Toby Walsh

List of Publications by Year in descending order

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163	3,447	172457	206112
papers	citations	29 h-index	48 g-index

180	180	180	1467
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	A theory of abstraction. Artificial Intelligence, 1992, 57, 323-389.	5.8	214
2	The TSP phase transition. Artificial Intelligence, 1996, 88, 349-358.	5.8	102
3	Random Constraint Satisfaction: Flaws and Structure. Constraints, 2001, 6, 345-372.	0.7	101
4	Breaking Row and Column Symmetries in Matrix Models. Lecture Notes in Computer Science, 2002, , 462-477.	1.3	97
5	Justified representation in approval-based committee voting. Social Choice and Welfare, 2017, 48, 461-485.	0.8	95
6	Ethical Considerations in Artificial Intelligence Courses. AI Magazine, 2017, 38, 22-34.	1.6	85
7	Expert and Non-expert Opinion About Technological Unemployment. International Journal of Automation and Computing, 2018, 15, 637-642.	4.5	81
8	Analysis of Heuristics for Number Partitioning. Computational Intelligence, 1998, 14, 430-451.	3.2	73
9	Easy problems are sometimes hard. Artificial Intelligence, 1994, 70, 335-345.	5.8	70
10	An empirical study of dynamic variable ordering heuristics for the constraint satisfaction problem. Lecture Notes in Computer Science, 1996, , 179-193.	1.3	69
11	PrefLib: A Library for Preferences http://www.preflib.org. Lecture Notes in Computer Science, 2013, , 259-270.	1.3	67
12	Stochastic Constraint Programming: A Scenario-Based Approach. Constraints, 2006, 11, 53-80.	0.7	65
13	Fair assignment of indivisible objects under ordinal preferences. Artificial Intelligence, 2015, 227, 71-92.	5.8	52
14	On the notion of interestingness in automated mathematical discovery. International Journal of Human Computer Studies, 2000, 53, 351-375.	5.6	49
15	Domain filtering consistencies for non-binary constraints. Artificial Intelligence, 2008, 172, 800-822.	5.8	46
16	Local search and the number of solutions. Lecture Notes in Computer Science, 1996, , 119-133.	1.3	46
17	Configuration. IEEE Intelligent Systems, 2007, 22, 78-90.	4.0	45
18	Random Constraint Satisfaction: theory meets practice. Lecture Notes in Computer Science, 1998, , 325-339.	1.3	44

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19	A Compression Algorithm for Large Arity Extensional Constraints. , 2007, , 379-393.		44
20	Solving Non-clausal Formulas with DPLL Search. Lecture Notes in Computer Science, 2004, , 663-678.	1.3	43
21	Global Constraints for Lexicographic Orderings. Lecture Notes in Computer Science, 2002, , 93-108.	1.3	42
22	A calculus for and termination of rippling. Journal of Automated Reasoning, 1996, 16, 147-180.	1.4	41
23	Binary vs. non-binary constraintsâ˜†â˜†This paper includes results that first appeared in [1,4,23]. This research has been supported in part by the Canadian Government through their NSERC and IRIS programs, and by the EPSRC Advanced Research Fellowship program.. Artificial Intelligence, 2002, 140, 1-37.	5.8	41
24	Aggregating Partially Ordered Preferences. Journal of Logic and Computation, 2009, 19, 475-502.	0.8	40
25	Chapter 4 Constraint Programming. Foundations of Artificial Intelligence, 2008, 3, 181-211.	0.9	35
26	Online Cake Cutting. Lecture Notes in Computer Science, 2011, , 292-305.	1.3	33
27	Local Search Approaches in Stable Matching Problems. Algorithms, 2013, 6, 591-617.	2.1	32
28	Hard and soft constraints for reasoning about qualitative conditional preferences. Journal of Heuristics, 2006, 12, 263-285.	1.4	29
29	Winner determination in voting trees with incomplete preferences and weighted votes. Autonomous Agents and Multi-Agent Systems, 2012, 25, 130-157.	2.1	29
30	Decomposing Global Grammar Constraints. , 2007, , 590-604.		29
31	Dual Modelling of Permutation and Injection Problems. Journal of Artificial Intelligence Research, 0, 21, 357-391.	7.0	29
32	Propagation algorithms for lexicographic ordering constraints. Artificial Intelligence, 2006, 170, 803-834.	5.8	28
33	A Short Introduction to Preferences: Between Artificial Intelligence and Social Choice. Synthesis Lectures on Artificial Intelligence and Machine Learning, 2011, 5, 1-102.	0.8	27
34	The satisfiability constraint gap. Artificial Intelligence, 1996, 81, 59-80.	5.8	26
35	Super Solutions in Constraint Programming. Lecture Notes in Computer Science, 2004, , 157-172.	1.3	26
36	The Complexity of Reasoning with Global Constraints. Constraints, 2007, 12, 239-259.	0.7	26

