

Abhik Roychoudhury

List of Publications by Year in descending order

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Version: 2024-02-01

145
papers

4,886
citations

304368

22
h-index

315357

38
g-index

151
all docs

151
docs citations

151
times ranked

1605
citing authors

#	ARTICLE	IF	CITATIONS
1	Directed Greybox Fuzzing. , 2017, , .		371
2	Angelix. , 2016, , .		325
3	Coverage-based Greybox Fuzzing as Markov Chain. , 2016, , .		262
4	SemFix: Program repair via semantic analysis. , 2013, , .		261
5	Coverage-Based Greybox Fuzzing as Markov Chain. IEEE Transactions on Software Engineering, 2019, 45, 489-506.	4.3	204
6	Automated program repair. Communications of the ACM, 2019, 62, 56-65.	3.3	193
7	Chronos: A timing analyzer for embedded software. Science of Computer Programming, 2007, 69, 56-67.	1.5	163
8	Detecting energy bugs and hotspots in mobile apps. , 2014, , .		145
9	DirectFix: Looking for Simple Program Repairs. , 2015, , .		132
10	Anti-patterns in search-based program repair. , 2016, , .		91
11	Timing Analysis of Concurrent Programs Running on Shared Cache Multi-Cores. , 2009, , .		85
12	A feasibility study of using automated program repair for introductory programming assignments. , 2017, , .		71
13	CoREBench: studying complexity of regression errors. , 2014, , .		68
14	Modeling out-of-order processors for WCET analysis. Real-Time Systems, 2006, 34, 195-227.	1.1	64
15	Scope-Aware Data Cache Analysis for WCET Estimation. , 2011, , .		63
16	Bus-Aware Multicore WCET Analysis through TDMA Offset Bounds. , 2011, , .		62
17	Modeling shared cache and bus in multi-cores for timing analysis. , 2010, , .		61
18	Model-based whitebox fuzzing for program binaries. , 2016, , .		61

#	ARTICLE	IF	CITATIONS
19	Timing Analysis of a Protected Operating System Kernel. , 2011, , .		52
20	Time-travel testing of Android apps. , 2020, , .		52
21	EnergyPatch: Repairing Resource Leaks to Improve Energy-Efficiency of Android Apps. IEEE Transactions on Software Engineering, 2018, 44, 470-490.	4.3	51
22	Repairing crashes in Android apps. , 2018, , .		51
23	Darwin. , 2009, , .		48
24	relifix: Automated Repair of Software Regressions. , 2015, , .		48
25	Semantic program repair using a reference implementation. , 2018, , .		48
26	Fuzzing: Challenges and Reflections. IEEE Software, 2021, 38, 79-86.	2.1	48
27	Accurate estimation of cache-related preemption delay. , 2003, , .		47
28	A Unified WCET Analysis Framework for Multi-core Platforms. , 2012, , .		43
29	Automated path generation for software fault localization. , 2005, , .		42
30	Test generation to expose changes in evolving programs. , 2010, , .		41
31	Re-Factoring Based Program Repair Applied to Programming Assignments. , 2019, , .		40
32	Crash-avoiding program repair. , 2019, , .		39
33	Verification of Parameterized Systems Using Logic Program Transformations. Lecture Notes in Computer Science, 2000, , 172-187.	1.0	37
34	Automated re-factoring of Android apps to enhance energy-efficiency. , 2016, , .		36
35	Dynamic slicing on Java bytecode traces. ACM Transactions on Programming Languages and Systems, 2008, 30, 1-49.	1.7	35
36	Timing analysis of concurrent programs running on shared cache multi-cores. Real-Time Systems, 2012, 48, 638-680.	1.1	33

#	ARTICLE	IF	CITATIONS
37	Smart Contract Repair. ACM Transactions on Software Engineering and Methodology, 2020, 29, 1-32.	4.8	33
38	A Unified WCET analysis framework for multicore platforms. Transactions on Embedded Computing Systems, 2014, 13, 1-29.	2.1	32
39	Accurately Choosing Execution Runs for Software Fault Localization. Lecture Notes in Computer Science, 2006, , 80-95.	1.0	32
40	DARWIN. ACM Transactions on Software Engineering and Methodology, 2012, 21, 1-29.	4.8	31
41	Partition-based regression verification. , 2013, , .		30
42	Regression tests to expose change interaction errors. , 2013, , .		30
43	Golden implementation driven software debugging. , 2010, , .		28
44	Static analysis of multi-core TDMA resource arbitration delays. Real-Time Systems, 2014, 50, 185-229.	1.1	28
45	Formula-based software debugging. Communications of the ACM, 2016, 59, 68-77.	3.3	28
46	Engineering multi-tenant software-as-a-service systems. , 2011, , .		27
47	Test-Equivalence Analysis for Automatic Patch Generation. ACM Transactions on Software Engineering and Methodology, 2018, 27, 1-37.	4.8	27
48	Modeling Control Speculation for Timing Analysis. Real-Time Systems, 2005, 29, 27-58.	1.1	26
49	Mining message sequence graphs. , 2011, , .		26
50	Automated partitioning of android applications for trusted execution environments. , 2016, , .		26
51	Accounting for Cache-Related Preemption Delay in Dynamic Priority Schedulability Analysis. , 2007, , .		25
52	Path exploration based on symbolic output. , 2011, , .		25
53	Symbolic execution with existential second-order constraints. , 2018, , .		25
54	oo7: Low-Overhead Defense Against Spectre Attacks via Program Analysis. IEEE Transactions on Software Engineering, 2021, 47, 2504-2519.	4.3	24

