

# Armin Biere

## List of Publications by Year in descending order

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145  
papers

6,390  
citations

156536

32  
h-index

97045

71  
g-index

159  
all docs

159  
docs citations

159  
times ranked

2223  
citing authors

#	ARTICLE	IF	CITATIONS
1	Adding Dual Variables to Algebraic Reasoning for Gate-Level Multiplier Verification. , 2022, , .		5
2	Efficient All-UIP Learned Clause Minimization. Lecture Notes in Computer Science, 2021, , 171-187.	1.0	0
3	Progress in Certifying Hardware Model Checking Results. Lecture Notes in Computer Science, 2021, , 363-386.	1.0	2
4	SAT Solving with GPU Accelerated Inprocessing. Lecture Notes in Computer Science, 2021, , 133-151.	1.0	8
5	AMulet <sup>2</sup> for Verifying Multiplier Circuits. Lecture Notes in Computer Science, 2021, , 357-364.	1.0	12
6	Non-clausal Redundancy Properties. Lecture Notes in Computer Science, 2021, , 252-272.	1.0	2
7	Chapter 9. Preprocessing in SAT Solving. Frontiers in Artificial Intelligence and Applications, 2021, , .	0.3	7
8	XOR Local Search for Boolean Brent Equations. Lecture Notes in Computer Science, 2021, , 417-435.	1.0	0
9	Incremental column-wise verification of arithmetic circuits using computer algebra. Formal Methods in System Design, 2020, 56, 22-54.	0.9	9
10	Strong Extension-Free Proof Systems. Journal of Automated Reasoning, 2020, 64, 533-554.	1.1	14
11	Preface to the Special Issue on Automated Reasoning Systems. Journal of Automated Reasoning, 2020, 64, 361-362.	1.1	0
12	Simulating Strong Practical Proof Systems with Extended Resolution. Journal of Automated Reasoning, 2020, 64, 1247-1267.	1.1	3
13	Covered Clauses Are Not Propagation Redundant. Lecture Notes in Computer Science, 2020, , 32-47.	1.0	1
14	Distributed Cube and Conquer with Paracooba. Lecture Notes in Computer Science, 2020, , 114-122.	1.0	5
15	Nullstellensatz-Proofs for Multiplier Verification. Lecture Notes in Computer Science, 2020, , 368-389.	1.0	7
16	Four Flavors of Entailment. Lecture Notes in Computer Science, 2020, , 62-71.	1.0	1
17	Duplex Encoding of Staircase At-Most-One Constraints for the Antibandwidth Problem. Lecture Notes in Computer Science, 2020, , 186-204.	1.0	0
18	Backing Backtracking. Lecture Notes in Computer Science, 2019, , 250-266.	1.0	7

#	ARTICLE	IF	CITATIONS
19	Incremental Inprocessing in SAT Solving. Lecture Notes in Computer Science, 2019, , 136-154.	1.0	11
20	Encoding Redundancy for Satisfaction-Driven Clause Learning. Lecture Notes in Computer Science, 2019, , 41-58.	1.0	10
21	A Survey on Applications of Quantified Boolean Formulas. , 2019, , .		23
22	Verifying Large Multipliers by Combining SAT and Computer Algebra. , 2019, , .		57
23	Clausal Proofs of Mutilated Chessboards. Lecture Notes in Computer Science, 2019, , 204-210.	1.0	9
24	Certifying Hardware Model Checking Results. Lecture Notes in Computer Science, 2019, , 498-502.	1.0	3
25	Truth Assignments as Conditional Autarkies. Lecture Notes in Computer Science, 2019, , 48-64.	1.0	2
26	Dualizing Projected Model Counting. , 2018, , .		4
27	SAT-Based Model Checking. , 2018, , 277-303.		18
28	Improving and extending the algebraic approach for verifying gate-level multipliers. , 2018, , .		20
29	Cube-and-Conquer for Satisfiability. , 2018, , 31-59.		8
30	What a Difference a Variable Makes. Lecture Notes in Computer Science, 2018, , 75-92.	1.0	13
31	Implicit Hitting Set Algorithms for Maximum Satisfiability Modulo Theories. Lecture Notes in Computer Science, 2018, , 134-151.	1.0	6
32	Btor2 , BtorMC and Boolector <sup>3.0</sup> . Lecture Notes in Computer Science, 2018, , 587-595.	1.0	36
33	Short Proofs Without New Variables. Lecture Notes in Computer Science, 2017, , 130-147.	1.0	22
34	Solution Validation and Extraction for QBF Preprocessing. Journal of Automated Reasoning, 2017, 58, 97-125.	1.1	14
35	Hardware model checking competition 2017. , 2017, , .		19
36	Column-wise verification of multipliers using computer algebra. , 2017, , .		47

