

Alan Burns

List of Publications by Year in descending order

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166
papers

7,941
citations

185998

28
h-index

82410

72
g-index

167
all docs

167
docs citations

167
times ranked

2224
citing authors

#	ARTICLE	IF	CITATIONS
1	Applying new scheduling theory to static priority pre-emptive scheduling. Software Engineering Journal, 1993, 8, 284.	0.7	827
2	A survey of hard real-time scheduling for multiprocessor systems. ACM Computing Surveys, 2011, 43, 1-44.	16.1	657
3	Controller Area Network (CAN) schedulability analysis: Refuted, revisited and revised. Real-Time Systems, 2007, 35, 239-272.	1.1	613
4	Real Time Scheduling Theory: A Historical Perspective. Real-Time Systems, 2004, 28, 101-155.	1.1	434
5	An extendible approach for analyzing fixed priority hard real-time tasks. Real-Time Systems, 1994, 6, 133-151.	1.1	399
6	Weakly hard real-time systems. IEEE Transactions on Computers, 2001, 50, 308-321.	2.4	286
7	Allocating hard real-time tasks: An NP-Hard problem made easy. Real-Time Systems, 1992, 4, 145-165.	1.1	277
8	Fixed priority pre-emptive scheduling: An historical perspective. Real-Time Systems, 1995, 8, 173-198.	1.1	257
9	Response-Time Analysis for Mixed Criticality Systems. , 2011, , .		235
10	Calculating controller area network (CAN) message response times. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1994, 27, 35-40.	0.4	191
11	Guest Editorial: A Review of Worst-Case Execution-Time Analysis. Real-Time Systems, 2000, 18, 115-128.	1.1	179
12	A Survey of Research into Mixed Criticality Systems. ACM Computing Surveys, 2018, 50, 1-37.	16.1	147
13	Schedulability Analysis for Real-Time Systems with EDF Scheduling. IEEE Transactions on Computers, 2009, 58, 1250-1258.	2.4	146
14	Improved priority assignment for global fixed priority pre-emptive scheduling in multiprocessor real-time systems. Real-Time Systems, 2011, 47, 1-40.	1.1	138
15	Hierarchical Fixed Priority Pre-Emptive Scheduling. , 0, , .		131
16	Priority Assignment for Global Fixed Priority Pre-Emptive Scheduling in Multiprocessor Real-Time Systems. , 2009, , .		129
17	Real-Time Communication Analysis for On-Chip Networks with Wormhole Switching. , 2008, , .		126
18	Sustainable Scheduling Analysis. , 2006, , .		115

#	ARTICLE	IF	CITATIONS
19	Resource Sharing in Hierarchical Fixed Priority Pre-Emptive Systems. , 2006, , .		102
20	Feasibility analysis of fault-tolerant real-time task sets. , 0, , .		94
21	Analysis of Checkpointing for Real-Time Systems. Real-Time Systems, 2001, 20, 83-102.	1.1	80
22	The End Of The Line For Static Cyclic Scheduling?. , 1993, , .		69
23	STRESS: A simulator for hard real-time systems. Software - Practice and Experience, 1994, 24, 543-564.	2.5	69
24	A review of priority assignment in real-time systems. Journal of Systems Architecture, 2016, 65, 64-82.	2.5	65
25	Sustainability in Real-time Scheduling. Journal of Computing Science and Engineering, 2008, 2, 74-97.	0.3	64
26	Partitioned EDF scheduling for multiprocessors using a C=D task splitting scheme. Real-Time Systems, 2012, 48, 3-33.	1.1	58
27	A Schedulability Compatible Multiprocessor Resource Sharing Protocol – MrsP. , 2013, , .		57
28	Replica determinism and flexible scheduling in hard real-time dependable systems. IEEE Transactions on Computers, 2000, 49, 100-111.	2.4	55
29	Probabilistic scheduling guarantees for fault-tolerant real-time systems. , 0, , .		54
30	Schedulability analysis for mode changes in flexible real-time systems. , 0, , .		50
31	A Framework for Building Dependable Systems. Computer Journal, 1991, 34, 173-181.	1.5	48
32	Robust Priority Assignment for Fixed Priority Real-Time Systems. , 2007, , .		48
33	Multiple Servers and Capacity Sharing for Implementing Flexible Scheduling. Real-Time Systems, 2002, 22, 49-75.	1.1	47
34	A Wormhole NoC Protocol for Mixed Criticality Systems. , 2014, , .		46
35	Combining static worst-case timing analysis and program proof. Real-Time Systems, 1996, 11, 145-171.	1.1	45
36	An optimal synchronous bandwidth allocation scheme for guaranteeing synchronous message deadlines with the timed-token MAC protocol. IEEE/ACM Transactions on Networking, 1995, 3, 729-741.	2.6	43

