

# Clark W Barrett

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

115  
papers

2,752  
citations

24  
h-index

49  
g-index

117  
ext. papers

3,222  
ext. citations

0.9  
avg, IF

5.51  
L-index

#	Paper	IF	Citations
115	Bit-Precise Reasoning via Int-Blasting. <i>Lecture Notes in Computer Science</i> , <b>2022</b> , 496-518	0.9	3
114	cvc5: A Versatile and Industrial-Strength SMT Solver. <i>Lecture Notes in Computer Science</i> , <b>2022</b> , 415-442	0.9	24
113	Efficient Neural Network Analysis with Sum-of-Infeasibilities. <i>Lecture Notes in Computer Science</i> , <b>2022</b> , 143-163	0.9	3
112	Towards Satisfiability Modulo Parametric Bit-vectors. <i>Journal of Automated Reasoning</i> , <b>2021</b> , 65, 1001-1025		
111	DeepCert: Verification of Contextually Relevant Robustness for Neural Network Image Classifiers. <i>Lecture Notes in Computer Science</i> , <b>2021</b> , 3-17	0.9	4
110	Smt-Switch: A Solver-Agnostic C++ API for SMT Solving. <i>Lecture Notes in Computer Science</i> , <b>2021</b> , 377-386	0.9	3
109	On solving quantified bit-vector constraints using invertibility conditions. <i>Formal Methods in System Design</i> , <b>2021</b> , 57, 87	1.4	3
108	An SMT-Based Approach for Verifying Binarized Neural Networks. <i>Lecture Notes in Computer Science</i> , <b>2021</b> , 203-222	0.9	8
107	Pono: A Flexible and Extensible SMT-Based Model Checker. <i>Lecture Notes in Computer Science</i> , <b>2021</b> , 461-474	0.9	4
106	Algorithms for Verifying Deep Neural Networks. <i>Foundations and Trends in Optimization</i> , <b>2021</b> , 4, 244-404	1.5	16
105	Counterexample-Guided Prophecy for Model Checking Modulo the Theory of Arrays. <i>Lecture Notes in Computer Science</i> , <b>2021</b> , 113-132	0.9	3
104	Syntax-Guided Quantifier Instantiation. <i>Lecture Notes in Computer Science</i> , <b>2021</b> , 145-163	0.9	2
103	Politeness and Stable Infiniteness: Stronger Together. <i>Lecture Notes in Computer Science</i> , <b>2021</b> , 148-165	0.9	2
102	Chapter 33. Satisfiability Modulo Theories. <i>Frontiers in Artificial Intelligence and Applications</i> , <b>2021</b> ,	1.1	11
101	Algorithms for Verifying Deep Neural Networks <b>2021</b> ,		4
100	A Decision Procedure for String to Code Point Conversion. <i>Lecture Notes in Computer Science</i> , <b>2020</b> , 218-237	0.9	1
99	fault: A Python Embedded Domain-Specific Language for Metaprogramming Portable Hardware Verification Components. <i>Lecture Notes in Computer Science</i> , <b>2020</b> , 403-414	0.9	1

98	Partial Order Reduction for Deep Bug Finding in Synchronous Hardware. <i>Lecture Notes in Computer Science</i> , <b>2020</b> , 367-386	0.9	1
97	Politeness for the Theory of Algebraic Datatypes. <i>Lecture Notes in Computer Science</i> , <b>2020</b> , 238-255	0.9	3
96	The Move Prover. <i>Lecture Notes in Computer Science</i> , <b>2020</b> , 137-150	0.9	8
95	Simplifying Neural Networks Using Formal Verification. <i>Lecture Notes in Computer Science</i> , <b>2020</b> , 85-93	0.9	9
94	Verifying Recurrent Neural Networks Using Invariant Inference. <i>Lecture Notes in Computer Science</i> , <b>2020</b> , 57-74	0.9	10
93	Towards Verification of Neural Networks for Small Unmanned Aircraft Collision Avoidance <b>2020</b> ,		1
92	Verifying Deep-RL-Driven Systems <b>2019</b> ,		23
91	Processor Hardware Security Vulnerabilities and their Detection by Unique Program Execution Checking <b>2019</b> ,		7
90	Selected Extended Papers of NFM 2017: Preface. <i>Journal of Automated Reasoning</i> , <b>2019</b> , 63, 1003-1004	1	
89	G2SAT: Learning to Generate SAT Formulas. <i>Advances in Neural Information Processing Systems</i> , <b>2019</b> , 32, 10552-10563	2.2	
88	High-Level Abstractions for Simplifying Extended String Constraints in SMT. <i>Lecture Notes in Computer Science</i> , <b>2019</b> , 23-42	0.9	4
87	Syntax-Guided Rewrite Rule Enumeration for SMT Solvers. <i>Lecture Notes in Computer Science</i> , <b>2019</b> , 279-297	0.9	7
86	DRAT-based Bit-Vector Proofs in CVC4. <i>Lecture Notes in Computer Science</i> , <b>2019</b> , 298-305	0.9	2
85	The Marabou Framework for Verification and Analysis of Deep Neural Networks. <i>Lecture Notes in Computer Science</i> , <b>2019</b> , 443-452	0.9	99
84	cvc4sy: Smart and Fast Term Enumeration for Syntax-Guided Synthesis. <i>Lecture Notes in Computer Science</i> , <b>2019</b> , 74-83	0.9	23
83	Invertibility Conditions for Floating-Point Formulas. <i>Lecture Notes in Computer Science</i> , <b>2019</b> , 116-136	0.9	3
82	Towards Bit-Width-Independent Proofs in SMT Solvers. <i>Lecture Notes in Computer Science</i> , <b>2019</b> , 366-384	0.9	6
81	Extending SMT Solvers to Higher-Order Logic. <i>Lecture Notes in Computer Science</i> , <b>2019</b> , 35-54	0.9	14