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37	Filtering Algorithms for the NValue Constraint. Constraints, 2006, 11, 271-293.	0.7	25
38	Encodings of the Sequence Constraint. , 2007, , 210-224.		25
39	Elicitation strategies for soft constraint problems with missing preferences: Properties, algorithms and experimental studies. Artificial Intelligence, 2010, 174, 270-294.	5.8	24
40	Local Consistencies in SAT. Lecture Notes in Computer Science, 2004, , 299-314.	1.3	24
41	Fair Allocation of Indivisible Goods and Chores. , 2019, , .		24
42	Preferences in Constraint Satisfaction and Optimization. AI Magazine, 2009, 29, 58.	1.6	22
43	Manipulation complexity and gender neutrality in stable marriage procedures. Autonomous Agents and Multi-Agent Systems, 2011, 22, 183-199.	2.1	22
44	CGRASS: A System for Transforming Constraint Satisfaction Problems. Lecture Notes in Computer Science, 2003, , 15-30.	1.3	21
45	Restart Strategy Selection Using Machine Learning Techniques. Lecture Notes in Computer Science, 2009, , 312-325.	1.3	21
46	H-index manipulation by merging articles: Models, theory, and experiments. Artificial Intelligence, 2016, 240, 19-35.	5.8	20
47	Scaling effects in the CSP phase transition. Lecture Notes in Computer Science, 1995, , 70-87.	1.3	20
48	Flow-Based Propagators for the SEQUENCE and Related Global Constraints. Lecture Notes in Computer Science, 2008, , 159-174.	1.3	20
49	A translational approach to constraint answer set solving. Theory and Practice of Logic Programming, 2010, 10, 465-480.	1.5	19
50	Complexity of and algorithms for the manipulation of Borda, Nanson's and Baldwin's voting rules. Artificial Intelligence, 2014, 217, 20-42.	5.8	19
51	The constrainedness of Arc consistency. Lecture Notes in Computer Science, 1997, , 327-340.	1.3	18
52	New algorithms for max restricted path consistency. Constraints, 2011, 16, 372-406.	0.7	18
53	Consistency and Propagation with Multiset Constraints: A Formal Viewpoint. Lecture Notes in Computer Science, 2003, , 724-738.	1.3	18
54	Strategyproof peer selection using randomization, partitioning, and apportionment. Artificial Intelligence, 2019, 275, 295-309.	5.8	17

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55	The use of proof plans to sum series. Lecture Notes in Computer Science, 1992, , 325-339.	1.3	17
56	The Tractability of Global Constraints. Lecture Notes in Computer Science, 2004, , 716-720.	1.3	17
57	The Singularity May Never Be Near. AI Magazine, 2017, 38, 58-62.	1.6	16
58	The G12 Project: Mapping Solver Independent Models to Efficient Solutions. Lecture Notes in Computer Science, 2005, , 9-13.	1.3	16
59	Filtering Algorithms for the NValue Constraint. Lecture Notes in Computer Science, 2005, , 79-93.	1.3	15
60	Symmetry-breaking answer set solving. AI Communications, 2011, 24, 177-194.	1.2	15
61	A Fixpoint Based Encoding for Bounded Model Checking. Lecture Notes in Computer Science, 2002, , 238-255.	1.3	15
62	Constraint Patterns. Lecture Notes in Computer Science, 2003, , 53-64.	1.3	15
63	Breaking Value Symmetry. , 2007, , 880-887.		15
64	New Approaches to Constraint Acquisition. Lecture Notes in Computer Science, 2016, , 51-76.	1.3	14
65	Decomposable constraintsâ˜†â˜†Supported by EPSRC award GR/L/24014. The authors wish to thank other members of the APES research group.. Artificial Intelligence, 2000, 123, 133-156.	5.8	13
66	Breaking Symmetry of Interchangeable Variables and Values. , 2007, , 423-437.		13
67	Manipulating Tournaments in Cup and Round Robin Competitions. Lecture Notes in Computer Science, 2009, , 26-37.	1.3	13
68	On the Complexity and Completeness of Static Constraints for Breaking Row and Column Symmetry. Lecture Notes in Computer Science, 2010, , 305-320.	1.3	13
69	Local Search for Stable Marriage Problems with Ties and Incomplete Lists. Lecture Notes in Computer Science, 2010, , 64-75.	1.3	12
70	A Hybrid MIP/CP Approach for Multi-activity Shift Scheduling. Lecture Notes in Computer Science, 2012, , 633-646.	1.3	12
71	Turing's red flag. Communications of the ACM, 2016, 59, 34-37.	4.5	12
72	Artificial intelligence is breaking patent law. Nature, 2022, 605, 616-618.	27.8	12

