorn HÃ¶rnligrat (Zermatt, CH). Earth System Science Data, 2019, 11, 1203-1237.	9.9	28
28	Dataset. , 2019, , .		17
29	The 2017 Embedded Systems Week (ESWEEK). IEEE Design and Test, 2018, 35, 95-96.	1.2	0
30	Time-Critical Systems Design: A Survey. IEEE Design and Test, 2018, 35, 8-26.	1.2	19
31	Guest Editorsâ€™ Introduction: Special Issue on Time-Critical Systems Design. IEEE Design and Test, 2018, 35, 5-7.	1.2	0
32	W-Air. , 2018, 2, 1-25.		54
33	A Case for Atmospheric Transmittance: Solar Energy Prediction in Wireless Sensor Nodes. , 2018, , .		2
34	DOL-BIP-Critical: a tool chain for rigorous design and implementation of mixed-criticality multi-core systems. Design Automation for Embedded Systems, 2018, 22, 141-181.	1.0	2
35	Two-level bulk microfabrication of a mechanical broadband vibration amplitude-amplifier with ten coupled resonators. Journal of Micromechanics and Microengineering, 2018, 28, 045009.	2.6	0
36	A Survey on Sensor Calibration in Air Pollution Monitoring Deployments. IEEE Internet of Things Journal, 2018, 5, 4857-4870.	8.7	195

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37	Frequency Scaling As a Security Threat on Multicore Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2018, 37, 2497-2508.	2.7	7
38	The security risks of power measurements in multicores. , 2018, , .		3
39	Measurement and validation of energy harvesting IoT devices. , 2017, , .		29
40	Isolation scheduling on multicores: model and scheduling approaches. Real-Time Systems, 2017, 53, 614-667.	1.3	3
41	Implementation of Partitioned Mixed-Criticality Scheduling on a Multi-Core Platform. Transactions on Embedded Computing Systems, 2017, 16, 1-21.	2.9	6
42	Internet of Things—The Quest for Trust. IEEE Design and Test, 2017, 34, 102-108.	1.2	3
43	SCAN. , 2017, 1, 1-21.		34
44	On The Design and Application of Thermal Isolation Servers. Transactions on Embedded Computing Systems, 2017, 16, 1-19.	2.9	3
45	Mitigating Erroneous Wake-ups. , 2017, , .		0
46	End-to-End Real-Time Guarantees in Wireless Cyber-Physical Systems. , 2016, , .		14
47	Mobile Ultrasound Imaging on Heterogeneous Multi-Core Platforms. , 2016, , .		5
48	RocketLogger. , 2016, , .		12
49	Towards the design of fault-tolerant mixed-criticality systems on multicores. , 2016, , .		16
50	Poster Abstract: A Heterogeneous System Architecture for Event-Triggered Wireless Sensing. , 2016, , .		0
51	Exploring Energy Saving for Mixed-Criticality Systems on Multi-Cores. , 2016, , .		40
52	Mixed-criticality scheduling on cluster-based manycores with shared communication and storage resources. Real-Time Systems, 2016, 52, 399-449.	1.3	39
53	Dynamic many-process applications on many-tile embedded systems and HPC clusters: The EURETILE programming environment and execution platforms. Journal of Systems Architecture, 2016, 69, 29-53.	4.3	10
54	Dynamic Energy Burst Scaling for Transiently Powered Systems. , 2016, , .		31