#	ARTICLE	IF	CITATIONS
37	Challenges in Verifying Arithmetic Circuits Using Computer Algebra. , 2017, , .		1
38	Propagation based local search for bit-precise reasoning. Formal Methods in System Design, 2017, 51, 608-636.	0.9	13
39	Counterexample-Guided Model Synthesis. Lecture Notes in Computer Science, 2017, , 264-280.	1.0	19
40	Skolem Function Continuation for Quantified Boolean Formulas. Lecture Notes in Computer Science, 2017, , 129-138.	1.0	2
41	Hardware Model Checking Competition 2014: An Analysis and Comparison of Model Checkers and Benchmarks. Journal of Satisfiability, Boolean Modeling and Computation, 2016, 9, 135-172.	1.2	12
42	A Duality-Aware Calculus for Quantified Boolean Formulas. , 2016, , .		2
43	Greedy combinatorial test case generation using unsatisfiable cores. , 2016, , .		30
44	SAT Race 2015. Artificial Intelligence, 2016, 241, 45-65.	3.9	38
45	Precise and Complete Propagation Based Local Search for Satisfiability Modulo Theories. Lecture Notes in Computer Science, 2016, , 199-217.	1.0	10
46	Super-Blocked Clauses. Lecture Notes in Computer Science, 2016, , 45-61.	1.0	12
47	Complexity of Fixed-Size Bit-Vector Logics. Theory of Computing Systems, 2016, 59, 323-376.	0.7	19
48	Better lemmas with lambda extraction. , 2015, , .		2
49	Boolector 2.0. Journal of Satisfiability, Boolean Modeling and Computation, 2015, 9, 53-58.	1.2	79
50	Optimization of Combinatorial Testing by Incremental SAT Solving. , 2015, , .		33
51	Evaluating CDCL Variable Scoring Schemes. Lecture Notes in Computer Science, 2015, , 405-422.	1.0	32
52	Enhancing Search-Based QBF Solving by Dynamic Blocked Clause Elimination. Lecture Notes in Computer Science, 2015, , 418-433.	1.0	21
53	Turbo-charging Lemmas on demand with don't care reasoning. , 2014, , .		6
54	Efficient extraction of Skolem functions from QRAT proofs. , 2014, , .		27

