Erik D Demaine

List of Publications by Citations

191 papers	3,623 citations	30 h-index	53 g-index
199 ext. papers	4,249 ext. citations	0.9 avg, IF	5.34 L-index

#	Paper	IF	Citations
191	Geometric Folding Algorithms: Linkages, Origami, Polyhedra **2007**,		270
190	Subexponential parameterized algorithms on bounded-genus graphs and H -minor-free graphs. *Journal of the ACM*, **2005**, 52, 866-893	2	201
189	Representing Trees of Higher Degree. *Algorithmica*, **2005**, 43, 275-292	0.9	140
188	PSPACE-completeness of sliding-block puzzles and other problems through the nondeterministic constraint logic model of computation. *Theoretical Computer Science*, **2005**, 343, 72-96	1.1	137
187	On the complexity of reconfiguration problems. *Theoretical Computer Science*, **2011**, 412, 1054-1065	1.1	136
186	Correlation clustering in general weighted graphs. *Theoretical Computer Science*, **2006**, 361, 172-187	1.1	126
185	The Bidimensionality Theory and Its Algorithmic Applications. *Computer Journal*, **2007**, 51, 292-302	1.3	123
184	Jigsaw Puzzles, Edge Matching, and Polyomino Packing: Connections and Complexity. *Graphs and Combinatorics*, **2007**, 23, 195-208	0.5	118
183	Linearity of grid minors in treewidth with applications through bidimensionality. *Combinatorica*, **2008**, 28, 19-36	0.9	86
182	Games, Puzzles, and Computation		77
181	Staged self-assembly: nanomanufacture of arbitrary shapes with O(1) glues. *Natural Computing*, **2008**, 7, 347-370	1.3	75
180	Fixed-parameter algorithms for (k , r)-center in planar graphs and map graphs. *ACM Transactions on Algorithms*, **2005**, 1, 33-47	1.2	72
179	Online searching with turn cost. *Theoretical Computer Science*, **2006**, 361, 342-355	1.1	65
178	Programmable Assembly With Universally Foldable Strings (Moteins). *IEEE Transactions on Robotics*, **2011**, 27, 718-729	6.5	54
177	Folding flat silhouettes and wrapping polyhedral packages: New results in computational origami. *Computational Geometry: Theory and Applications*, **2000**, 16, 3-21	0.4	53
176	Tight bounds on maximal and maximum matchings. *Discrete Mathematics*, **2004**, 285, 7-15	0.7	52
175	Bidimensional Parameters and Local Treewidth. *SIAM Journal on Discrete Mathematics*, **2004**, 18, 501-511	0.7	51

156	An end-to-end approach to making self-folded 3D surface shapes by uniform heating **2014**,		26
155	Approximation algorithms for classes of graphs excluding single-crossing graphs as minors. *Journal of Computer and System Sciences*, **2004**, 69, 166-195	1	26
154	Linear-time algorithm for sliding tokens on trees. *Theoretical Computer Science*, **2015**, 600, 132-142	1.1	25
153	Diameter and Treewidth in Minor-Closed Graph Families, Revisited. *Algorithmica*, **2004**, 40, 211-215	0.9	25
152	Hinged dissection of polyominoes and polyforms. *Computational Geometry: Theory and Applications*, **2005**, 31, 237-262	0.4	25
151	Folding Flat Crease Patterns With Thick Materials. *Journal of Mechanisms and Robotics*, **2016**, 8,	2.2	24
150	The Stackelberg Minimum Spanning Tree Game. *Algorithmica*, **2011**, 59, 129-144	0.9	24
149	A unified access bound on comparison-based dynamic dictionaries. *Theoretical Computer Science*, **2007**, 382, 86-96	1.1	24
148	The Bidimensional Theory of Bounded-Genus Graphs. *SIAM Journal on Discrete Mathematics*, **2006**, 20, 357-371	0.7	23
147	A linear lower bound on index size for text retrieval. *Journal of Algorithms*, **2003**, 48, 2-15		23
146	Swapping labeled tokens on graphs. *Theoretical Computer Science*, **2015**, 586, 81-94	1.1	21
145	What is the optimal shape of a city?. *Journal of Physics A*, **2004**, 37, 147-159		21
144	Approximability of partitioning graphs with supply and demand. *Journal of Discrete Algorithms*, **2008**, 6, 627-650		20
143	An Optimal Cache-Oblivious Priority Queue and Its Application to Graph Algorithms. *SIAM Journal on Computing*, **2007**, 36, 1672-1695	1.1	20
142	Polygons cuttable by a circular saw. *Computational Geometry: Theory and Applications*, **2001**, 20, 69-84	0.4	20
141	Necklaces, Convolutions, and X+Y. *Algorithmica*, **2014**, 69, 294-314	0.9	19
140	Polynomial-Time Approximation Schemes for Subset-Connectivity Problems in Bounded-Genus Graphs. *Algorithmica*, **2014**, 68, 287-311	0.9	19
139	Algorithmic Graph Minor Theory: Improved Grid Minor Bounds and Wagner₃ Contraction. *Algorithmica*, **2009**, 54, 142-180	0.9	19

