Abhik Roychoudhury

List of Publications by Year
in descending order

145	4,886	304602	315616
papers	citations	22 h-index	38 g-index

151	151	151	1605
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	<scp>Hippodrome</scp>: Data Race Repair Using Static Analysis Summaries. ACM Transactions on Software Engineering and Methodology, 2023, 32, 1-33.	4.8	0
2	Verifix: Verified Repair of ProgrammingÂAssignments. ACM Transactions on Software Engineering and Methodology, 2022, 31, 1-31.	4.8	9
3	Linear-time temporal logic guided greybox fuzzing. , 2022, , .		8
4	Trust enhancement issues in program repair. , 2022, , .		15
5	Program vulnerability repair via inductive inference. , 2022, , .		5
6	oo7: Low-Overhead Defense Against Spectre Attacks via Program Analysis. IEEE Transactions on Software Engineering, 2021, 47, 2504-2519.	4.3	24
7	Fuzzing: Challenges and Reflections. IEEE Software, 2021, 38, 79-86.	2.1	48
8	Automated Patch Transplantation. ACM Transactions on Software Engineering and Methodology, 2021, 30, 1-36.	4.8	17
9	Beyond Tests. ACM Transactions on Software Engineering and Methodology, 2021, 30, 1-27.	4.8	23
10	Localizing Vulnerabilities Statistically From One Exploit. , 2021, , .		7
11	Concolic program repair. , 2021, , .		15
12	Automated patch backporting in Linux (experience paper). , 2021, , .		8
13	Automatic Program Repair. IEEE Software, 2021, 38, 22-27.	2.1	14
14	Time-travel testing of Android apps. , 2020, , .		52
15	Interactive Patch Generation and Suggestion. , 2020, , .		4
16	Smart Contract Repair. ACM Transactions on Software Engineering and Methodology, 2020, 29, 1-32.	4.8	33
17	Fitness Guided Vulnerability Detection with Greybox Fuzzing. , 2020, , .		5
18	KLEESpectre. ACM Transactions on Software Engineering and Methodology, 2020, 29, 1-31.	4.8	12

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19	Crash-avoiding program repair. , 2019, , .		39
20	Automated program repair: a step towards software automation. Science China Information Sciences, 2019, 62, 1.	2.7	6
21	Re-Factoring Based Program Repair Applied to Programming Assignments. , 2019, , .		40
22	Automated program repair. Communications of the ACM, 2019, 62, 56-65.	3.3	193
23	Coverage-Based Greybox Fuzzing as Markov Chain. IEEE Transactions on Software Engineering, 2019, 45, 489-506.	4.3	204
24	EnergyPatch: Repairing Resource Leaks to Improve Energy-Efficiency of Android Apps. IEEE Transactions on Software Engineering, 2018, 44, 470-490.	4.3	51
25	A correlation study between automated program repair and test-suite metrics. Empirical Software Engineering, 2018, 23, 2948-2979.	3.0	22
26	Symbolic Verification of Cache Side-Channel Freedom. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2018, 37, 2812-2823.	1.9	18
27	Symbolic execution with existential second-order constraints. , 2018, , .		25
28	Repairing crashes in Android apps. , 2018, , .		51
29	Test-Equivalence Analysis for Automatic Patch Generation. ACM Transactions on Software Engineering and Methodology, 2018, 27, 1-37.	4.8	27
30	Android testing via synthetic symbolic execution. , 2018, , .		23
31	A correlation study between automated program repair and test-suite metrics. , 2018, , .		9
32	Semantic program repair using a reference implementation. , 2018, , .		48
33	Bucketing Failing Tests via Symbolic Analysis. Lecture Notes in Computer Science, 2017, , 43-59.	1.0	12
34	Directed Greybox Fuzzing. , 2017, , .		371
35	Future of Mobile Software for Smartphones and Drones: Energy and Performance. , 2017, , .		11
36	Codeflaws: a programming competition benchmark for evaluating automated program repair tools. , 2017, , .		23

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37	A feasibility study of using automated program repair for introductory programming assignments. , 2017, , .		71
38	Anti-patterns in search-based program repair. , 2016, , .		91
39	Debugging energy-efficiency related field failures in mobile apps. , 2016, , .		20
40	Automated partitioning of android applications for trusted execution environments. , 2016, , .		26
41	On Testing Embedded Software. Advances in Computers, 2016, 101, 121-153.	1.2	16
42	Angelix. , 2016, , .		325
43	Coverage-based Greybox Fuzzing as Markov Chain. , 2016, , .		262
44	Model-based whitebox fuzzing for program binaries. , 2016, , .		61
45	Automated re-factoring of Android apps to enhance energy-efficiency. , 2016, , .		36
46	Formula-based software debugging. Communications of the ACM, 2016, 59, 68-77.	3.3	28
47	DirectFix: Looking for Simple Program Repairs. , 2015, , .		132
48	relifix: Automated Repair of Software Regressions. , 2015, , .		48
49	Hercules: Reproducing Crashes in Real-World Application Binaries. , 2015, , .		6
50	Software Change Contracts. ACM Transactions on Software Engineering and Methodology, 2015, 24, 1-43.	4.8	5
51	Cache-Related Preemption Delay Analysis for Multilevel Noninclusive Caches. Transactions on Embedded Computing Systems, 2014, 13, 1-29.	2.1	4
52	Dynamic Inference of Change Contracts. , 2014, , .		6
53	A Unified WCET analysis framework for multicore platforms. Transactions on Embedded Computing Systems, 2014, 13, 1-29.	2.1	32
54	Cache-related preemption delay analysis for FIFO caches. , 2014, , .		1

