

David Eppstein

List of Publications by Year in descending order

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159
papers

5,443
citations

109264

35
h-index

98753

67
g-index

168
all docs

168
docs citations

168
times ranked

3051
citing authors

#	ARTICLE	IF	CITATIONS
1	Finding the k Shortest Paths. SIAM Journal on Computing, 1998, 28, 652-673.	0.8	944
2	The Crust and the $\hat{\Gamma}^2$ -Skeleton: Combinatorial Curve Reconstruction. Graphical Models, 1998, 60, 125-135.	1.4	322
3	Provably good mesh generation. Journal of Computer and System Sciences, 1994, 48, 384-409.	0.9	218
4	Sparsification—a technique for speeding up dynamic graph algorithms. Journal of the ACM, 1997, 44, 669-696.	1.8	202
5	MESH GENERATION AND OPTIMAL TRIANGULATION. Lecture Notes Series on Computing, 1995, , 47-123.	0.2	199
6	Reset Sequences for Monotonic Automata. SIAM Journal on Computing, 1990, 19, 500-510.	0.8	192
7	Listing All Maximal Cliques in Sparse Graphs in Near-Optimal Time. Lecture Notes in Computer Science, 2010, , 403-414.	1.0	173
8	MESH GENERATION AND OPTIMAL TRIANGULATION. Lecture Notes Series on Computing, 1992, , 23-90.	0.2	160
9	Spanning Trees and Spanners. , 2000, , 425-461.		139
10	Maintenance of a minimum spanning forest in a dynamic plane graph. Journal of Algorithms, 1992, 13, 33-54.	0.9	98
11	Arboricity and bipartite subgraph listing algorithms. Information Processing Letters, 1994, 51, 207-211.	0.4	98
12	Listing All Maximal Cliques in Large Sparse Real-World Graphs. Journal of Experimental Algorithmics, 2013, 18, .	0.7	96
13	Iterated nearest neighbors and finding minimal polytopes. Discrete and Computational Geometry, 1994, 11, 321-350.	0.4	94
14	Planar orientations with low out-degree and compaction of adjacency matrices. Theoretical Computer Science, 1991, 86, 243-266.	0.5	89
15	Optimal Point Placement for Mesh Smoothing. Journal of Algorithms, 1999, 30, 302-322.	0.9	75
16	Sparse dynamic programming II. Journal of the ACM, 1992, 39, 546-567.	1.8	73
17	Small Maximal Independent Sets and Faster Exact Graph Coloring. Journal of Graph Algorithms and Applications, 2003, 7, 131-140.	0.4	72
18	What's the difference?. Computer Communication Review, 2011, 41, 218-229.	1.5	64