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55	An Isolation Scheduling Model for Multicores. , 2015, , .		12
56	A Calibration Based Thermal Modeling Technique for Complex Multicore Systems. , 2015, , .		3
57	A testbed for fine-grained tracing of time sensitive behavior in wireless sensor networks. , 2015, , .		12
58	Bolt. , 2015, , .		23
59	Deriving high-resolution urban air pollution maps using mobile sensor nodes. Pervasive and Mobile Computing, 2015, 16, 268-285.	3.3	204
60	Mixed-criticality runtime mechanisms and evaluation on multicores. , 2015, , .		14
61	Reducing multi-hop calibration errors in large-scale mobile sensor networks. , 2015, , .		62
62	Optimal Power Management with Guaranteed Minimum Energy Utilization for Solar Energy Harvesting Systems. , 2015, , .		16
63	Passive, Privacy-Preserving Real-Time Counting of Unmodified Smartphones via ZigBee Interference. , 2015, , .		11
64	Run and Be Safe: Mixed-Criticality Scheduling with Temporary Processor Speedup. , 2015, , .		13
65	On the scheduling of fault-tolerant mixed-criticality systems. , 2014, , .		4
66	AdaPNet. , 2014, , .		11
67	COOLIP: Simple yet effective job allocation for distributed thermally-throttled processors. , 2014, , .		0
68	Optimizing the NoC Slack Through Voltage and Frequency Scaling in Hard Real-Time Embedded Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2014, 33, 1632-1643.	2.7	13
69	Dynamic power management for long-term energy neutral operation of solar energy harvesting systems. , 2014, , .		61
70	Route selection for mobile sensor nodes on public transport networks. Journal of Ambient Intelligence and Humanized Computing, 2014, 5, 307-321.	4.9	16
71	Mapping mixed-criticality applications on multi-core architectures. , 2014, , .		6
72	Computing a language-based guarantee for timing properties of cyber-physical systems. , 2014, , .		0

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73	Pushing the spatio-temporal resolution limit of urban air pollution maps. , 2014, , .		63
74	Service adaptions for mixed-criticality systems. , 2014, , .		37
75	Computing a language-based guarantee for timing properties of cyber-physical systems. , 2014, , .		0
76	Deterministic memory sharing in Kahn process networks: Ultrasound imaging as a case study. , 2014, , .		2
77	Mapping mixed-criticality applications on multi-core architectures. , 2014, , .		3
78	COOLIP: Simple yet effective job allocation for distributed thermally-throttled processors. , 2014, , .		0
79	Component-based system design: analytic real-time interfaces for state-based component implementations. International Journal on Software Tools for Technology Transfer, 2013, 15, 155-170.	1.9	14
80	The Problem Bit. , 2013, , .		3
81	Efficient Worst-Case Temperature Evaluation for Thermal-Aware Assignment of Real-Time Applications on MPSoCs. Journal of Electronic Testing: Theory and Applications (JETTA), 2013, 29, 521-535.	1.2	8
82	A Satisfiability Approach to Speed Assignment for Distributed Real-Time Systems. , 2013, , .		4
83	Scheduling of mixed-criticality applications on resource-sharing multicore systems. , 2013, , .		58
84	Exploiting the parallelism of heterogeneous systems using dataflow graphs on top of OpenCL. , 2013, , .		25
85	On Modeling Low-Power Wireless Protocols Based on Synchronous Packet Transmissions. , 2013, , .		19
86	Model-Driven Accuracy Bounds for Noisy Sensor Readings. , 2013, , .		12
87	Interference Constraint Graph &#x2014; A new specification for mixed-criticality systems. , 2013, , .		18
88	Behavioural composition constructively built server algorithms. ACM SIGBED Review, 2013, 10, 43-48.	1.8	1
89	The bus goes wireless: Routing-free data collection with QoS guarantees in sensor networks. , 2012, , .		2
90	Visualizing large sensor network data sets in space and time with vizzly. , 2012, , .		6