| 138 | Linear reconfiguration of cube-style modular robots. *Computational Geometry: Theory and Applications*, **2009**, 42, 652-663 | 0.4 | 19 |

| 137 | Hinged Dissections Exist. *Discrete and Computational Geometry*, **2012**, 47, 150-186 | 0.6 | 17 |

| 136 | On Cartesian Trees and Range Minimum Queries. *Algorithmica*, **2014**, 68, 610-625 | 0.9 | 17 |

| 135 | The Geometry of Binary Search Trees **2009**, | | 16 |

| 134 | An energy-driven approach to linkage unfolding **2004**, | | 16 |

| 133 | Fast allocation and deallocation with an improved buddy system. *Acta Informatica*, **2005**, 41, 273-291 | 0.9 | 16 |

| 132 | Filling holes in triangular meshes by curve unfolding **2009**, | | 15 |

| 131 | Hinged Dissection of Polypolyhedra. *Lecture Notes in Computer Science*, **2005**, 205-217 | 0.9 | 15 |

| 130 | **2014**, | | 14 |

| 129 | The distance geometry of music. *Computational Geometry: Theory and Applications*, **2009**, 42, 429-454 | 0.4 | 14 |

| 128 | Reconfiguring Massive Particle Swarms with Limited, Global Control. *Lecture Notes in Computer Science*, **2014**, 51-66 | 0.9 | 14 |

| 127 | Wrapping spheres with flat paper. *Computational Geometry: Theory and Applications*, **2009**, 42, 748-757 | 0.4 | 13 |

| 126 | Covering points by disjoint boxes with outliers. *Computational Geometry: Theory and Applications*, **2011**, 44, 178-190 | 0.4 | 13 |

| 125 | Reconfiguration of Cube-Style Modular Robots Using O(logn) Parallel Moves. *Lecture Notes in Computer Science*, **2008**, 342-353 | 0.9 | 13 |

| 124 | An End-to-End Approach to Self-Folding Origami Structures. *IEEE Transactions on Robotics*, **2018**, 34, 1409-1424 | 6.5 | 13 |

| 123 | Approximability of the subset sum reconfiguration problem. *Journal of Combinatorial Optimization*, **2014**, 28, 639-654 | 0.9 | 12 |

| 122 | Computational Complexity and an Integer Programming Model of Shakashaka. *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, **2014**, E97.A, 1213-1219 | 0.4 | 12 |

| 121 | Fast Algorithms for Hard Graph Problems: Bidimensionality, Minors, and Local Treewidth. *Lecture Notes in Computer Science*, **2005**, 517-533 | 0.9 | 12 |