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37	Portable worst-case execution time analysis using Java Byte Code. , 0, , .		41
38	Robust Mixed-Criticality Systems. IEEE Transactions on Computers, 2018, 67, 1478-1491.	2.4	39
39	A Bailout Protocol for Mixed Criticality Systems. , 2015, , .		37
40	Schedulability analysis and task mapping for real-time on-chip communication. Real-Time Systems, 2010, 46, 360-385.	1.1	36
41	Average and Worst-Case Latency Improvements in Mixed-Criticality Wormhole Networks-on-Chip. , 2015, , .		34
42	An Integrated Approach to Scheduling in Safety-Critical Embedded Control Systems. Real-Time Systems, 2003, 25, 5-37.	1.1	33
43	Timing Analysis of Real-Time Communication Under Electromagnetic Interference. Real-Time Systems, 2005, 30, 55-81.	1.1	33
44	Real-Time Communication Analysis with a Priority Share Policy in On-Chip Networks. , 2009, , .		32
45	A timeband framework for modelling real-time systems. Real-Time Systems, 2010, 45, 106-142.	1.1	32
46	Response Time Upper Bounds for Fixed Priority Real-Time Systems. , 2008, , .		31
47	Robust priority assignment for messages on a Controller Area Network (CAN). Real-Time Systems, 2009, 41, 152-180.	1.1	30
48	Implementing atomic actions in Ada 95. IEEE Transactions on Software Engineering, 1997, 23, 107-123.	4.3	29
49	Adaptive Mixed Criticality Scheduling with Deferred Preemption. , 2014, , .		29
50	Predicting computation time for advanced processor architectures. , 0, , .		28
51	Optimal -monotonic priority assignment. Information Processing Letters, 2007, 103, 247-250.	0.4	28
52	Mixed Criticality on Controller Area Network. , 2013, , .		28
53	Dynamic value-density for scheduling real-time systems. , 0, , .		27
54	Exact quantification of the sub-optimality of a uniprocessor fixed priority pre-emptive scheduling. Real-Time Systems, 2009, 43, 211-258.	1.1	27

#	ARTICLE	IF	CITATIONS
55	FPZL Schedulability Analysis. , 2011, , .		27
56	Title is missing!. Real-Time Systems, 2003, 24, 135-151.	1.1	26
57	Priority Assignment for Real-Time Wormhole Communication in On-Chip Networks. , 2008, , .		24
58	Timely use of the CAN protocol in critical hard real-time systems with faults. , 0, , .		23
59	FSF: A Real-Time Scheduling Architecture Framework. , 0, , .		23
60	A Deadline-Floor Inheritance Protocol for EDF Scheduled Embedded Real-Time Systems with Resource Sharing. IEEE Transactions on Computers, 2015, 64, 1241-1253.	2.4	23
61	Engineering a hard real-time system: From theory to practice. Software - Practice and Experience, 1995, 25, 705-726.	2.5	22
62	Absolute and relative temporal constraints in hard real-time databases. , 1992, , .		21
63	An efficient and practical local synchronous bandwidth allocation scheme for the timed-token MAC protocol. , 0, , .		21
64	An Enhanced Bailout Protocol for Mixed Criticality Embedded Software. IEEE Transactions on Software Engineering, 2017, 43, 298-320.	4.3	21
65	Dual Priority Assignment: A Practical Method For Increasing Processor Utilisation. , 1993, , .		20
66	Flexible scheduling for adaptable real-time systems. , 0, , .		20
67	Analysis of Hierarchical EDF Pre-emptive Scheduling. , 2007, , .		20
68	Schedulability analysis of fixed priority real-time systems with offsets. , 0, , .		19
69	A Dual-Mode Strategy for Performance-Maximisation and Resource-Efficient CPS Design. Transactions on Embedded Computing Systems, 2019, 18, 1-20.	2.1	19
70	Worst case response time analysis of hard real-time sporadic traffic in FIP networks. , 0, , .		18
71	Period adaptation of real-time control tasks with fixed-priority scheduling in cyber-physical systems. Journal of Systems Architecture, 2020, 103, 101691.	2.5	18
72	Analysis of checkpointing for schedulability of real-time systems. , 0, , .		17