80	Integration and Flight Test of Small UAS Detect and Avoid on A Miniaturized Avionics Platform <b>2019</b> ,		1
79	Refutation-based synthesis in SMT. <i>Formal Methods in System Design</i> , <b>2019</b> , 55, 73-102	1.4	14
78	Symbolic quick error detection using symbolic initial state for pre-silicon verification <b>2018</b> ,		3
77	EMME: A Formal Tool for ECMAScript Memory Model Evaluation. <i>Lecture Notes in Computer Science</i> , <b>2018</b> , 55-71	0.9	
76	DeepSafe: A Data-Driven Approach for Assessing Robustness of Neural Networks. <i>Lecture Notes in Computer Science</i> , <b>2018</b> , 3-19	0.9	38
75	Datatypes with Shared Selectors. <i>Lecture Notes in Computer Science</i> , <b>2018</b> , 591-608	0.9	5
74	Solving Quantified Bit-Vectors Using Invertibility Conditions. <i>Lecture Notes in Computer Science</i> , <b>2018</b> , 236-255	0.9	13
73	CoSA: Integrated Verification for Agile Hardware Design <b>2018</b> ,		12
72	Satisfiability Modulo Theories <b>2018</b> , 305-343		128
71	p4pktgen <b>2018</b> ,		18
70	Designing Theory Solvers with Extensions. <i>Lecture Notes in Computer Science</i> , <b>2017</b> , 22-40	0.9	9
69	E-QED: Electrical Bug Localization During Post-silicon Validation Enabled by Quick Error Detection and Formal Methods. <i>Lecture Notes in Computer Science</i> , <b>2017</b> , 104-125	0.9	3
68	Constraint solving for finite model finding in SMT solvers*. <i>Theory and Practice of Logic Programming</i> , <b>2017</b> , 17, 516-558	0.8	
67	Scaling Up DPLL(T) String Solvers Using Context-Dependent Simplification. <i>Lecture Notes in Computer Science</i> , <b>2017</b> , 453-474	0.9	21
66	SMTCoq: A Plug-In for Integrating SMT Solvers into Coq. <i>Lecture Notes in Computer Science</i> , <b>2017</b> , 126-133.	0.9	30
65	Partitioned Memory Models for Program Analysis. <i>Lecture Notes in Computer Science</i> , <b>2017</b> , 539-558	0.9	10
64	Relational Constraint Solving in SMT. <i>Lecture Notes in Computer Science</i> , <b>2017</b> , 148-165	0.9	11
63	Reluplex: An Efficient SMT Solver for Verifying Deep Neural Networks. <i>Lecture Notes in Computer Science</i> , <b>2017</b> , 97-117	0.9	333

