Binoy Ravindran

List of Publications by Year
in descending order

194 papers	1,926 citations	623734 14 h-index	552781 26 g-index
204 all docs	204 docs citations	204 times ranked	969 citing authors

#	ARTICLE	IF	CITATIONS
1	An Optimal Real-Time Scheduling Algorithm for Multiprocessors. , 2006, , .		128
2	Heterogenous Quorum-Based Wake-Up Scheduling in Wireless Sensor Networks. IEEE Transactions on Computers, 2010, 59, 1562-1575.	3.4	85
3	Probability-Based Prediction and Sleep Scheduling for Energy-Efficient Target Tracking in Sensor Networks. IEEE Transactions on Mobile Computing, 2013, 12, 735-747.	5.8	80
4	Time-utility function-driven switched ethernet: packet scheduling algorithm, implementation, and feasibility analysis. IEEE Transactions on Parallel and Distributed Systems, 2004, 15, 119-133.	5.6	63
5	A utility accrual scheduling algorithm for real-time activities with mutual exclusion resource constraints. IEEE Transactions on Computers, 2006, 55, 454-469.	3.4	63
6	Popcorn. , 2015, , .		54
7	A formally verified application-level framework for real-time scheduling on POSIX real-time operating systems. IEEE Transactions on Software Engineering, 2004, 30, 613-629.	5.6	51
8	A binary-compatible unikernel. , 2019, , .		37
9	An experimental evaluation of real-time DVFS scheduling algorithms. , 2012, , .		34
10	On Distributed Time-Dependent Shortest Paths over Duty-Cycled Wireless Sensor Networks. , 2010, , .		30
11	Breaking the Boundaries in Heterogeneous-ISA Datacenters. , 2017, , .		28
12	Edge computing. , 2020, , .		28
13	Opportunistic real-time routing in multi-hop wireless sensor networks. , 2009, , .		26
14	Making Fast Consensus Generally Faster. , 2016, , .		26
15	Resource Management Middleware for Dynamic, Dependable Real-Time Systems. Real-Time Systems, 2001, 20, 183-196.	1.3	25
16	Intra-unikernel isolation with Intel memory protection keys. , 2020, , .		25
17	ChronOS Linux. , 2011, , .		23
18	Hyflow2. , 2013, , .		23

#	ARTICLE	IF	CITATIONS
19	HyFlow. , 2011, , .		22
20	Archie. , 2014, , .		21
21	Speeding up Consensus by Chasing Fast Decisions. , 2017, , .		21
22	Automated Data Partitioning for Highly Scalable and Strongly Consistent Transactions. IEEE Transactions on Parallel and Distributed Systems, 2016, 27, 106-118.	5.6	20
23	CQS-Pair: Cyclic Quorum System Pair for Wakeup Scheduling in Wireless Sensor Networks. Lecture Notes in Computer Science, 2008, , 295-310.	1.3	20
24	Energy-efficient, utility accrual scheduling under resource constraints for mobile embedded systems. Transactions on Embedded Computing Systems, 2006, 5, 513-542.	2.9	19
25	Response time analysis of software transactional memory-based distributed real-time systems. , 2009, , .		19
26	CPU scheduling for statistically-assured real-time performance and improved energy efficiency. , 2004, , .		17
27	Achieving Maxâ€"Min lifetime and fairness with rate allocation for data aggregation in sensor networks. Ad Hoc Networks, 2011, 9, 821-834.	5.5	17
28	Least-Latency Routing over Time-Dependent Wireless Sensor Networks. IEEE Transactions on Computers, 2013, 62, 969-983.	3.4	17
29	Disjoint-Access Parallelism. , 2015, , .		17
30	Utility Accrual Real-Time Scheduling Under the Unimodal Arbitrary Arrival Model with Energy Bounds. IEEE Transactions on Computers, 2007, 56, 1358-1371.	3.4	16
31	HSG-LM. , 2013, , .		16
32	Recovering from Distributable Thread Failures with Assured Timeliness in Real-Time Distributed Systems. , 2006, , .		15
33	Energy efficient sleep scheduling based on moving directions in target tracking sensor network. Parallel and Distributed Processing Symposium (IPDPS), Proceedings of the International Conference on, 2008, , .	1.0	15
34	Completely Distributed Particle Filters for Target Tracking in Sensor Networks. , 2011, , .		15
35	Quantifying Memory Underutilization in HPC Systems and Using it to Improve Performance via Architecture Support. , 2019, , .		15
36	On Transactional Scheduling in Distributed Transactional Memory Systems. Lecture Notes in Computer Science, 2010, , 347-361.	1.3	15