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55	Efficient detection and exploitation of infeasible paths for software timing analysis. , 2006, , .		23
56	Scratchpad allocation for concurrent embedded software. ACM Transactions on Programming Languages and Systems, 2010, 32, 1-47.	1.7	23
57	Codeflaws: a programming competition benchmark for evaluating automated program repair tools. , 2017, , .		23
58	Android testing via synthetic symbolic execution. , 2018, , .		23
59	Beyond Tests. ACM Transactions on Software Engineering and Methodology, 2021, 30, 1-27.	4.8	23
60	A correlation study between automated program repair and test-suite metrics. Empirical Software Engineering, 2018, 23, 2948-2979.	3.0	22
61	Memory model sensitive bytecode verification. Formal Methods in System Design, 2007, 31, 281-305.	0.9	21
62	Scalable and precise refinement of cache timing analysis via path-sensitive verification. Real-Time Systems, 2013, 49, 517-562.	1.1	21
63	Performance debugging of Esterel specifications. , 2008, , .		20
64	Unified Cache Modeling for WCET Analysis and Layout Optimizations. , 2009, , .		20
65	Debugging energy-efficiency related field failures in mobile apps. , 2016, , .		20
66	Scalable and Precise Refinement of Cache Timing Analysis via Model Checking. , 2011, , .		19
67	Accurate timing analysis by modeling caches, speculation and their interaction. , 2003, , .		18
68	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
69	Hierarchical dynamic slicing. , 2007, , .		17
70	Automated Patch Transplantation. ACM Transactions on Software Engineering and Methodology, 2021, 30, 1-36.	4.8	17
71	Static bus schedule aware scratchpad allocation in multiprocessors. ACM SIGPLAN Notices, 2011, 46, 11-20.	0.2	16
72	On Testing Embedded Software. Advances in Computers, 2016, 101, 121-153.	1.2	16

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73	Automated Inductive Verification of Parameterized Protocols?. Lecture Notes in Computer Science, 2001, , 25-37.	1.0	16
74	An unfold/fold transformation framework for definite logic programs. ACM Transactions on Programming Languages and Systems, 2004, 26, 464-509.	1.7	15
75	Scratchpad allocation for concurrent embedded software. , 2008, , .		15
76	Modeling Software Execution Environment. , 2012, , .		15
77	Path exploration based on symbolic output. ACM Transactions on Software Engineering and Methodology, 2013, 22, 1-41.	4.8	15
78	Concolic program repair. , 2021, , .		15
79	Trust enhancement issues in program repair. , 2022, , .		15
80	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
81	Automatic Program Repair. IEEE Software, 2021, 38, 22-27.	2.1	14
82	Timing analysis of embedded software for speculative processors. , 2002, , .		12
83	Inferring class level specifications for distributed systems. , 2012, , .		12
84	Precise micro-architectural modeling for WCET analysis via AI+SAT. , 2013, , .		12
85	Bucketing Failing Tests via Symbolic Analysis. Lecture Notes in Computer Science, 2017, , 43-59.	1.0	12
86	Specifying multithreaded Java semantics for program verification. , 2002, , .		12
87	KLEESpectre. ACM Transactions on Software Engineering and Methodology, 2020, 29, 1-31.	4.8	12
88	Inductively Verifying Invariant Properties of Parameterized Systems. Automated Software Engineering, 2004, 11, 101-139.	2.2	11
89	Performance debugging of Esterel specifications. Real-Time Systems, 2012, 48, 570-600.	1.1	11
90	Future of Mobile Software for Smartphones and Drones: Energy and Performance. , 2017, , .		11