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91	Worst-Case Temperature Guarantees for Real-Time Applications on Multi-core Systems. , 2012, , .		29
92	Multi-objective mapping optimization via problem decomposition for many-core systems. , 2012, , .		23
93	An Algorithm for Online Reconfiguration of Resource Reservations for Hard Real-Time Systems. , 2012, , .		6
94	Quantifying the Effect of Rare Timing Events with Settling-Time and Overshoot. , 2012, , .		11
95	Route selection for mobile sensors with checkpointing constraints. , 2012, , .		6
96	Timing Analysis on a Processor with Temperature-Controlled Speed Scaling. , 2012, , .		7
97	Fast worst-case peak temperature evaluation for real-time applications on multi-core systems. , 2012, , .		3
98	MAMOT: Memory-Aware Mapping Optimization Tool for MPSoC. , 2012, , .		0
99	Thermally optimal stop-go scheduling of task graphs with real-time constraints. , 2011, , .		22
100	End-to-End Delay Minimization in Thermally Constrained Distributed Systems. , 2011, , .		4
101	Energy-Efficient Scheduling Algorithms for Periodic Power Management for Real-Time Event Streams. , 2011, , .		3
102	Applying real-time interface and calculus for dynamic power management in hard real-time systems. Real-Time Systems, 2011, 47, 163-193.	1.3	38
103	Approximating Pareto optimal compiler optimization sequences—a trade—off between WCET, ACET and code size. Software - Practice and Experience, 2011, 41, 1437-1458.	3.6	15
104	Platform synthesis and partitioning of real-time tasks for energy efficiency. Journal of Systems Architecture, 2011, 57, 573-583.	4.3	7
105	Thermal-aware global real-time scheduling and analysis on multicore systems. Journal of Systems Architecture, 2011, 57, 547-560.	4.3	12
106	Composing heterogeneous components for system-wide performance analysis. , 2011, , .		16
107	X-SENSE: Sensing in extreme environments. , 2011, , .		40
108	Real-Time Analysis of Servers for General Job Arrivals. , 2011, , .		4

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109	Mutation operator characterization: Exhaustiveness, locality, and bias. , 2011, , .		3
110	Guest Editorial Special Section on Power-Aware Computing. IEEE Transactions on Industrial Informatics, 2010, 6, 253-254.	11.3	6
111	Analytic real-time analysis and timed automata: a hybrid methodology for the performance analysis of embedded real-time systems. Design Automation for Embedded Systems, 2010, 14, 193-227.	1.0	34
112	Worst case delay analysis for memory interference in multicore systems. , 2010, , .		100
113	Multi-objective Exploration of Compiler Optimizations for Real-Time Systems. , 2010, , .		17
114	Dynamic Power-Aware Mapping of Applications onto Heterogeneous MPSoC Platforms. IEEE Transactions on Industrial Informatics, 2010, 6, 692-707.	11.3	88
115	Analysis, Comparison, and Optimization of Routing Protocols for Energy Harvesting Wireless Sensor Networks. , 2010, , .		60
116	Adaptive power management for real-time event streams. , 2010, , .		6
117	Energy-efficient real-time task scheduling with temperature-dependent leakage. , 2010, , .		0
118	Secondis: An Adaptive Dissemination Protocol for Synchronizing Wireless Sensor Networks. , 2010, , .		4
119	Generation and calibration of compositional performance analysis models for multi-processor systems. , 2009, , .		10
120	Adaptive Dynamic Power Management for Hard Real-Time Systems. , 2009, , .		32
121	Energy reduction techniques for systems with non-DVS components. , 2009, , .		3
122	NoSE: Efficient Maintenance and Initialization of Wireless Sensor Networks. , 2009, , .		4
123	Periodic power management schemes for real-time event streams. , 2009, , .		18
124	Efficient execution of Kahn process networks on multi-processor systems using protothreads and windowed FIFOs. , 2009, , .		24
125	Influence of different abstractions on the performance analysis of distributed hard real-time systems. Design Automation for Embedded Systems, 2009, 13, 27-49.	1.0	35
126	A Preference-Based Evolutionary Algorithm for Multi-Objective Optimization. Evolutionary Computation, 2009, 17, 411-436.	3.0	385