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37	Utility Accrual Real-Time Scheduling under Variable Cost Functions. IEEE Transactions on Computers, 2007, 56, 385-401.	3.4	14
38	An approximation algorithm for minimum-delay peer-to-peer streaming. , 2009, , .		14
39	Tâ€"L plane-based real-time scheduling for homogeneous multiprocessors. Journal of Parallel and Distributed Computing, 2010, 70, 225-236.	4.1	14
40	Energy Efficient Sleep Scheduling in Sensor Networks for Multiple Target Tracking. , 2008, , 498-509.		14
41	Hyaline: Fast and Transparent Lock-Free Memory Reclamation. , 2019, , .		14
42	Optimistic transactional boosting. , 2014, , .		13
43	Be General and Donâ€™t Give Up Consistency in Geo-Replicated Transactional Systems. Lecture Notes in Computer Science, 2014, , 33-48.	1.3	13
44	RTG-L: Dependably Scheduling Real-Time Distributable Threads in Large-Scale, Unreliable Networks. , 2007, , .		12
45	On bounding response times under software transactional memory in distributed multiprocessor real-time systems. , 2009, , .		12
46	Adaptive Live Migration to Improve Load Balancing in Virtual Machine Environment. Lecture Notes in Computer Science, 2014, , 116-125.	1.3	12
47	Swift Birth and Quick Death. , 2017, , .		12
48	Distributed Transactional Contention Management as the Traveling Salesman Problem. Lecture Notes in Computer Science, 2014, , 54-67.	1.3	12
49	Utility Accrual Real-Time Scheduling under Variable Cost Functions. , 0, , .		11
50	Synchronization for an optimal real-time scheduling algorithm on multiprocessors. , 2007, , .		11
51	On open nesting in distributed transactional memory. , 2012, , .		11
52	Transactional Forwarding: Supporting Highly-Concurrent STM in Asynchronous Distributed Systems. , 2012, , .		11
53	Snake: Control Flow Distributed Software Transactional Memory. Lecture Notes in Computer Science, 2011, , 238-252.	1.3	11
54	HiperTM: High Performance, Fault-Tolerant Transactional Memory. Lecture Notes in Computer Science, 2014, , 181-196.	1.3	11