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73	Hybrid Modelling for Robust Solving. Annals of Operations Research, 2004, 130, 19-39.	4.1	11
74	Randomness and Structure. Foundations of Artificial Intelligence, 2006, 2, 639-664.	0.9	11
75	A Study of Proxies for Shapley Allocations of Transport Costs. Journal of Artificial Intelligence Research, 0, 56, 573-611.	7.0	11
76	Fair allocation of indivisible goods and chores. Autonomous Agents and Multi-Agent Systems, 2022, 36, 1.	2.1	11
77	Calculating criticalities. Artificial Intelligence, 1996, 88, 39-67.	5.8	10
78	Fixing balanced knockout and double elimination tournaments. Artificial Intelligence, 2018, 262, 1-14.	5.8	10
79	The hardest random SAT problems. Lecture Notes in Computer Science, 1994, , 355-366.	1.3	10
80	Allocation in Practice. Lecture Notes in Computer Science, 2014, , 13-24.	1.3	10
81	Combining Symmetry Breaking and Global Constraints. Lecture Notes in Computer Science, 2009, , 84-98.	1.3	10
82	Asymptotic and finite size parameters for phase transitions: Hamiltonian circuit as a case study. Information Processing Letters, 1998, 65, 241-245.	0.6	9
83	Is computational complexity a barrier to manipulation?. Annals of Mathematics and Artificial Intelligence, 2011, 62, 7-26.	1.3	9
84	The weighted Grammar constraint. Annals of Operations Research, 2011, 184, 179-207.	4.1	9
85	Stability, Optimality and Manipulation in Matching Problems with Weighted Preferences. Algorithms, 2013, 6, 782-804.	2.1	9
86	Transforming and Refining Abstract Constraint Specifications. Lecture Notes in Computer Science, 2005, , 76-91.	1.3	9
87	Reformulating Global Grammar Constraints. Lecture Notes in Computer Science, 2009, , 132-147.	1.3	9
88	Decomposition of the NValue Constraint. Lecture Notes in Computer Science, 2010, , 114-128.	1.3	9
89	Mechanisms for Online Organ Matching. , 2017, , .		9
90	Pure Nash Equilibria in Online Fair Division. , 2017, , .		9