#	ARTICLE	IF	CITATIONS
73	Loop-free asynchronous data sharing in multiprocessor real-time systems based on timing properties. , 0, , .		17
74	Hard Real-Time Communication with the Timed Token Protocol: Current State and Challenging Problems. Real-Time Systems, 2004, 27, 271-295.	1.1	17
75	The Valid Use of Utility in Adaptive Real-Time Systems. Real-Time Systems, 2003, 25, 277-296.	1.1	16
76	Programming Execution-Time Servers in Ada 2005. , 2006, , .		16
77	Improvement to Quick Processor-Demand Analysis for EDF-Scheduled Real-Time Systems. , 2009, , .		16
78	New schedulability analysis for MrsP. , 2017, , .		16
79	Buffer-aware bounds to multi-point progressive blocking in priority-preemptive NoCs. , 2018, , .		16
80	Comparing Degrees of Non-Determinism in Expression Evaluation. Computer Journal, 2013, 56, 741-755.	1.5	15
81	Real-time analysis of priority-preemptive NoCs with arbitrary buffer sizes and router delays. Real-Time Systems, 2019, 55, 63-105.	1.1	15
82	Asynchronous data sharing in multiprocessor real-time systems using process consensus. , 0, , .		14
83	A value-based scheduling approach for real-time autonomous vehicle control. Robotica, 2000, 18, 273-279.	1.3	14
84	Supporting lock-based multiprocessor resource sharing protocols in real-time programming languages. Concurrency Computation Practice and Experience, 2013, 25, 2227-2251.	1.4	14
85	An effective schedulability analysis for fault-tolerant hard real-time systems. , 0, , .		13
86	Cyclic Executives, Multi-core Platforms and Mixed Criticality Applications. , 2015, , .		13
87	TZDKS: A New TrustZone-Based Dual-Criticality System with Balanced Performance. , 2018, , .		13
88	Mixed Criticality Systems with Varying Context Switch Costs. , 2018, , .		13
89	A semi-partitioned model for mixed criticality systems. Journal of Systems and Software, 2019, 150, 51-63.	3.3	13
90	Weakly hard real-time constraints on controller area network. , 0, , .		12