120	Scheduling to minimize gaps and power consumption. *Journal of Scheduling*, **2013**, 16, 151-160	1.6	11
119	Efficient reconfiguration of lattice-based modular robots. *Computational Geometry: Theory and Applications*, **2013**, 46, 917-928	0.4	11
118	Geodesic ham-sandwich cuts **2004**,		11
117	Reconfiguring convex polygons. *Computational Geometry: Theory and Applications*, **2001**, 20, 85-95	0.4	11
116	Know When to Fold Em: Self-assembly of Shapes by Folding in Oritatami. *Lecture Notes in Computer Science*, **2018**, 19-36	0.9	11
115	One-Dimensional Staged Self-assembly. *Lecture Notes in Computer Science*, **2011**, 100-114	0.9	11
114	Refolding Planar Polygons. *Discrete and Computational Geometry*, **2009**, 41, 444-460	0.6	10
113	Approximation algorithms via contraction decomposition. *Combinatorica*, **2010**, 30, 533-552	0.9	10
112	Fun-Sort or the chaos of unordered binary search. *Discrete Applied Mathematics*, **2004**, 144, 231-236	1	10
111	Infinitesimally locked self-touching linkages with applications to locked trees. *Contemporary Mathematics*, **2002**, 287-311	1.6	10
110	Particle computation: complexity, algorithms, and logic. *Natural Computing*, **2019**, 18, 181-201	1.3	10
109	Polynomial-Time Algorithm for Sliding Tokens on Trees. *Lecture Notes in Computer Science*, **2014**, 389-400	0.9	9
108	Integer point sets minimizing average pairwise . *Computational Geometry: Theory and Applications*, **2011**, 44, 82-94	0.4	9
107	Constraint Logic: A Uniform Framework for Modeling Computation as Games **2008**,		9
106	Moving-Baseline Localization **2008**,		9
105	Quickly deciding minor-closed parameters in general graphs. *European Journal of Combinatorics*, **2007**, 28, 311-314	0.7	9
104	Geodesic Ham-Sandwich Cuts. *Discrete and Computational Geometry*, **2007**, 37, 325-339	0.6	9
103	Enumerating Foldings and Unfoldings Between Polygons and Polytopes. *Graphs and Combinatorics*, **2002**, 18, 93-104	0.5	9

102	New geometric algorithms for fully connected staged self-assembly. *Theoretical Computer Science*, **2017**, 671, 4-18	1.1	8
101	A simple proof that the (n2 1)-puzzle is hard. *Theoretical Computer Science*, **2018**, 732, 80-84	1.1	8
100	Coverage with k-transmitters in the presence of obstacles. *Journal of Combinatorial Optimization*, **2013**, 25, 208-233	0.9	8
99	Finding hidden independent sets in interval graphs. *Theoretical Computer Science*, **2004**, 310, 287-307	1.1	8
98	Solitaire Clobber. *Theoretical Computer Science*, **2004**, 313, 325-338	1.1	8
97	The Stackelberg Minimum Spanning Tree Game. *Lecture Notes in Computer Science*, **2007**, 64-76	0.9	8
96	Approximability of the Subset Sum Reconfiguration Problem. *Lecture Notes in Computer Science*, **2011**, 58-69	0.9	8
95	New Geometric Algorithms for Fully Connected Staged Self-Assembly. *Lecture Notes in Computer Science*, **2015**, 104-116	0.9	7
94	UNO is hard, even for a single player. *Theoretical Computer Science*, **2014**, 521, 51-61	1.1	7
93	One-dimensional staged self-assembly. *Natural Computing*, **2013**, 12, 247-258	1.3	7
92	The Stackelberg minimum spanning tree game on planar and bounded-treewidth graphs. *Journal of Combinatorial Optimization*, **2013**, 25, 19-46	0.9	7
91	Minimizing Movement: Fixed-Parameter Tractability. *ACM Transactions on Algorithms*, **2014**, 11, 1-29	1.2	7
90	Unfolding Orthogonal Polyhedra with Quadratic Refinement: The Delta-Unfolding Algorithm. *Graphs and Combinatorics*, **2014**, 30, 125-140	0.5	7
89	Continuous Blooming of Convex Polyhedra. *Graphs and Combinatorics*, **2011**, 27, 363-376	0.5	7
88	Morpion Solitaire. *Theory of Computing Systems*, **2006**, 39, 439-453	0.6	7
87	Voronoi game on graphs and its complexity **2006**,		7
86	Common Unfoldings of Polyominoes and Polycubes. *Lecture Notes in Computer Science*, **2011**, 44-54	0.9	7
85	Combining Binary Search Trees. *Lecture Notes in Computer Science*, **2013**, 388-399	0.9	7