#	ARTICLE	IF	CITATIONS
55	A Unified Proof System for QBF Preprocessing. Lecture Notes in Computer Science, 2014, , 91-106.	1.0	31
56	Detecting Cardinality Constraints in CNF. Lecture Notes in Computer Science, 2014, , 285-301.	1.0	21
57	Improving Implementation of SLS Solvers for SAT and New Heuristics for k-SAT with Long Clauses. Lecture Notes in Computer Science, 2014, , 302-316.	1.0	6
58	Everything You Always Wanted to Know about Blocked Sets (But Were Afraid to Ask). Lecture Notes in Computer Science, 2014, , 317-332.	1.0	7
59	Experimenting with SAT Solvers in Vampire. Lecture Notes in Computer Science, 2014, , 431-442.	1.0	3
60	On the Complexity of Symbolic Verification and Decision Problems in Bit-Vector Logic. Lecture Notes in Computer Science, 2014, , 481-492.	1.0	4
61	Améliorer SAT dans le cadre incrémental. Revue D'Intelligence Artificielle, 2014, 28, 593-614.	0.5	0
62	Bridging the Gap between Dual Propagation and CNF-based QBF Solving. , 2013, , .		18
63	Modbat: A Model-Based API Tester for Event-Driven Systems. Lecture Notes in Computer Science, 2013, , 112-128.	1.0	17
64	Guided Merging of Sequence Diagrams. Lecture Notes in Computer Science, 2013, , 164-183.	1.0	13
65	Revisiting Hyper Binary Resolution. Lecture Notes in Computer Science, 2013, , 77-93.	1.0	6
66	More on the Complexity of Quantifier-Free Fixed-Size Bit-Vector Logics with Binary Encoding. Lecture Notes in Computer Science, 2013, , 378-390.	1.0	8
67	bv2epr: A Tool for Polynomially Translating Quantifier-Free Bit-Vector Formulas into EPR. Lecture Notes in Computer Science, 2013, , 443-449.	1.0	2
68	Model-Based Testing for Verification Back-Ends. Lecture Notes in Computer Science, 2013, , 39-55.	1.0	14
69	Factoring Out Assumptions to Speed Up MUS Extraction. Lecture Notes in Computer Science, 2013, , 276-292.	1.0	31
70	Automated Reencoding of Boolean Formulas. Lecture Notes in Computer Science, 2013, , 102-117.	1.0	41
71	Blocked Clause Decomposition. Lecture Notes in Computer Science, 2013, , 423-438.	1.0	6
72	SmacC: A Retargetable Symbolic Execution Engine. Lecture Notes in Computer Science, 2013, , 482-486.	1.0	1

#	ARTICLE	IF	CITATIONS
73	Simulating Circuit-Level Simplifications on CNF. <i>Journal of Automated Reasoning</i> , 2012, 49, 583-619.	1.1	36
74	Inprocessing Rules. <i>Lecture Notes in Computer Science</i> , 2012, , 355-370.	1.0	108
75	Resolution-Based Certificate Extraction for QBF. <i>Lecture Notes in Computer Science</i> , 2012, , 430-435.	1.0	41
76	Concurrent Cube-and-Conquer. <i>Lecture Notes in Computer Science</i> , 2012, , 475-476.	1.0	8
77	Cube and Conquer: Guiding CDCL SAT Solvers by Lookaheads. <i>Lecture Notes in Computer Science</i> , 2012, , 50-65.	1.0	65
78	Managing SAT inconsistencies with HUMUS. , 2012, , .		30
79	A comparison of strategies for tolerating inconsistencies during decision-making. , 2012, , .		6
80	Efficient CNF Simplification Based on Binary Implication Graphs. <i>Lecture Notes in Computer Science</i> , 2011, , 201-215.	1.0	32
81	Failed Literal Detection for QBF. <i>Lecture Notes in Computer Science</i> , 2011, , 259-272.	1.0	10
82	Blocked Clause Elimination for QBF. <i>Lecture Notes in Computer Science</i> , 2011, , 101-115.	1.0	73
83	DepQBF: A Dependency-Aware QBF Solver. <i>Journal of Satisfiability, Boolean Modeling and Computation</i> , 2010, 7, 71-76.	1.2	57
84	Automated Testing and Debugging of SAT and QBF Solvers. <i>Lecture Notes in Computer Science</i> , 2010, , 44-57.	1.0	45
85	Blocked Clause Elimination. <i>Lecture Notes in Computer Science</i> , 2010, , 129-144.	1.0	68
86	Integrating Dependency Schemes in Search-Based QBF Solvers. <i>Lecture Notes in Computer Science</i> , 2010, , 158-171.	1.0	35
87	Reconstructing Solutions after Blocked Clause Elimination. <i>Lecture Notes in Computer Science</i> , 2010, , 340-345.	1.0	11
88	Clause Elimination Procedures for CNF Formulas. <i>Lecture Notes in Computer Science</i> , 2010, , 357-371.	1.0	34
89	Efficiently Representing Existential Dependency Sets for Expansion-based QBF Solvers. <i>Electronic Notes in Theoretical Computer Science</i> , 2009, 251, 83-95.	0.9	4
90	Effective Bit-Width and Under-Approximation. <i>Lecture Notes in Computer Science</i> , 2009, , 304-311.	1.0	12