#	Article	IF	Citations
55	Universal wait-free memory reclamation. , 2020, , .		11
56	Dynamic analysis of the relay cache-coherence protocol for distributed transactional memory. , 2010, , .		10
57	Harnessing energy efficiency of heterogeneous-ISA platforms. , 2015, , .		10
58	HEXO. , 2019, , .		10
59	ezBFT: Decentralizing Byzantine Fault-Tolerant State Machine Replication. , 2019, , .		10
60	On Developing Optimistic Transactional Lazy Set. Lecture Notes in Computer Science, 2014, , 437-452.	1.3	10
61	Energy-efficient, utility accrual scheduling under resource constraints for mobile embedded systems. , 2004, , .		9
62	Space-Optimal, Wait-Free Real-Time Synchronization. IEEE Transactions on Computers, 2007, 56, 373-384.	3.4	8
63	Scheduling distributable real-time threads in the presence of crash failures and message losses. , 2008, , .		8
64	STM concurrency control for embedded real-time software with tighter time bounds. , 2012, , .		8
65	Optimistic transactional boosting. ACM SIGPLAN Notices, 2014, 49, 387-388.	0.2	8
66	Thread Migration in a Replicated-Kernel OS. , 2015, , .		8
67	Consensus-Driven Distributable Thread Scheduling in Networked Embedded Systems. , 2007, , 247-260.		8
68	Secure and efficient in-process monitor (and library) protection with Intel MPK. , 2020, , .		8
69	DPR, LPR: proactive resource allocation algorithms for asynchronous real-time distributed systems. IEEE Transactions on Computers, 2004, 53, 201-216.	3.4	7
70	Utility accrual real-time scheduling for multiprocessor embedded systems. Journal of Parallel and Distributed Computing, 2010, 70, 101-110.	4.1	7
71	Formally verified big step semantics out of x86-64 binaries. , 2019, , .		7
72	Snapshot-free, transparent, and robust memory reclamation for lock-free data structures. , 2021, , .		7

#	Article	IF	Citations
73	LibrettOS. , 2020, , .		7
74	SlimGuard. , 2019, , .		7
75	On Best-Effort Real-Time Assurances for Recovering from Distributable Thread Failures in Distributed Real-Time Systems. , 2007, , .		6
76	Efficient Opportunistic Broadcasting over Duty-Cycled Wireless Sensor Networks. , 2010, , .		6
77	VPC: Scalable, Low Downtime Checkpointing for Virtual Clusters. , 2012, , .		6
78	Scheduling Transactions in Replicated Distributed Software Transactional Memory. , 2013, , .		6
79	On Closed Nesting and Checkpointing in Fault-Tolerant Distributed Transactional Memory. , 2013, , .		6
80	Remote Invalidation: Optimizing the Critical Path of Memory Transactions. , 2014, , .		6
81	Transparent Fault-Tolerance Using Intra-Machine Full-Software-Stack Replication on Commodity Multicore Hardware. , 2017, , .		6
82	OS Support for Thread Migration and Distribution in the Fully Heterogeneous Datacenter. , 2017, , .		6
83	Harnessing Energy Efficiency of Heterogeneous-ISA Platforms. Operating Systems Review (ACM), 2016, 49, 65-69.	1.9	6
84	On Best-Effort Utility Accrual Real-Time Scheduling on Multiprocessors. Lecture Notes in Computer Science, 2010, , 270-285.	1.3	6
85	Probabilistic, Real-Time Scheduling of Distributable Threads Under Dependencies in Mobile, Ad Hoc Networks. , 2007, , .		5
86	On scheduling garbage collector in dynamic real-time systems with statistical timing assurances. Real-Time Systems, 2007, 36, 23-46.	1.3	5
87	STM concurrency control for multicore embedded real-time software. , 2012, , .		5
88	HyflowCPP: A Distributed Transactional Memory Framework for C++. , 2013, , .		5
89	KairosVM: Deterministic introspection for real-time virtual machine hierarchical scheduling. , 2014, , .		5
90	A flattened hierarchical scheduler for real-time virtualization. , 2016, , .		5