84	Universal Reconfiguration of Facet-Connected Modular Robots by Pivots: The O(1) Musketeers. *Algorithmica*, **2021**, 83, 1316-1351	0.9	7
83	The Two-Handed Tile Assembly Model is not Intrinsically Universal. *Algorithmica*, **2016**, 74, 812-850	0.9	6
82	Efficient constant-velocity reconfiguration of crystalline robots**. *Robotica*, **2011**, 29, 59-71	2.1	6
81	Embedding Stacked Polytopes on a Polynomial-Size Grid **2011**,		5
80	Locked and Unlocked Chains of Planar Shapes. *Discrete and Computational Geometry*, **2010**, 44, 439-462	0.6	5
79	Optimally Adaptive Integration of Univariate Lipschitz Functions. *Algorithmica*, **2008**, 50, 255-278	0.9	5
78	Edge-unfolding nested polyhedral bands. *Computational Geometry: Theory and Applications*, **2008**, 39, 30-42	0.4	5
77	Puzzles, Art, and Magic with Algorithms. *Theory of Computing Systems*, **2006**, 39, 473-481	0.6	5
76	Locked and unlocked chains of planar shapes **2006**,		5
75	Low-Dimensional Embedding with Extra Information. *Discrete and Computational Geometry*, **2006**, 36, 609-632	0.6	5
74	PersiFS **2005**,		5
73	Realistic Reconfiguration of Crystalline (and Telecube) Robots. *Springer Tracts in Advanced Robotics*, **2009**, 433-447	0.5	5
72	Approximation Algorithms via Structural Results for Apex-Minor-Free Graphs. *Lecture Notes in Computer Science*, **2009**, 316-327	0.9	5
71	Unlocking history through automated virtual unfolding of sealed documents imaged by X-ray microtomography. *Nature Communications*, **2021**, 12, 1184	17.4	5
70	1.5-Approximation for Treewidth of Graphs Excluding a Graph with One Crossing as a Minor. *Lecture Notes in Computer Science*, **2002**, 67-80	0.9	5
69	Particle computation: Device fan-out and binary memory **2015**,		4
68	Worst-Case Optimal Tree Layout in External Memory. *Algorithmica*, **2015**, 72, 369-378	0.9	4
67	Simple Folding is Really Hard. *Journal of Information Processing*, **2017**, 25, 580-589	0.2	4