62	Symbolic Quick Error Detection for Pre-Silicon and Post-Silicon Validation: Frequently Asked Questions. <i>IEEE Design and Test</i> , <b>2016</b> , 33, 55-62	1.4	
61	Lazy proofs for DPLL(T)-based SMT solvers <b>2016</b> ,		12
60	Efficient solving of string constraints for security analysis <b>2016</b> ,		2
59	An efficient SMT solver for string constraints. <i>Formal Methods in System Design</i> , <b>2016</b> , 48, 206-234	1.4	23
58	A New Decision Procedure for Finite Sets and Cardinality Constraints in SMT. <i>Lecture Notes in Computer Science</i> , <b>2016</b> , 82-98	0.9	17
57	Theory-aided model checking of concurrent transition systems <b>2015</b> ,		6
56	<b>2015</b> ,		7
55	Counterexample-Guided Quantifier Instantiation for Synthesis in SMT. <i>Lecture Notes in Computer Science</i> , <b>2015</b> , 198-216	0.9	63
54	Deciding Local Theory Extensions via E-matching. <i>Lecture Notes in Computer Science</i> , <b>2015</b> , 87-105	0.9	9
53	A Decision Procedure for Regular Membership and Length Constraints over Unbounded Strings. <i>Lecture Notes in Computer Science</i> , <b>2015</b> , 135-150	0.9	16
52	Fine Grained SMT Proofs for the Theory of Fixed-Width Bit-Vectors. <i>Lecture Notes in Computer Science</i> , <b>2015</b> , 340-355	0.9	9
51	Cascade. <i>Lecture Notes in Computer Science</i> , <b>2015</b> , 420-422	0.9	2
50	A DPLL(T) Theory Solver for a Theory of Strings and Regular Expressions. <i>Lecture Notes in Computer Science</i> , <b>2014</b> , 646-662	0.9	73
49	Leveraging linear and mixed integer programming for SMT <b>2014</b> ,		15
48	A Tale of Two Solvers: Eager and Lazy Approaches to Bit-Vectors. <i>Lecture Notes in Computer Science</i> , <b>2014</b> , 680-695	0.9	19
47	Cascade 2.0. <i>Lecture Notes in Computer Science</i> , <b>2014</b> , 142-160	0.9	8
46	Decision Procedures: An Algorithmic Point of View, by Daniel Kroening and Ofer Strichman, Springer-Verlag, 2008. <i>Journal of Automated Reasoning</i> , <b>2013</b> , 51, 453-456	1	5
45	Being careful about theory combination. <i>Formal Methods in System Design</i> , <b>2013</b> , 42, 67-90	1.4	2

44	6 Years of SMT-COMP. <i>Journal of Automated Reasoning</i> , <b>2013</b> , 50, 243-277	1	31
43	The design and implementation of the model constructing satisfiability calculus <b>2013</b> ,		14
42	Simplex with sum of infeasibilities for SMT <b>2013</b> ,		6
41	Quantifier Instantiation Techniques for Finite Model Finding in SMT. <i>Lecture Notes in Computer Science</i> , <b>2013</b> , 377-391	0.9	28
40	Witness Runs for Counter Machines. <i>Lecture Notes in Computer Science</i> , <b>2013</b> , 1-4	0.9	
39	Witness Runs for Counter Machines. <i>Lecture Notes in Computer Science</i> , <b>2013</b> , 120-150	0.9	1
38	The SMT-LIB Initiative and the Rise of SMT. <i>Lecture Notes in Computer Science</i> , <b>2011</b> , 3-3	0.9	8
37	CVC4. <i>Lecture Notes in Computer Science</i> , <b>2011</b> , 171-177	0.9	413
36	Sharing Is Caring: Combination of Theories. <i>Lecture Notes in Computer Science</i> , <b>2011</b> , 195-210	0.9	6
35	Verifying Low-Level Implementations of High-Level Datatypes. <i>Lecture Notes in Computer Science</i> , <b>2010</b> , 306-320	0.9	2
34	Polite Theories Revisited. <i>Lecture Notes in Computer Science</i> , <b>2010</b> , 402-416	0.9	18
33	Solving quantified verification conditions using satisfiability modulo theories. <i>Annals of Mathematics and Artificial Intelligence</i> , <b>2009</b> , 55, 101-122	0.8	16
32	DESIGN AND RESULTS OF THE 3RD ANNUAL SATISFIABILITY MODULO THEORIES COMPETITION (SMT-COMP 2007). <i>International Journal on Artificial Intelligence Tools</i> , <b>2008</b> , 17, 569-606	0.9	19
31	Pointer Analysis, Conditional Soundness, and Proving the Absence of Errors. <i>Lecture Notes in Computer Science</i> , <b>2008</b> , 62-77	0.9	6
30	An Abstract Decision Procedure for a Theory of Inductive Data Types. <i>Journal of Satisfiability, Boolean Modeling and Computation</i> , <b>2007</b> , 3, 21-46	1.2	28
29	An Abstract Decision Procedure for Satisfiability in the Theory of Recursive Data Types. <i>Electronic Notes in Theoretical Computer Science</i> , <b>2007</b> , 174, 23-37	0.7	17
28	Design and results of the 2nd annual satisfiability modulo theories competition (SMT-COMP 2006). <i>Formal Methods in System Design</i> , <b>2007</b> , 31, 221-239	1.4	4
27	CVC3 <b>2007</b> , 298-302		173