#	ARTICLE	IF	CITATIONS
19	Sequence comparison with mixed convex and concave costs. <i>Journal of Algorithms</i> , 1990, 11, 85-101.	0.9	61
20	Finding minimum area k-gons. <i>Discrete and Computational Geometry</i> , 1992, 7, 45-58.	0.4	59
21	Geometric Thickness of Complete Graphs. <i>Journal of Graph Algorithms and Applications</i> , 2000, 4, 5-17.	0.4	56
22	APPROXIMATING CENTER POINTS WITH ITERATIVE RADON POINTS. <i>International Journal of Computational Geometry and Applications</i> , 1996, 06, 357-377.	0.3	55
23	Improved Combinatorial Group Testing Algorithms for Real-World Problem Sizes. <i>SIAM Journal on Computing</i> , 2007, 36, 1360-1375.	0.8	51
24	Confluent Drawings: Visualizing Non-planar Diagrams in a Planar Way. <i>Journal of Graph Algorithms and Applications</i> , 2005, 9, 31-52.	0.4	51
25	PARALLEL CONSTRUCTION OF QUADTREES AND QUALITY TRIANGULATIONS. <i>International Journal of Computational Geometry and Applications</i> , 1999, 09, 517-532.	0.3	50
26	Straggler Identification in Round-Trip Data Streams via Newton's Identities and Invertible Bloom Filters. <i>IEEE Transactions on Knowledge and Data Engineering</i> , 2011, 23, 297-306.	4.0	46
27	Area-Universal and Constrained Rectangular Layouts. <i>SIAM Journal on Computing</i> , 2012, 41, 537-564.	0.8	46
28	Tiling space and slabs with acute tetrahedra. <i>Computational Geometry: Theory and Applications</i> , 2004, 27, 237-255.	0.3	45
29	THE EXPECTED EXTREMES IN A DELAUNAY TRIANGULATION. <i>International Journal of Computational Geometry and Applications</i> , 1991, 01, 79-91.	0.3	44
30	Ununfoldable polyhedra with convex faces. <i>Computational Geometry: Theory and Applications</i> , 2003, 24, 51-62.	0.3	44
31	Quasiconvex analysis of multivariate recurrence equations for backtracking algorithms. <i>ACM Transactions on Algorithms</i> , 2006, 2, 492-509.	0.9	42
32	Succinct Greedy Geometric Routing Using Hyperbolic Geometry. <i>IEEE Transactions on Computers</i> , 2011, 60, 1571-1580.	2.4	42
33	QUADRILATERAL MESHING BY CIRCLE PACKING. <i>International Journal of Computational Geometry and Applications</i> , 2000, 10, 347-360.	0.3	41
34	The lattice dimension of a graph. <i>European Journal of Combinatorics</i> , 2005, 26, 585-592.	0.5	39
35	Separator Based Sparsification. <i>Journal of Computer and System Sciences</i> , 1996, 52, 3-27.	0.9	35
36	Selected Open Problems in Graph Drawing. <i>Lecture Notes in Computer Science</i> , 2004, , 515-539.	1.0	35

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37	Motorcycle Graphs: Canonical Quad Mesh Partitioning. Computer Graphics Forum, 2008, 27, 1477-1486.	1.8	35
38	Lombardi Drawings of Graphs. Journal of Graph Algorithms and Applications, 2012, 16, 85-108.	0.4	34
39	Approximating the minimum weight steiner triangulation. Discrete and Computational Geometry, 1994, 11, 163-191.	0.4	33
40	UOBPRM: A uniformly distributed obstacle-based PRM. , 2012, , .		33
41	Confluent Drawings: Visualizing Non-planar Diagrams in a Planar Way. Lecture Notes in Computer Science, 2004, , 1-12.	1.0	33
42	Dynamic Three-Dimensional Linear Programming. ORSA Journal on Computing, 1992, 4, 360-368.	1.7	32
43	Algorithms for proximity problems in higher dimensions. Computational Geometry: Theory and Applications, 1996, 5, 277-291.	0.3	30
44	The geometric thickness of low degree graphs. , 2004, , .		30
45	Confluent Layered Drawings. Algorithmica, 2007, 47, 439-452.	1.0	30
46	Structure of Graphs with Locally Restricted Crossings. SIAM Journal on Discrete Mathematics, 2017, 31, 805-824.	0.4	27
47	Parameterized Complexity of 1-Planarity. Journal of Graph Algorithms and Applications, 2018, 22, 23-49.	0.4	26
48	Improved Grid Map Layout by Point Set Matching. International Journal of Computational Geometry and Applications, 2015, 25, 101-122.	0.3	25
49	POLYNOMIAL-SIZE NONOBTUSE TRIANGULATION OF POLYGONS. International Journal of Computational Geometry and Applications, 1992, 02, 241-255.	0.3	24
50	The Effect of Faults on Network Expansion. Theory of Computing Systems, 2006, 39, 903-928.	0.7	24
51	Setting Parameters by Example. SIAM Journal on Computing, 2003, 32, 643-653.	0.8	23
52	Steinitz theorems for orthogonal polyhedra. , 2010, , .		23
53	Track Layouts, Layered Path Decompositions, and Leveled Planarity. Algorithmica, 2019, 81, 1561-1583.	1.0	23
54	The h-Index of a Graph and Its Application to Dynamic Subgraph Statistics. Lecture Notes in Computer Science, 2009, , 278-289.	1.0	23