66	Generalized D-Forms Have No Spurious Creases. *Discrete and Computational Geometry*, **2010**, 43, 179-186	0.6	4
65	NP-completeness of generalized Kaboozle. *Journal of Information Processing*, **2012**, 20, 713-718	0.2	4
64	Confluently Persistent Tries for Efficient Version Control. *Algorithmica*, **2010**, 57, 462-483	0.9	4
63	Hinged dissections exist **2008**,		4
62	Box Pleating is Hard. *Lecture Notes in Computer Science*, **2016**, 167-179	0.9	4
61	The Stackelberg Minimum Spanning Tree Game on Planar and Bounded-Treewidth Graphs. *Lecture Notes in Computer Science*, **2009**, 125-136	0.9	4
60	Unfolding and Dissection of Multiple Cubes, Tetrahedra, and Doubly Covered Squares. *Journal of Information Processing*, **2017**, 25, 610-615	0.2	3
59	Algorithmic Folding Complexity. *Graphs and Combinatorics*, **2011**, 27, 341-351	0.5	3
58	Appendix B: Open problems at the 2002 Dagstuhl Seminar on Algorithmic Combinatorial Game Theory. *Theoretical Computer Science*, **2004**, 313, 539-543	1.1	3
57	Minimal Locked Trees. *Lecture Notes in Computer Science*, **2009**, 61-73	0.9	3
56	Fun with fonts: Algorithmic typography. *Theoretical Computer Science*, **2015**, 586, 111-119	1.1	2
55	Data Structures for Halfplane Proximity Queries and Incremental Voronoi Diagrams. *Algorithmica*, **2018**, 80, 3316-3334	0.9	2
54	Finding a Hamiltonian Path in a Cube with Specified Turns is Hard. *Journal of Information Processing*, **2013**, 21, 368-377	0.2	2
53	Dynamic ham-sandwich cuts in the plane. *Computational Geometry: Theory and Applications*, **2009**, 42, 419-428	0.4	2
52	Plane Embeddings of Planar Graph Metrics. *Discrete and Computational Geometry*, **2007**, 38, 615-637	0.6	2
51	Optimal adaptive algorithms for finding the nearest and farthest point on a parametric black-box curve **2004**,		2
50	The Bidimensional Theory of Bounded-Genus Graphs. *Lecture Notes in Computer Science*, **2004**, 191-203	0.9	2
49	Reconfiguring Undirected Paths. *Lecture Notes in Computer Science*, **2019**, 353-365	0.9	2

48	Flat Foldings of Plane Graphs with Prescribed Angles and Edge Lengths. *Lecture Notes in Computer Science*, **2014**, 272-283	0.9	2
47	Approximating the Canadian Traveller Problem with Online Randomization. *Algorithmica*, **2021**, 83, 1524-1543	0.9	2
46	Folding Polyominoes into (Poly)Cubes. *International Journal of Computational Geometry and Applications*, **2018**, 28, 197-226	0.3	2
45	Approximability of Partitioning Graphs with Supply and Demand. *Lecture Notes in Computer Science*, **2006**, 121-130	0.9	2
44	Fast Allocation and Deallocation with an Improved Buddy System. *Lecture Notes in Computer Science*, **1999**, 84-96	0.9	2
43	Folding and Punching Paper. *Journal of Information Processing*, **2017**, 25, 590-600	0.2	1
42	Picture-Hanging Puzzles. *Theory of Computing Systems*, **2014**, 54, 531-550	0.6	1
41	Embedding Stacked Polytopes on a Polynomial-Size Grid. *Discrete and Computational Geometry*, **2017**, 57, 782-809	0.6	1
40	Folded Structures Satisfying Multiple Conditions. *Journal of Information Processing*, **2017**, 25, 601-609	0.2	1
39	Any Monotone Function Is Realized by Interlocked Polygons. *Algorithms*, **2012**, 5, 148-157	1.8	1
38	GHOST CHIMNEYS. *International Journal of Computational Geometry and Applications*, **2012**, 22, 207-214	0.3	1
37	Geometric Restrictions on Producible Polygonal Protein Chains. *Algorithmica*, **2006**, 44, 167-181	0.9	1
36	Playing Dominoes Is Hard, Except by Yourself. *Lecture Notes in Computer Science*, **2014**, 137-146	0.9	1
35	Symmetric Assembly Puzzles are Hard, Beyond a Few Pieces. *Lecture Notes in Computer Science*, **2016**, 180-192	0.9	1
34	Dissection with the Fewest Pieces is Hard, Even to Approximate. *Lecture Notes in Computer Science*, **2016**, 37-48	0.9	1
33	Polyhedral Characterization of Reversible Hinged Dissections. *Graphs and Combinatorics*, **2020**, 36, 221-229	0.9	1
32	Trains, Games, and Complexity: 0/1/2-Player Motion Planning Through Input/Output Gadgets. *Lecture Notes in Computer Science*, **2022**, 187-198	0.9	1
31	Reprint of: Refold rigidity of convex polyhedra. *Computational Geometry: Theory and Applications*, **2014**, 47, 507-517	0.4	0