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91	Rewriting History to Exploit Gain Time. , 0, , .		12
92	Exact scheduling analysis of non-accumulatively monotonic multiframe tasks. Real-Time Systems, 2009, 43, 119-146.	1.1	12
93	Fixed-priority scheduling of dual-criticality systems. , 2013, , .		12
94	Exact comparison of fixed priority and EDF scheduling based on speedup factors for both pre-emptive and non-pre-emptive paradigms. Real-Time Systems, 2015, 51, 566-601.	1.1	12
95	Putting fixed priority scheduling theory into engineering practice for safety critical applications. , 0, , .		11
96	HARTEX? a safe real-time kernel for distributed computer control systems. Software - Practice and Experience, 2002, 32, 209-232.	2.5	11
97	Supporting Nested Resources in MrsP. Lecture Notes in Computer Science, 2017, , 73-86.	1.0	11
98	Title is missing!. Real-Time Systems, 2002, 22, 229-249.	1.1	10
99	Flexible hard real-time scheduling for deliberative AI systems. Real-Time Systems, 2008, 40, 241-263.	1.1	10
100	Semi-partitioned model for dual-core mixed criticality system. , 2015, , .		10
101	An approach to task attribute assignment for uniprocessor systems. , 0, , .		9
102	Title is missing!. Real-Time Systems, 2002, 22, 251-280.	1.1	9
103	Reducing the Implementation Overheads of IPCP and DFP. , 2015, , .		9
104	Semi-Clairvoyance in Mixed-Criticality Scheduling. , 2019, , .		9
105	Programming Replicated Systems in Ada 95. Computer Journal, 1996, 39, 361-373.	1.5	8
106	Locking policies for multiprocessor ada. ACM SIGAda Ada Letters, 2013, 33, 59-65.	0.1	8
107	Static worst-case timing analysis of Ada. ACM SIGAda Ada Letters, 1994, XIV, 88-91.	0.1	8
108	Towards a fixed priority scheduler for an aircraft application. , 0, , .		7

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109	Asynchronous event handling and real-time threads in the real-time specification for Java. , 0, , .		7
110	Cycle-time properties of the timed token medium access control protocol. IEEE Transactions on Computers, 2002, 51, 1362-1367.	2.4	7
111	An engineering process for the verification of real-time systems. Formal Aspects of Computing, 2007, 19, 111-136.	1.4	7
112	Timed Circus: Timed CSP with the Miracle. , 2011, , .		7
113	Investigation of the pessimism in distributed systems timing analysis. , 0, , .		7
114	Real-time distributed computing. , 0, , .		6
115	Timing properties of the timed token MAC protocol. , 0, , .		6
116	Reasoning About the Reliability of Multi-version, Diverse Real-Time Systems. , 2010, , .		6
117	A Timed Model of Circus with the Reactive Design Miracle. , 2010, , .		6
118	A Novel Flow Control Mechanism to Avoid Multi-Point Progressive Blocking in Hard Real-Time Priority-Preemptive NoCs. , 2020, , .		6
119	Priority Assignment on Partitioned Multiprocessor Systems With Shared Resources. IEEE Transactions on Computers, 2021, 70, 1006-1018.	2.4	6
120	Optimal Synthesis of IDK-Cascades. , 2021, , .		6
121	Compensating Adaptive Mixed Criticality Scheduling. , 2022, , .		6
122	Effective use of abort in programming mode changes. ACM SIGAda Ada Letters, 1990, X, 61-67.	0.1	5
123	The AirTight Protocol for Mixed Criticality Wireless CPS. ACM Transactions on Cyber-Physical Systems, 2020, 4, 1-28.	1.9	5
124	A consensus protocol for CAN-based systems. , 0, , .		4
125	Improving the Schedulability of Mixed Criticality Cyclic Executives via Limited Task Splitting. , 2016, , .		4
126	A complete run-time overhead-aware schedulability analysis for MrsP under nested resources. Journal of Systems and Software, 2020, 159, 110449.	3.3	4