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91	Optimistic Transactional Boosting. IEEE Transactions on Parallel and Distributed Systems, 2017, 28, 3600-3614.	5.6	5
92	Transaction Execution Models in Partially Replicated Transactional Memory: The Case for Data-Flow and Control-Flow. Lecture Notes in Computer Science, 2015, , 341-366.	1.3	5
93	CFlood: A Constrained Flooding Protocol for Real-time Data Delivery in Wireless Sensor Networks. Lecture Notes in Computer Science, 2009, , 413-427.	1.3	5
94	A Quorum-Based Replication Framework for Distributed Software Transactional Memory. Lecture Notes in Computer Science, 2011, , 18-33.	1.3	5
95	Lightweight Live Migration for High Availability Cluster Service. Lecture Notes in Computer Science, 2010, , 420-434.	1.3	5
96	Sound C Code Decompilation for a Subset of x86-64 Binaries. Lecture Notes in Computer Science, 2020, , 247-264.	1.3	5
97	MSA. , 2005, , .		4
98	A Space-Optimal Wait-Free Real-Time Synchronization Protocol. , 0, , .		4
99	RTQG: Real-Time Quorum-based Gossip Protocol for Unreliable Networks. , 2008, , .		4
100	RT-P2P: A Scalable Real-Time Peer-to-Peer System with Probabilistic Timing Assurances. , 2008, , .		4
101	Location-Aware Cache-Coherence Protocols for Distributed Transactional Contention Management in Metric-Space Networks. , 2009, , .		4
102	Lock-free synchronization for dynamic embedded real-time systems. Transactions on Embedded Computing Systems, 2010, 9, 1-28.	2.9	4
103	HiperTM: High performance, fault-tolerant transactional memory. Theoretical Computer Science, 2017, 688, 86-102.	0.9	4
104	AIRA: A Framework for Flexible Compute Kernel Execution in Heterogeneous Platforms. IEEE Transactions on Parallel and Distributed Systems, 2018, 29, 269-282.	5.6	4
105	Scheduling HPC workloads on heterogeneous-ISA architectures. , 2019, , .		4
106	libMPNode. , 2019, , .		4
107	On Scalable Synchronization for Distributed Embedded Real-Time Systems. Lecture Notes in Computer Science, 2008, , 394-405.	1.3	4
108	Byzantine-Tolerant, Information Propagation in Untrustworthy and Unreliable Networks. , 2007, , 207-216.		4

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109	DeX: Scaling Applications Beyond Machine Boundaries. , 2020, , .		4
110	Integrated Real-Time Scheduling and Communication with Probabilistic Timing Assurances in Unreliable Distributed Systems. , 2008, , .		3
111	Garbage Collector Scheduling in Dynamic, Multiprocessor Real-Time Systems. IEEE Transactions on Parallel and Distributed Systems, 2009, 20, 845-856.	5.6	3
112	On scheduling soft real-time tasks with lock-free synchronization for embedded devices. , 2009, , .		3
113	On real-time capacity of event-driven data-gathering sensor networks. , 2009, , .		3
114	Recovering from distributable thread failures in distributed real-time Java. Transactions on Embedded Computing Systems, 2010, 10, 1-37.	2.9	3
115	A framework accommodating categorized multiprocessor real-time scheduling in the RTSJ. , 2012, , .		3
116	An experimental evaluation of the scalability of real-time scheduling algorithms on large-scale multicore platforms. Journal of Experimental Algorithmics, 2012, 17, .	1.0	3
117	Scheduling Closed-Nested Transactions in Distributed Transactional Memory. , 2012, , .		3
118	Automated Data Partitioning for Highly Scalable and Strongly Consistent Transactions. , 2014, , .		3
119	On designing NUMA-aware concurrency control for scalable transactional memory. , 2016, , .		3
120	Managing Resource Limitation of Best-Effort HTM. IEEE Transactions on Parallel and Distributed Systems, 2017, 28, 2299-2313.	5.6	3
121	Breaking the Boundaries in Heterogeneous-ISA Datacenters. ACM SIGPLAN Notices, 2017, 52, 645-659.	0.2	3
122	Breaking the Boundaries in Heterogeneous-ISA Datacenters. Computer Architecture News, 2017, 45, 645-659.	2.5	3
123	Enhancing the Performance of High Availability Lightweight Live Migration. Lecture Notes in Computer Science, 2011, , 50-64.	1.3	3
124	On Minimizing Average End-to-End Delay in P2P Live Streaming Systems. Lecture Notes in Computer Science, 2010, , 459-474.	1.3	3
125	Dynamic and Secure Memory Transformation in Userspace. Lecture Notes in Computer Science, 2020, , 237-256.	1.3	3
126	Fast Scheduling of Distributable Real-Time Threads with Assured End-to-End Timeliness. , 2008, , 211-225.		3