30   Symmetric assembly puzzles are hard, beyond a few pieces **2020**, 90, 101648-101648   0

29   Algorithmic Graph Minor Theory: Improved Grid Minor Bounds and Wagner's Contraction. *Lecture Notes in Computer Science*, **2006**, 3-15   0.9   0

28   Universal hinge patterns for folding strips efficiently into any grid polyhedron. *Computational Geometry: Theory and Applications*, **2020**, 89, 101633   0.4   0

27   Edge Matching with Inequalities, Triangles, Unknown Shape, and Two Players. *Journal of Information Processing*, **2020**, 28, 987-1007   0.2   0

26   Reconfiguration of satisfying assignments and subset sums: Easy to find, hard to connect. *Theoretical Computer Science*, **2020**, 806, 332-343   1.1   0

25   Folding polyominoes with holes into a cube. *Computational Geometry: Theory and Applications*, **2021**, 93, 101700   0.4   0

24   Arboral satisfaction: Recognition and LP approximation. *Information Processing Letters*, **2017**, 127, 1-5   0.8

23   The fewest clues problem. *Theoretical Computer Science*, **2018**, 748, 28-39   1.1

22   9. Tangled Tangles **2018**, 141-154

21   Juggling and Card Shuffling Meet Mathematical Fonts297-304

20   You Should Be Scared of German Ghost. *Journal of Information Processing*, **2015**, 23, 293-298   0.2

19   Computational Complexity of Piano-Hinged Dissections. *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, **2014**, E97.A, 1206-1212   0.4

18   Refold rigidity of convex polyhedra. *Computational Geometry: Theory and Applications*, **2013**, 46, 979-989   0.4

17   PSPACE-completeness of Pulling Blocks to Reach a Goal. *Journal of Information Processing*, **2020**, 28, 929-941   0.2

16   Adventures in Maze Folding Art. *Journal of Information Processing*, **2020**, 28, 745-749   0.2

15   Toward Unfolding Doubly Covered n-Stars. *Lecture Notes in Computer Science*, **2021**, 122-135   0.9

14   Ununfoldable polyhedra with 6 vertices or 6 faces. *Computational Geometry: Theory and Applications*, **2022**, 103, 101857   0.4

13   Optimally Adaptive Integration of Univariate Lipschitz Functions. *Lecture Notes in Computer Science*, **2006**, 142-153   0.9

12   Reconfiguration of Satisfying Assignments and Subset Sums: Easy to Find, Hard to Connect. *Lecture Notes in Computer Science*, **2018**, 365-377   0.9

11   Belga B-Trees. *Lecture Notes in Computer Science*, **2019**, 93-105   0.9

10   Tetris is NP-hard even with O(1) Rows or Columns. *Journal of Information Processing*, **2020**, 28, 942-958   0.2

9   Blame Trees. *Lecture Notes in Computer Science*, **2013**, 280-290   0.9

8   Fun with Fonts: Algorithmic Typography. *Lecture Notes in Computer Science*, **2014**, 16-27   0.9

7   Who witnesses The Witness? Finding witnesses in The Witness is hard and sometimes impossible. *Theoretical Computer Science*, **2020**, 839, 41-102   1.1

6   Infinite All-Layers Simple Foldability. *Graphs and Combinatorics*, **2020**, 36, 231-244   0.5

5   Path Puzzles: Discrete Tomography with a Path Constraint is Hard. *Graphs and Combinatorics*, **2020**, 36, 251-267   0.5

4   Belga B-Trees. *Theory of Computing Systems*, **2021**, 65, 541-558   0.6

3   Snipperclips: Cutting tools into desired polygons using themselves. *Computational Geometry: Theory and Applications*, **2021**, 98, 101784   0.4

2   Continuous flattening of all polyhedral manifolds using countably infinite creases. *Computational Geometry: Theory and Applications*, **2021**, 98, 101773   0.4

1   Traversability, Reconfiguration, and Reachability in the Gadget Framework. *Lecture Notes in Computer Science*, **2022**, 47-58   0.9