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91	Disjoint, Partition and Intersection Constraints for Set and Multiset Variables. Lecture Notes in Computer Science, 2004, , 138-152.	1.3	9
92	Reformulating Global Constraints: The Slide and Regular Constraints. Lecture Notes in Computer Science, 2007, , 80-92.	1.3	9
93	Facility Location Problem with Capacity Constraints: Algorithmic and Mechanism Design Perspectives. Proceedings of the AAAI Conference on Artificial Intelligence, 2020, 34, 1806-1813.	4.9	9
94	Termination orderings for rippling. Lecture Notes in Computer Science, 1994, , 466-483.	1.3	7
95	The All Different and Global Cardinality Constraints on Set, Multiset and Tuple Variables. Lecture Notes in Computer Science, 2006, , 1-13.	1.3	6
96	The Weighted Cfg Constraint. , 2008, , 323-327.		6
97	Restricted Global Grammar Constraints. Lecture Notes in Computer Science, 2009, , 501-508.	1.3	6
98	Compact Preference Representation in Stable Marriage Problems. Lecture Notes in Computer Science, 2009, , 390-401.	1.3	6
99	Symmetry Breaking Constraints: Recent Results. Proceedings of the AAAI Conference on Artificial Intelligence, 2012, 26, 2192-2198.	4.9	6
100	Tetravex is NP-complete. Information Processing Letters, 2006, 99, 171-174.	0.6	5
101	Range and Roots: Two common patterns for specifying and propagating counting and occurrence constraints. Artificial Intelligence, 2009, 173, 1054-1078.	5.8	5
102	Adaptive signal-vehicle cooperative controlling system. , 2011, , .		5
103	Reformulating Propositional Satisfiability as Constraint Satisfaction. Lecture Notes in Computer Science, 2000, , 233-246.	1.3	5
104	Online Estimation of SAT Solving Runtime. , 2008, , 133-138.		5
105	Breaking Symmetry with Different Orderings. Lecture Notes in Computer Science, 2013, , 545-561.	1.3	5
106	Beyond Finite Domains: The All Different and Global Cardinality Constraints. Lecture Notes in Computer Science, 2005, , 812-816.	1.3	5
107	Two Algorithms for Additive and Fair Division of Mixed Manna. Lecture Notes in Computer Science, 2020, , 3-17.	1.3	5
108	Filtering algorithms for the multiset ordering constraint. Artificial Intelligence, 2009, 173, 299-328.	5.8	4

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109	Most Competitive Mechanisms in Online Fair Division. Lecture Notes in Computer Science, 2017, , 44-57.	1.3	4
110	The ROOTS Constraint. Lecture Notes in Computer Science, 2006, , 75-90.	1.3	4
111	The Balance Constraint Family. Lecture Notes in Computer Science, 2014, , 174-189.	1.3	4
112	Candy Crush's Puzzling Mathematics. American Scientist, 2014, 102, 430.	0.1	4
113	Abstract Proof Checking: An Example Motivated by an Incompleteness Theorem. Journal of Automated Reasoning, 1997, 19, 319-346.	1.4	3
114	Orbital shrinking: Theory and applications. Discrete Applied Mathematics, 2017, 222, 109-123.	0.9	3
115	Group Envy Freeness and Group Pareto Efficiency in Fair Division with Indivisible Items. Lecture Notes in Computer Science, 2018, , 57-72.	1.3	3
116	A Branch-and-Price Framework for the Maximum Covering and Patrol Routing Problem. Lecture Notes in Management and Industrial Engineering, 2021, , 59-80.	0.4	3
117	Models of Injection Problems. Lecture Notes in Computer Science, 2002, , 781-781.	1.3	3
118	SAT and Hybrid Models of the Car Sequencing Problem. Lecture Notes in Computer Science, 2014, , 268-283.	1.3	3
119	Elicitation Strategies for Fuzzy Constraint Problems with Missing Preferences: Algorithms and Experimental Studies. Lecture Notes in Computer Science, 2008, , 402-417.	1.3	3
120	Parameterized Complexity Results in Symmetry Breaking. Lecture Notes in Computer Science, 2010, , 4-13.	1.3	3
121	Strategy Proof Mechanisms for Facility Location at Limited Locations. Lecture Notes in Computer Science, 2021, , 113-124.	1.3	3
122	Equilibria in Sequential Allocation. Lecture Notes in Computer Science, 2017, , 270-283.	1.3	3
123	Expected Outcomes and Manipulations in Online Fair Division. Lecture Notes in Computer Science, 2017, , 29-43.	1.3	3
124	Fairness in Deceased Organ Matching. , 2018, , .		3
125	The inevitability of inconsistent abstract spaces. Journal of Automated Reasoning, 1993, 11, 23-41.	1.4	2
126	Multiset variable representations and constraint propagation. Constraints, 2013, 18, 307-343.	0.7	2