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55	CoREBench: studying complexity of regression errors. , 2014, , .		68
56	Energy-aware design patterns for mobile application development (invited talk). , 2014, , .		3
57	Detecting energy bugs and hotspots in mobile apps. , 2014, , .		145
58	Static analysis of multi-core TDMA resource arbitration delays. Real-Time Systems, 2014, 50, 185-229.	1.1	28
59	Time-Predictable Embedded Software on Multi-Core Platforms: Analysis and Optimization. Foundations and Trends in Electronic Design Automation, 2014, 8, 199-356.	1.0	6
60	Cache-related preemption delay analysis for FIFO caches. ACM SIGPLAN Notices, 2014, 49, 33-42.	0.2	0
61	Scalable and precise refinement of cache timing analysis via path-sensitive verification. Real-Time Systems, 2013, 49, 517-562.	1.1	21
62	Integrated Timing Analysis of Application and Operating Systems Code. , 2013, , .		8
63	Partition-based regression verification. , 2013, , .		30
64	Precise micro-architectural modeling for WCET analysis via AI+SAT. , 2013, , .		12
65	Static Analysis Driven Cache Performance Testing. , 2013, , .		9
66	SemFix: Program repair via semantic analysis. , 2013, , .		261
67	Regression Testing of Evolving Programs. Advances in Computers, 2013, 89, 53-88.	1.2	2
68	Past expression. , 2013, , .		2
69	Expressing and checking intended changes via software change contracts. , 2013, , .		10
70	Program performance spectrum. , 2013, , .		0
71	Regression tests to expose change interaction errors. , 2013, , .		30
72	Path exploration based on symbolic output. ACM Transactions on Software Engineering and Methodology, 2013, 22, 1-41.	4.8	15

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73	Program performance spectrum. , 2013, , .		4
74	Program performance spectrum. ACM SIGPLAN Notices, 2013, 48, 65-76.	0.2	1
75	DARWIN. ACM Transactions on Software Engineering and Methodology, 2012, 21, 1-29.	4.8	31
76	Software change contracts. , 2012, , .		5
77	Relating software validation to technology trends. International Journal on Software Tools for Technology Transfer, 2012, 14, 631-638.	1.7	2
78	Timing analysis of concurrent programs running on shared cache multi-cores. Real-Time Systems, 2012, 48, 638-680.	1.1	33
79	Modeling Software Execution Environment. , 2012, , .		15
80	Inferring class level specifications for distributed systems. , 2012, , .		12
81	A Unified WCET Analysis Framework for Multi-core Platforms. , 2012, , .		43
82	Tenant Onboarding in Evolving Multi-tenant Software-as-a-Service Systems. , 2012, , .		9
83	Symbolic Message Sequence Charts. ACM Transactions on Software Engineering and Methodology, 2012, 21, 1-44.	4.8	6
84	Performance debugging of Esterel specifications. Real-Time Systems, 2012, 48, 570-600.	1.1	11
85	Bus-Aware Multicore WCET Analysis through TDMA Offset Bounds. , 2011, , .		62
86	Scope-Aware Data Cache Analysis for WCET Estimation. , 2011, , .		63
87	Timing Analysis of a Protected Operating System Kernel. , 2011, , .		52
88	Static bus schedule aware scratchpad allocation in multiprocessors. , 2011, , .		6
89	Locating failure-inducing environment changes. , 2011, , .		2
90	Mining message sequence graphs. , 2011, , .		26

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91	Path exploration based on symbolic output. , 2011, , .		25
92	Scalable and Precise Refinement of Cache Timing Analysis via Model Checking. , 2011, , .		19
93	Engineering multi-tenant software-as-a-service systems. , 2011, , .		27
94	Static bus schedule aware scratchpad allocation in multiprocessors. ACM SIGPLAN Notices, 2011, 46, 11-20.	0.2	16
95	Debugging as a Science, that too, when your Program is Changing. Electronic Notes in Theoretical Computer Science, 2010, 266, 3-15.	0.9	1
96	Modeling shared cache and bus in multi-cores for timing analysis. , 2010, , .		61
97	Test generation to expose changes in evolving programs. , 2010, , .		41
98	Golden implementation driven software debugging. , 2010, , .		28
99	Scratchpad allocation for concurrent embedded software. ACM Transactions on Programming Languages and Systems, 2010, 32, 1-47.	1.7	23
100	WOMM: A Weak Operational Memory Model. Lecture Notes in Computer Science, 2010, , 519-534.	1.0	1
101	Timing analysis of esterel programs on general-purpose multiprocessors. , 2010, , .		11
102	Unified Cache Modeling for WCET Analysis and Layout Optimizations. , 2009, , .		20
103	Footprinter: Round-trip engineering via scenario and state based models. , 2009, , .		3
104	Interacting process classes. ACM Transactions on Software Engineering and Methodology, 2009, 18, 1-47.	4.8	3
105	Darwin. , 2009, , .		48
106	Cache-aware optimization of BAN applications. Design Automation for Embedded Systems, 2009, 13, 159-178.	0.7	1
107	Cache-aware timing analysis of streamingÂapplications. Real-Time Systems, 2009, 41, 52-85.	1.1	10
108	Timing Analysis of Concurrent Programs Running on Shared Cache Multi-Cores. , 2009, , .		85