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127	Schedulability Analysis for Adaptive Mixed Criticality Systems with Arbitrary Deadlines and Semi-Clairvoyance. , 2020, , .		4
128	Optimally ordering IDK classifiers subject to deadlines. Real-Time Systems, 2023, 59, 1-34.	1.1	4
129	How to verify concurrent Ada programs. ACM SIGAda Ada Letters, 1999, XIX, 78-83.	0.1	3
130	Three obstacles to flexible scheduling. , 0, , .		3
131	Task parameter computations for constraint deadline real-time systems with EDF scheduling. , 2010, , .		3
132	Incorporating Robustness and Resilience into Mixed-Criticality Scheduling Theory. , 2019, , .		3
133	Expressing survivability considerations in mixed-criticality scheduling theory. Journal of Systems Architecture, 2020, 109, 101755.	2.5	3
134	Implementing analysable hard real-time sporadic tasks in Ada 9X. ACM SIGAda Ada Letters, 1994, XIV, 38-49.	0.1	3
135	Hybrid algorithms for dynamic schedulability testing. , 0, , .		2
136	An experimental testbed for embedded real time Ada 95. ACM SIGAda Ada Letters, 1999, XIX, 84-89.	0.1	2
137	A framework for scheduling in safety-critical embedded control systems. , 0, , .		2
138	Exact scheduling analysis of accumulatively monotonic multiframe tasks subjected to release jitter and arbitrary deadlines. , 2008, , .		2
139	Sensitivity Analysis of the Minimum Task Period for Arbitrary Deadline Real-Time Systems. , 2010, , .		2
140	Modelling temporal behaviour in complex systems with Timebands. Formal Methods in System Design, 2013, 43, 520-551.	0.9	2
141	Parallel Ada. ACM SIGAda Ada Letters, 2013, 33, 9-13.	0.1	2
142	From Java to real-time Java: a model-driven methodology with automated toolchain (invited paper). , 2019, , .		2
143	Deriving Specifications of Control Programs for Cyber Physical Systems. Computer Journal, 2020, 63, 774-790.	1.5	2
144	Broadening real-time systems research. ACM Computing Surveys, 1996, 28, 178.	16.1	2

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145	MSRP-FT: Reliable Resource Sharing on Multiprocessor Mixed-Criticality Systems. , 2022, , .		2
146	Restricted tasking models. ACM SIGAda Ada Letters, 1997, XVII, 27-32.	0.1	1
147	Time-constrained sorting-a comparison of different algorithms. , 0, , .		1
148	Modelling and Implementing Complex Systems with Timebands. , 2010, , .		1
149	Modelling Temporal Behaviour in Complex Systems with Timebands. , 2012, , 277-307.		1
150	Implementing a high-integrity executive using Ravenscar. ACM SIGAda Ada Letters, 2001, XXI, 40-45.	0.1	1
151	Sporadic tasks in hard real-time systems. ACM SIGAda Ada Letters, 1995, XV, 46-51.	0.1	1
152	Development Automation of Real-Time Java. Transactions on Embedded Computing Systems, 2020, 19, 1-26.	2.1	1
153	Analysis-Runtime Co-design for Adaptive Mixed Criticality Scheduling. , 2022, , .		1
154	Guaranteeing timing constraints under shortest remaining processing time scheduling. , 0, , .		0
155	Task termination and Ada 95. ACM SIGAda Ada Letters, 1997, XVII, 100-105.	0.1	0
156	Feature interactions with dynamic priorities. ACM SIGAda Ada Letters, 1997, XVII, 24-26.	0.1	0
157	Supporting Deliberative Real-Time AI Systems: A Fixed Priority Scheduling Approach. Real-Time Systems (ECRTS), Proceedings of the Euromicro Workshop on, 2007, , .	0.0	0
158	Guest editorial: Special issue on ECRTS 2008. Real-Time Systems, 2009, 43, 1-2.	1.1	0
159	Notice of Retraction: Sensitivity analysis of relative deadline for EDF scheduled real-time systems. , 2010, , .		0
160	Guest editorial: multiprocessor scheduling. Real-Time Systems, 2013, 49, 137-139.	1.1	0
161	Programming simple reactive systems in ada: premature program termination. ACM SIGAda Ada Letters, 2013, 33, 75-86.	0.1	0
162	Deriving period restrictions from a given utilization bound under RMS. , 2015, , .		0

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163	Work-in-Progress: Real-Time RPC for Hybrid Dual-OS System. , 2019, , .		0
164	On developing and verifying design abstractions for reliable concurrent programming in Ada. ACM SIGAda Ada Letters, 2001, XXI, 48-55.	0.1	0
165	Non-preemptive dispatching and locking policies. ACM SIGAda Ada Letters, 2001, XXI, 46-47.	0.1	0
166	Asynchronism in Ada 9X. ACM SIGAda Ada Letters, 1991, XI, 66-68.	0.1	0