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127	Assured-Timeliness Integrity Protocols for Distributable Real-Time Threads with in Dynamic Distributed Systems. , 2007, , 660-673.		3
128	Xar-trek. , 2021, , .		3
129	Adelie: continuous address space layout re-randomization for Linux drivers. , 2022, , .		3
130	Formally verified lifting of C-compiled x86-64 binaries. , 2022, , .		3
131	Stochastic, Utility Accrual Real-Time Scheduling with Task-Level and System-Level Timeliness Assurances. , 0, , .		2
132	Utility accrual channel establishment in multihop networks. IEEE Transactions on Computers, 2006, 55, 428-442.	3.4	2
133	On bounding energy consumption in dynamic, embedded real-time systems. , 2006, , .		2
134	RTMG: Scheduling real-time distributable threads in large-scale, unreliable networks with low message overhead. , 2007, , .		2
135	On a Self-Organizing MANET Event Routing Architecture with Causal Dependency Awareness. , 2008, , .		2
136	On real-time STM concurrency control for embedded software with improved schedulability. , 2013, , .		2
137	On transactional memory concurrency control in distributed real-time programs. , 2013, , .		2
138	On the Viability of Speculative Transactional Replication in Database Systems: A Case Study with PostgreSQL. , 2013, , .		2
139	Speculative client execution in deferred update replication. , 2014, , .		2
140	On Reducing False Conflicts in Distributed Transactional Data Structures. , 2015, , .		2
141	Transactional Interference-Less Balanced Tree. Lecture Notes in Computer Science, 2015, , 325-340.	1.3	2
142	On Scheduling Best-Effort HTM Transactions. , 2015, , .		2
143	Managing Resource Limitation of Best-Effort HTM. , 2015, , .		2
144	On ordering transaction commit. , 2016, , .		2

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145	Extending TM Primitives using Low Level Semantics. , 2016, , .		2
146	On Open Nesting in Distributed Transactional Memory. IEEE Transactions on Computers, 2016, 65, 1856-1868.	3.4	2
147	Opacity vs TMS2: Expectations and Reality. Lecture Notes in Computer Science, 2016, , 269-283.	1.3	2
148	ByteSTM: Virtual Machine-Level Java Software Transactional Memory. Lecture Notes in Computer Science, 2013, , 166-180.	1.3	2
149	An OpenMP Runtime for Transparent Work Sharing Across Cache-Incoherent Heterogeneous Nodes. , 2020, , .		2
150	Event-Based System Architecture in Mobile Ad Hoc Networks (MANETs). Advances in Systems Analysis, Software Engineering, and High Performance Computing Book Series, 0, , 346-368.	0.5	2
151	Scheduling Dependent Distributable Real-Time Threads in Dynamic Networked Embedded Systems. International Federation for Information Processing, 2008, , 171-180.	0.4	2
152	A Syscall-Level Binary-Compatible Unikernel. IEEE Transactions on Computers, 2021, , 1-1.	3.4	2
153	H-Container: Enabling Heterogeneous-ISA Container Migration in Edge Computing. ACM Transactions on Computer Systems, 2021, 39, 1-36.	0.8	2
154	On utility accrual processor scheduling with wait-free synchronization for embedded real-time software. , 2006, , .		1
155	Rate Allocation with Lifetime Maximization and Fairness for Data Aggregation in Sensor Networks. , 2008, , .		1
156	RTRD: Real-Time and Reliable Data Delivery in Ad Hoc Networks. , 2008, , .		1
157	An Automatic Presence Service for Low Duty-Cycled Mobile Sensor Networks. Mobile Networks and Applications, 2011, 16, 460-474.	3.3	1
158	On STM concurrency control for multicore embedded real-time software. , 2011, , .		1
159	Applying source level auto-vectorization to Aparapi Java. , 2014, , .		1
160	On Cache-Aware Task Partitioning for Multicore Embedded Real-Time Systems. , 2014, , .		1
161	Managing Soft-Errors in Transactional Systems. , 2014, , .		1
162	Reducing Aborts in Distributed Transactional Systems through Dependency Detection. , 2015, , .		1