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109	A Systematic Classification and Detection of Infeasible Paths for Accurate WCET Analysis of Esterel Programs. , 2009, , .		0
110	Schedulability Analysis of MSC-based System Models. , 2008, , .		3
111	Dynamic slicing on Java bytecode traces. ACM Transactions on Programming Languages and Systems, 2008, 30, 1-49.	1.7	35
112	Debugging Statecharts Via Model-Code Traceability. Communications in Computer and Information Science, 2008, , 292-306.	0.4	4
113	Java memory model aware software validation. , 2008, , .		10
114	Scratchpad allocation for concurrent embedded software. , 2008, , .		15
115	Performance debugging of Esterel specifications. , 2008, , .		20
116	Cache-aware optimization of BAN applications. , 2008, , .		0
117	Accounting for Cache-Related Preemption Delay in Dynamic Priority Schedulability Analysis. , 2007, , .		25
118	Hierarchical dynamic slicing. , 2007, , .		17
119	Symbolic message sequence charts. , 2007, , .		9
120	A Retargetable Software Timing Analyzer Using Architecture Description Language. , 2007, , .		5
121	Cache-Aware Timing Analysis of Streaming Applications. Real-Time Systems (ECRTS), Proceedings of the Euromicro Workshop on, 2007, , .	0.0	2
122	Memory model sensitive bytecode verification. Formal Methods in System Design, 2007, 31, 281-305.	0.9	21
123	Chronos: A timing analyzer for embedded software. Science of Computer Programming, 2007, 69, 56-67.	1.5	163
124	Worst-Case Execution Time and Energy Analysis. , 2007, , 1-1-1-48.		2
125	Modeling out-of-order processors for WCET analysis. Real-Time Systems, 2006, 34, 195-227.	1.1	64
126	Efficient detection and exploitation of infeasible paths for software timing analysis. , 2006, , .		23

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127	Interacting process classes. , 2006, , .		5
128	Synthesis and Traceability of Scenario-Based Executable Models. , 2006, , .		3
129	Accurately Choosing Execution Runs for Software Fault Localization. Lecture Notes in Computer Science, 2006, , 80-95.	1.0	32
130	Modeling Control Speculation for Timing Analysis. Real-Time Systems, 2005, 29, 27-58.	1.1	26
131	Automated path generation for software fault localization. , 2005, , .		42
132	An unfold/fold transformation framework for definite logic programs. ACM Transactions on Programming Languages and Systems, 2004, 26, 464-509.	1.7	15
133	Inductively Verifying Invariant Properties of Parameterized Systems. Automated Software Engineering, 2004, 11, 101-139.	2.2	11
134	Unfold/FoldÂTransformations for AutomatedÂVerification of ParameterizedÂConcurrentÂSystems. Lecture Notes in Computer Science, 2004, , 261-290.	1.0	3
135	Accurate estimation of cache-related preemption delay. , 2003, , .		47
136	Accurate timing analysis by modeling caches, speculation and their interaction. , 2003, , .		18
137	Compactly representing parallel program executions. , 2003, , .		8
138	BEYOND TAMAKI-SATO STYLE UNFOLD/FOLD TRANSFORMATIONS FOR NORMAL LOGIC PROGRAMS. International Journal of Foundations of Computer Science, 2002, 13, 387-403.	0.8	14
139	Timing analysis of embedded software for speculative processors. , 2002, , .		12
140	Specifying multithreaded Java semantics for program verification. , 2002, , .		12
141	Automated Inductive Verification of Parameterized Protocols?. Lecture Notes in Computer Science, 2001, , 25-37.	1.0	16
142	Verification of Parameterized Systems Using Logic Program Transformations. Lecture Notes in Computer Science, 2000, , 172-187.	1.0	37
143	Formal Metatheory Using Implicit Syntax, and an Application to Data Abstraction for Asynchronous Systems. Lecture Notes in Computer Science, 1999, , 237-251.	1.0	2
144	Beyond Tamaki-Sato Style Unfold/Fold Transformations for Normal Logic Programs. Lecture Notes in Computer Science, 1999, , 322-333.	1.0	3

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145	Efficient algorithms for vertex arboricity of planar graphs. Lecture Notes in Computer Science, 1995, , 37-51.	1.0	11