26	Solving Quantified Verification Conditions Using Satisfiability Modulo Theories. <i>Lecture Notes in Computer Science</i> , <b>2007</b> , 167-182	0.9	40
25	Cooperating Theorem Provers: A Case Study Combining HOL-Light and CVC Lite. <i>Electronic Notes in Theoretical Computer Science</i> , <b>2006</b> , 144, 43-51	0.7	28
24	cascade: C Assertion Checker and Deductive Engine. <i>Lecture Notes in Computer Science</i> , <b>2006</b> , 166-169	0.9	5
23	Splitting on Demand in SAT Modulo Theories. <i>Lecture Notes in Computer Science</i> , <b>2006</b> , 512-526	0.9	51
22	TVOC: A Translation Validator for Optimizing Compilers. <i>Lecture Notes in Computer Science</i> , <b>2005</b> , 291-295	0.9	35
21	Combining SAT Methods with Non-Clausal Decision Heuristics. <i>Electronic Notes in Theoretical Computer Science</i> , <b>2005</b> , 125, 3-12	0.7	4
20	A Practical Approach to Partial Functions in CVC Lite. <i>Electronic Notes in Theoretical Computer Science</i> , <b>2005</b> , 125, 13-23	0.7	9
19	Into the Loops: Practical Issues in Translation Validation for Optimizing Compilers. <i>Electronic Notes in Theoretical Computer Science</i> , <b>2005</b> , 132, 53-71	0.7	30
18	Validating More Loop Optimizations. <i>Electronic Notes in Theoretical Computer Science</i> , <b>2005</b> , 141, 69-84	0.7	2
17	Translation and Run-Time Validation of Loop Transformations. <i>Formal Methods in System Design</i> , <b>2005</b> , 27, 335-360	1.4	32
16	Design and Results of the First Satisfiability Modulo Theories Competition (SMT-COMP 2005). <i>Journal of Automated Reasoning</i> , <b>2005</b> , 35, 373-390	1	22
15	CVC Lite: A New Implementation of the Cooperating Validity Checker. <i>Lecture Notes in Computer Science</i> , <b>2004</b> , 515-518	0.9	130
14	Run-Time Validation of Speculative Optimizations using CVC.1 <sup>1</sup> This research was supported in by NSF grant CCR-0098299.. <i>Electronic Notes in Theoretical Computer Science</i> , <b>2003</b> , 89, 89-107	0.7	1
13	Producing Proofs from an Arithmetic Decision Procedure in Elliptical LF. <i>Electronic Notes in Theoretical Computer Science</i> , <b>2002</b> , 70, 29-41	0.7	1
12	A Generalization of Shostak's Method for Combining Decision Procedures. <i>Lecture Notes in Computer Science</i> , <b>2002</b> , 132-146	0.9	19
11	Checking Satisfiability of First-Order Formulas by Incremental Translation to SAT. <i>Lecture Notes in Computer Science</i> , <b>2002</b> , 236-249	0.9	64
10	CVC: A Cooperating Validity Checker. <i>Lecture Notes in Computer Science</i> , <b>2002</b> , 500-504	0.9	77
9	A Framework for Cooperating Decision Procedures. <i>Lecture Notes in Computer Science</i> , <b>2000</b> , 79-98	0.9	11

8	A Decision Procedure for Bit-Vector Arithmetic <b>1998</b> ,		12
7	Validity checking for combinations of theories with equality. <i>Lecture Notes in Computer Science</i> , <b>1996</b> , 187-201	0.9	76
6	Automatic generation of invariants in processor verification. <i>Lecture Notes in Computer Science</i> , <b>1996</b> , 377-388	0.9	13
5	Towards Proving the Adversarial Robustness of Deep Neural Networks. <i>Electronic Proceedings in Theoretical Computer Science</i> , <i>EPTCS</i> ,257, 19-26		35
4	Verifying Bit-vector Invertibility Conditions in Coq (Extended Abstract). <i>Electronic Proceedings in Theoretical Computer Science</i> , <i>EPTCS</i> ,301, 18-26		1
3	Global optimization of objective functions represented by ReLU networks. <i>Machine Learning</i> ,1	4	5
2	Reluplex: a calculus for reasoning about deep neural networks. <i>Formal Methods in System Design</i> ,1	1.4	10
1	Polite Combination of Algebraic Datatypes. <i>Journal of Automated Reasoning</i> ,1	1	