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163	On Preserving Data Integrity of Transactional Applications on Multicore Architectures. , 2015, , .		1
164	On Exploiting Locality for Generalized Consensus. , 2015, , .		1
165	Exploiting Parallelism of Distributed Nested Transactions. , 2016, , .		1
166	Remote Transaction Commit: Centralizing Software Transactional Memory Commits. IEEE Transactions on Computers, 2016, 65, 2228-2240.	3.4	1
167	Lerna. , 2018, , .		1
168	Cross-ISA execution of SIMD regions for improved performance. , 2019, , .		1
169	Scalable Translation Validation of Unverified Legacy OS Code. , 2019, , .		1
170	Taming the Contention in Consensus-based Distributed Systems. IEEE Transactions on Dependable and Secure Computing, 2020, , 1-1.	5.4	1
171	Lock-Free Synchronization for Dynamic Embedded Real-Time Systems. , 2008, , 73-85.		1
172	Scheduling Open-Nested Transactions in Distributed Transactional Memory. Lecture Notes in Computer Science, 2013, , 105-120.	1.3	1
173	Lerna. ACM Transactions on Storage, 2019, 15, 1-24.	2.1	1
174	Establishing a refinement relation between binaries and abstract code. , 2019, , .		1
175	PrVM. ACM SIGBED Review, 2019, 16, 14-20.	1.8	1
176	Highly Automated Formal Proofs over Memory Usage of Assembly Code. Lecture Notes in Computer Science, 2020, , 98-117.	1.3	1
177	Scaling Shared Memory Multiprocessing Applications in Non-cache-coherent Domains. , 2020, , .		1
178	Kite. , 2022, , .		1
179	wCQ. , 2022, , .		1
180	LRTG: Scheduling Distributed Real-Time Tasks in Unreliable and Untrustworthy Systems. , 2008, , .		0

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181	SOQ: A Service-Oriented Quorum-Based Protocol for Resilient Real-Time Communication in Partitionable Networks. , 2008, , .		0
182	Self-organizing and self-reconfigurable event routing in ad hoc networks with causal dependency awareness. ACM Transactions on Autonomous and Adaptive Systems, 2011, 6, 1-28.	0.8	0
183	Implementing distributable real-time threads in the Linux kernel. , 2012, , .		0
184	FBLT: A Real-Time Contention Manager with Improved Schedulability. , 2013, , .		0
185	SMASH. , 2013, , .		0
186	On high performance distributed transactional data structures. , 2013, , .		0
187	Automated data partitioning for independent distributed transactions. , 2013, , .		0
188	On Making Transactional Applications Resilient to Data Corruption Faults. , 2014, , .		0
189	An Automated Framework for Decomposing Memory Transactions to Exploit Partial Rollback. , 2015, , .		0
190	A Distributed Operating System Network Stack and Device Driver for Multicores. , 2017, , .		0
191	Breaking the Boundaries in Heterogeneous-ISA Datacenters. Operating Systems Review (ACM), 2017, 51, 645-659.	1.9	0
192	On Scheduling in Distributed Transactional Memory: Techniques and Tradeoffs. , 2015, , 1267-1283.		0
193	Rethinking Communication in Multiple-kernel OSes for New Shared Memory Interconnects. , 2019, , .		0
194	A Validation Methodology for OCaml-to-PVS Translation. Lecture Notes in Computer Science, 2020, , 207-221.	1.3	0