#	ARTICLE	IF	CITATIONS
91	Boolector: An Efficient SMT Solver for Bit-Vectors and Arrays. Lecture Notes in Computer Science, 2009, , 174-177.	1.0	206
92	Minimizing Learned Clauses. Lecture Notes in Computer Science, 2009, , 237-243.	1.0	40
93	A Compact Representation for Syntactic Dependencies in QBFs. Lecture Notes in Computer Science, 2009, , 398-411.	1.0	11
94	Fuzzing and delta-debugging SMT solvers. , 2009, , .		62
95	SAT, SMT and Applications. Lecture Notes in Computer Science, 2009, , 1-1.	1.0	1
96	Lemmas on demand for the extensional theory of arrays. , 2008, , .		10
97	BTOR. , 2008, , .		17
98	Consistency Checking of All Different Constraints over Bit-Vectors within a SAT Solver. , 2008, , .		8
99	PicoSAT Essentials. Journal of Satisfiability, Boolean Modeling and Computation, 2008, 4, 75-97.	1.2	178
100	Nenofex: Expanding NNF for QBF Solving. , 2008, , 196-210.		30
101	Adaptive Restart Strategies for Conflict Driven SAT Solvers. , 2008, , 28-33.		50
102	Tutorial on Model Checking: Modelling and Verification in Computer Science. Lecture Notes in Computer Science, 2008, , 16-21.	1.0	6
103	Compressing BMC Encodings with QBF. Electronic Notes in Theoretical Computer Science, 2007, 174, 45-56.	0.9	39
104	A First Step Towards a Unified Proof Checker for QBF. , 2007, , 201-214.		35
105	Exhaustive Testing of Exception Handlers with Enforcer. Lecture Notes in Computer Science, 2007, , 26-46.	1.0	2
106	Efficient Model Checking of Applications with Input/Output. , 2007, , 515-522.		3
107	Liveness Checking as Safety Checking for Infinite State Spaces. Electronic Notes in Theoretical Computer Science, 2006, 149, 79-96.	0.9	28
108	Advanced unit testing. , 2006, , .		4