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127	Multiprocessor SoC software design flows. IEEE Signal Processing Magazine, 2009, 26, 64-71.	5.6	21
128	Thermal-Aware Global Real-Time Scheduling on Multicore Systems. , 2009, , .		71
129	An approximation scheme for energy-efficient scheduling of real-time tasks in heterogeneous multiprocessor systems. , 2009, , .		10
130	Design of a Solar-Harvesting Circuit for Batteryless Embedded Systems. IEEE Transactions on Circuits and Systems I: Regular Papers, 2009, 56, 2519-2528.	5.4	226
131	Reliable mode changes in real-time systems with fixed priority or EDF scheduling. , 2009, , .		31
132	Proactive Speed Scheduling for Real-Time Tasks under Thermal Constraints. , 2009, , .		59
133	Feasibility Analysis of On-Line DVS Algorithms for Scheduling Arbitrary Event Streams. , 2009, , .		18
134	Coping with unreliable channels: Efficient link estimation for low-power wireless sensor networks. , 2008, , .		22
135	EvAnT: Analysis and Checking of Event Traces for Wireless Sensor Networks. , 2008, , .		6
136	Designing a High-Reliability Low-Power Status Monitoring Protocol. , 2007, , .		2
137	Composing Functional and State-Based Performance Models for Analyzing Heterogeneous Real-Time Systems. , 2007, , .		19
138	Automated Wireless Sensor Network Testing. , 2007, , .		12
139	S-XTC: A Signal-Strength Based Topology Control Algorithm for Sensor Networks. , 2007, , .		16
140	Windowed FIFOs for FPGA-based Multiprocessor Systems. , 2007, , .		9
141	Workload correlations in multi-processor hard real-time systems. Journal of Computer and System Sciences, 2007, 73, 207-224.	1.2	5
142	Special Issue on ASAP 2004 Conference. Journal of Signal Processing Systems, 2007, 49, 1-2.	1.0	0
143	Optimal temporal partitioning based on slowdown and retiming. , 2006, , .		1
144	Interface-Based Rate Analysis of Embedded Systems. , 2006, , .		21

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145	System architecture evaluation using modular performance analysis: a case study. International Journal on Software Tools for Technology Transfer, 2006, 8, 649-667.	1.9	154
146	An efficient, adaptive parameter variation scheme for metaheuristics based on the epsilon-constraint method. European Journal of Operational Research, 2006, 169, 932-942.	5.7	303
147	Design for Timing Predictability. Real-Time Systems, 2004, 28, 157-177.	1.3	113
148	Running time analysis of evolutionary algorithms on a simplified multiobjective knapsack problem. Natural Computing, 2004, 3, 37-51.	3.0	33
149	Sparse graphical Gaussian modeling of the isoprenoid gene network in Arabidopsis thaliana. Genome Biology, 2004, 5, R92.	9.6	290
150	Combining Convergence and Diversity in Evolutionary Multiobjective Optimization. Evolutionary Computation, 2002, 10, 263-282.	3.0	1,298
151	Generating an action notation environment from Montages descriptions. International Journal on Software Tools for Technology Transfer, 2001, 3, 431-455.	1.9	4
152	Comparison of Multiobjective Evolutionary Algorithms: Empirical Results. Evolutionary Computation, 2000, 8, 173-195.	3.0	4,646
153	Dynamic Min-Max Problems. Discrete Event Dynamic Systems: Theory and Applications, 1999, 9, 111-134.	1.5	7
154	System-Level Synthesis Using Evolutionary Algorithms. Design Automation for Embedded Systems, 1998, 3, 23-58.	1.0	157
155	A Comparison of Selection Schemes Used in Evolutionary Algorithms. Evolutionary Computation, 1996, 4, 361-394.	3.0	389
156	Algorithm-architecture co-design by example: a coprocessor for on-line arithmetic. Microprocessing and Microprogramming, 1995, 41, 339-357.	0.2	1
157	Linear systolic arrays for matrix computations. Journal of Parallel and Distributed Computing, 1989, 7, 28-39.	4.1	14
158	A systolic array for cyclic-by-rows Jacobi algorithms. Journal of Parallel and Distributed Computing, 1987, 4, 334-340.	4.1	10