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91	Efficient algorithms for vertex arboricity of planar graphs. Lecture Notes in Computer Science, 1995, , 37-51.	1.0	11
92	Timing analysis of estereel programs on general-purpose multiprocessors. , 2010, , .		11
93	Java memory model aware software validation. , 2008, , .		10
94	Cache-aware timing analysis of streaming Applications. Real-Time Systems, 2009, 41, 52-85.	1.1	10
95	Expressing and checking intended changes via software change contracts. , 2013, , .		10
96	Symbolic message sequence charts. , 2007, , .		9
97	Tenant Onboarding in Evolving Multi-tenant Software-as-a-Service Systems. , 2012, , .		9
98	Static Analysis Driven Cache Performance Testing. , 2013, , .		9
99	A correlation study between automated program repair and test-suite metrics. , 2018, , .		9
100	Verifix: Verified Repair of Programming Assignments. ACM Transactions on Software Engineering and Methodology, 2022, 31, 1-31.	4.8	9
101	Integrated Timing Analysis of Application and Operating Systems Code. , 2013, , .		8
102	Automated patch backporting in Linux (experience paper). , 2021, , .		8
103	Compactly representing parallel program executions. , 2003, , .		8
104	Linear-time temporal logic guided greybox fuzzing. , 2022, , .		8
105	Localizing Vulnerabilities Statistically From One Exploit. , 2021, , .		7
106	Static bus schedule aware scratchpad allocation in multiprocessors. , 2011, , .		6
107	Symbolic Message Sequence Charts. ACM Transactions on Software Engineering and Methodology, 2012, 21, 1-44.	4.8	6
108	Dynamic Inference of Change Contracts. , 2014, , .		6

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109	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
110	Hercules: Reproducing Crashes in Real-World Application Binaries. , 2015, , .		6
111	Automated program repair: a step towards software automation. Science China Information Sciences, 2019, 62, 1.	2.7	6
112	Interacting process classes. , 2006, , .		5
113	A Retargetable Software Timing Analyzer Using Architecture Description Language. , 2007, , .		5
114	Software change contracts. , 2012, , .		5
115	Software Change Contracts. ACM Transactions on Software Engineering and Methodology, 2015, 24, 1-43.	4.8	5
116	Fitness Guided Vulnerability Detection with Greybox Fuzzing. , 2020, , .		5
117	Program vulnerability repair via inductive inference. , 2022, , .		5
118	Debugging Statecharts Via Model-Code Traceability. Communications in Computer and Information Science, 2008, , 292-306.	0.4	4
119	Cache-Related Preemption Delay Analysis for Multilevel Noninclusive Caches. Transactions on Embedded Computing Systems, 2014, 13, 1-29.	2.1	4
120	Program performance spectrum. , 2013, , .		4
121	Interactive Patch Generation and Suggestion. , 2020, , .		4
122	Unfold/Fold Transformations for Automated Verification of Parameterized Concurrent Systems. Lecture Notes in Computer Science, 2004, , 261-290.	1.0	3
123	Synthesis and Traceability of Scenario-Based Executable Models. , 2006, , .		3
124	Schedulability Analysis of MSC-based System Models. , 2008, , .		3
125	Footprinter: Round-trip engineering via scenario and state based models. , 2009, , .		3
126	Interacting process classes. ACM Transactions on Software Engineering and Methodology, 2009, 18, 1-47.	4.8	3

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127	Energy-aware design patterns for mobile application development (invited talk). , 2014, , .		3
128	Beyond Tamaki-Sato Style Unfold/Fold Transformations for Normal Logic Programs. Lecture Notes in Computer Science, 1999, , 322-333.	1.0	3
129	Cache-Aware Timing Analysis of Streaming Applications. Real-Time Systems (ECRTS), Proceedings of the Euromicro Workshop on, 2007, , .	0.0	2
130	Locating failure-inducing environment changes. , 2011, , .		2
131	Relating software validation to technology trends. International Journal on Software Tools for Technology Transfer, 2012, 14, 631-638.	1.7	2
132	Regression Testing of Evolving Programs. Advances in Computers, 2013, 89, 53-88.	1.2	2
133	Past expression. , 2013, , .		2
134	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
135	Worst-Case Execution Time and Energy Analysis. , 2007, , 1-1-1-48.		2
136	Cache-aware optimization of BAN applications. Design Automation for Embedded Systems, 2009, 13, 159-178.	0.7	1
137	Debugging as a Science, that too, when your Program is Changing. Electronic Notes in Theoretical Computer Science, 2010, 266, 3-15.	0.9	1
138	Cache-related preemption delay analysis for FIFO caches. , 2014, , .		1
139	WOMM: A Weak Operational Memory Model. Lecture Notes in Computer Science, 2010, , 519-534.	1.0	1
140	Program performance spectrum. ACM SIGPLAN Notices, 2013, 48, 65-76.	0.2	1
141	Program performance spectrum. , 2013, , .		0
142	Cache-aware optimization of BAN applications. , 2008, , .		0
143	A Systematic Classification and Detection of Infeasible Paths for Accurate WCET Analysis of Esterel Programs. , 2009, , .		0
144	Cache-related preemption delay analysis for FIFO caches. ACM SIGPLAN Notices, 2014, 49, 33-42.	0.2	0

#	ARTICLE	IF	CITATIONS
145	<scp>Hippodrome</scp>: Data Race Repair Using Static Analysis Summaries. ACM Transactions on Software Engineering and Methodology, 2023, 32, 1-33.	4.8	0