#	ARTICLE	IF	CITATIONS
109	Extended Resolution Proofs for Conjoining BDDs. Lecture Notes in Computer Science, 2006, , 600-611.	1.0	41
110	Enforcer – Efficient Failure Injection. Lecture Notes in Computer Science, 2006, , 412-427.	1.0	8
111	Extended Resolution Proofs for Symbolic SAT Solving with Quantification. Lecture Notes in Computer Science, 2006, , 54-60.	1.0	25
112	Linear Encodings of Bounded LTL Model Checking. Logical Methods in Computer Science, 2006, 2, .	0.4	116
113	SDL Versus C Equivalence Checking. Lecture Notes in Computer Science, 2005, , 323-338.	1.0	8
114	JVM Independent Replay in Java. Electronic Notes in Theoretical Computer Science, 2005, 113, 85-104.	0.9	6
115	Combined Static and Dynamic Analysis. Electronic Notes in Theoretical Computer Science, 2005, 131, 3-14.	0.9	35
116	Subroutine Inlining and Bytecode Abstraction to Simplify Static and Dynamic Analysis. Electronic Notes in Theoretical Computer Science, 2005, 141, 109-128.	0.9	5
117	A survey of recent advances in SAT-based formal verification. International Journal on Software Tools for Technology Transfer, 2005, 7, 156-173.	1.7	192
118	Introductory paper. International Journal on Software Tools for Technology Transfer, 2005, 7, 87-88.	1.7	0
119	Simple Is Better: Efficient Bounded Model Checking for Past LTL. Lecture Notes in Computer Science, 2005, , 380-395.	1.0	30
120	Effective Preprocessing in SAT Through Variable and Clause Elimination. Lecture Notes in Computer Science, 2005, , 61-75.	1.0	315
121	Resolve and Expand. Lecture Notes in Computer Science, 2005, , 59-70.	1.0	143
122	Shortest Counterexamples for Symbolic Model Checking of LTL with Past. Lecture Notes in Computer Science, 2005, , 493-509.	1.0	32
123	Efficient reduction of finite state model checking to reachability analysis. International Journal on Software Tools for Technology Transfer, 2004, 5, 185-204.	1.7	49
124	Using Block-Local Atomicity to Detect Stale-Value Concurrency Errors. Lecture Notes in Computer Science, 2004, , 150-164.	1.0	24
125	Simple Bounded LTL Model Checking. Lecture Notes in Computer Science, 2004, , 186-200.	1.0	49
126	JNuke: Efficient Dynamic Analysis for Java. Lecture Notes in Computer Science, 2004, , 462-465.	1.0	21



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127	Verifying the IEEE 1394 FireWire Tree Identify Protocol with SMV. Formal Aspects of Computing, 2003, 14, 267-280.	1.4	8
128	A satisfiability procedure for quantified Boolean formulae. Discrete Applied Mathematics, 2003, 130, 291-328.	0.5	33
129	Formal Methods Group ETH Zürich. Electronic Notes in Theoretical Computer Science, 2003, 80, 289-293.	0.9	0
130	High-level data races. Software Testing Verification and Reliability, 2003, 13, 207-227.	1.7	128
131	Bounded Model Checking. Advances in Computers, 2003, 58, 117-148.	1.2	490
132	SAT and ATPG. IEEE/ACM International Conference on Computer-Aided Design, Digest of Technical Papers, 2002, , .	0.0	20
133	Liveness Checking as Safety Checking. Electronic Notes in Theoretical Computer Science, 2002, 66, 160-177.	0.9	111
134	Title is missing!. Formal Methods in System Design, 2002, 20, 159-186.	0.9	15
135	Combining Local and Global Model Checking. Electronic Notes in Theoretical Computer Science, 2001, 23, 34-45.	0.9	0
136	Bounded Model Checking Using Satisfiability Solving. Formal Methods in System Design, 2001, 19, 7-34.	0.9	473
137	Symbolic Model Checking without BDDs. Lecture Notes in Computer Science, 1999, , 193-207.	1.0	1,037
138	Multiple State and Single State Tableaux for Combining Local and Global Model Checking. Lecture Notes in Computer Science, 1999, , 163-179.	1.0	15
139	Verifying Safety Properties of a PowerPC <sup>®</sup> Microprocessor Using Symbolic Model Checking without BDDs. Lecture Notes in Computer Science, 1999, , 60-71.	1.0	68
140	Efficient $\mathcal{Q}$ -calculus model checking. Lecture Notes in Computer Science, 1997, , 468-471.	1.0	17
141	Applying static analysis to large-scale, multi-threaded Java programs. , 0, , .		36
142	Clause Elimination for SAT and QSAT. Journal of Artificial Intelligence Research, 0, 53, 127-168.	7.0	42
143	Evaluating CDCL Restart Schemes. , 0, , .		7
144	Practical algebraic calculus and Nullstellensatz with the checkers Pacheck and Past <sup>2</sup> que and Nuss-Checker. Formal Methods in System Design, 0, , 1.	0.9	2

#	ARTICLE	IF	CITATIONS
145	Combining Conflict-Driven Clause Learning and Chronological Backtracking for Propositional Model Counting. , 0, , .		0