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127	What ifâ€¦ We create human-level artificial intelligence?. New Scientist, 2016, 232, 32-34.	0.0	2
128	h-Index manipulation by undoing merges. Quantitative Science Studies, 2020, 1, 1529-1552.	3.3	2
129	The Range Constraint: Algorithms and Implementation. Lecture Notes in Computer Science, 2006, , 59-73.	1.3	2
130	The AllDifferent Constraint with Precedences. Lecture Notes in Computer Science, 2011, , 36-52.	1.3	2
131	Stability and Optimality in Matching Problems with Weighted Preferences. Communications in Computer and Information Science, 2013, , 319-333.	0.5	2
132	Efficient Approximation of Well-Founded Justification and Well-Founded Domination. Lecture Notes in Computer Science, 2013, , 277-289.	1.3	2
133	Strategy-Proofness, Envy-Freeness and Pareto Efficiency in Online Fair Division with Additive Utilities. Lecture Notes in Computer Science, 2019, , 527-541.	1.3	2
134	The troubling future for facial recognition software. Communications of the ACM, 2022, 65, 35-36.	4.5	2
135	Will AI end privacy? How do we avoid an Orwellian future. AI and Society, 0, , 1.	4.6	2
136	Satisfiability in the Year 2000. Journal of Automated Reasoning, 2002, 28, 99-99.	1.4	1
137	Reports of the 2016 AAAI Workshop Program. AI Magazine, 2016, 37, 99-108.	1.6	1
138	Three generalizations of the FOCUS constraint. Constraints, 2016, 21, 495-532.	0.7	1
139	Who speaks for AI?. AI Matters, 2016, 2, 4-14.	0.4	1
140	The RegularGcc Matrix Constraint. Lecture Notes in Computer Science, 2012, , 206-217.	1.3	1
141	Parliamentary Voting Procedures: Agenda Control, Manipulation, and Uncertainty. Journal of Artificial Intelligence Research, 0, 59, 133-173.	7.0	1
142	Restricted Manipulation in Iterative Voting: Convergence and Condorcet Efficiency. Electronic Proceedings in Theoretical Computer Science, EPTCS, 0, 112, 17-24.	0.8	1
143	Symmetry within and between Solutions. Lecture Notes in Computer Science, 2010, , 11-13.	1.3	1
144	Symmetry Breaking for Distributed Multi-Context Systems. Lecture Notes in Computer Science, 2011, , 26-39.	1.3	1

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145	An Adaptive Model Restarts Heuristic. Lecture Notes in Computer Science, 2013, , 369-377.	1.3	1
146	Reasoning about Constraint Models. Lecture Notes in Computer Science, 2014, , 795-808.	1.3	1
147	A general purpose reasoner for abstraction. Lecture Notes in Computer Science, 1996, , 323-335.	1.3	1
148	A Local Search Approach for Incomplete Soft Constraint Problems: Experimental Results on Meeting Scheduling Problems. Lecture Notes in Computer Science, 2017, , 403-418.	1.3	1
149	Fair Online Allocation of Perishable Goods and its Application to Electric Vehicle Charging. , 2019, , .		1
150	On routing and scheduling a fleet of resource-constrained vessels to provide ongoing continuous patrol coverage. Annals of Operations Research, 2022, 312, 723-760.	4.1	1
151	Minimal-envy Conference Paper Assignment: Formulation and a Fast Iterative Algorithm. , 2021, , .		1
152	ECAI'92: A Methodological Malaise?. AI Communications, 1993, 6, 59-61.	1.2	0
153	General purpose proof plans. , 1993, , 379-383.		0
154	Paul R. Cohen's Empirical Methods for Artificial Intelligence. Artificial Intelligence, 1999, 113, 285-290.	5.8	0
155	Satisfiability in the Year 2005. Journal of Automated Reasoning, 2006, 35, 1-2.	1.4	0
156	AI@NICTA. AI Magazine, 2012, 33, 115.	1.6	0
157	Reports on the 2015 AAAI Workshop Program. AI Magazine, 2015, 36, 90-101.	1.6	0
158	Two desirable fairness concepts for allocation of indivisible objects under ordinal preferences. , 2016, 14, 16-21.		0
159	Is Computational Complexity a Barrier to Manipulation?. Lecture Notes in Computer Science, 2010, , 1-7.	1.3	0
160	Exploiting Constraints. Lecture Notes in Computer Science, 2012, , 7-13.	1.3	0
161	Monotone and Online Fair Division. Lecture Notes in Computer Science, 2019, , 60-75.	1.3	0
162	Adventures in Mathematical Reasoning. , 2021, , 51-61.		0

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163	Satisfiability in the Year 2005. Journal of Automated Reasoning, 0, , 1-2.	1.4	0