#	ARTICLE	IF	CITATIONS
55	Graph-Theoretic Solutions to Computational Geometry Problems. Lecture Notes in Computer Science, 2010, , 1-16.	1.0	22
56	Separator-Based Sparsification II: Edge and Vertex Connectivity. SIAM Journal on Computing, 1998, 28, 341-381.	0.8	21
57	SKIP QUADTREES: DYNAMIC DATA STRUCTURES FOR MULTIDIMENSIONAL POINT SETS. International Journal of Computational Geometry and Applications, 2008, 18, 131-160.	0.3	21
58	Subgraph Isomorphism in Planar Graphs and Related Problems. , 2002, , 283-309.		21
59	The farthest point Delaunay triangulation minimizes angles. Computational Geometry: Theory and Applications, 1992, 1, 143-148.	0.3	19
60	Improved grid map layout by point set matching. , 2013, , .		19
61	Connectivity, graph minors, and subgraph multiplicity. Journal of Graph Theory, 1993, 17, 409-416.	0.5	18
62	Faster Circle Packing with Application to Nonobtuse Triangulation. International Journal of Computational Geometry and Applications, 1997, 07, 485-491.	0.3	18
63	Area-universal rectangular layouts. , 2009, , .		18
64	Separating Thickness from Geometric Thickness. Lecture Notes in Computer Science, 2002, , 150-162.	1.0	18
65	TRIANGULATING POLYGONS WITHOUT LARGE ANGLES. International Journal of Computational Geometry and Applications, 1995, 05, 171-192.	0.3	16
66	All maximal independent sets and dynamic dominance for sparse graphs. ACM Transactions on Algorithms, 2009, 5, 1-14.	0.9	16
67	On the Planar Split Thickness of Graphs. Algorithmica, 2018, 80, 977-994.	1.0	16
68	Finding the smallest spanning trees. BIT Numerical Mathematics, 1992, 32, 237-248.	1.0	15
69	2-3 Cuckoo Filters for Faster Triangle Listing and Set Intersection. , 2017, , .		15
70	A DETERMINISTIC LINEAR TIME ALGORITHM FOR GEOMETRIC SEPARATORS AND ITS APPLICATIONS. Fundamenta Informaticae, 1995, 22, 309-329.	0.3	14
71	Combinatorics and Geometry of Finite and Infinite Squaregraphs. SIAM Journal on Discrete Mathematics, 2010, 24, 1399-1440.	0.4	14
72	Planar Lombardi Drawings for Subcubic Graphs. Lecture Notes in Computer Science, 2013, , 126-137.	1.0	14

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73	Beta-skeletons have unbounded dilation. Computational Geometry: Theory and Applications, 2002, 23, 43-52.	0.3	13
74	Optimized color gamuts for tiled displays. , 2003, , .		13
75	Optimal Möbius Transformations for Information Visualization and Meshing. Lecture Notes in Computer Science, 2001, , 14-25.	1.0	13
76	Minimum dilation stars. Computational Geometry: Theory and Applications, 2007, 37, 27-37.	0.3	12
77	Drawing Trees with Perfect Angular Resolution and Polynomial Area. Discrete and Computational Geometry, 2013, 49, 157-182.	0.4	12
78	Crossing Patterns in Nonplanar Road Networks. , 2017, , .		12
79	Trees with Convex Faces and Optimal Angles. , 2006, , 77-88.		12
80	Crossing Minimization for 1-page and 2-page Drawings of Graphs with Bounded Treewidth. Lecture Notes in Computer Science, 2014, , 210-221.	1.0	12
81	Dynamic connectivity in digital images. Information Processing Letters, 1997, 62, 121-126.	0.4	11
82	Minimum dilation stars. , 2005, , .		11
83	Dynamic Graph Algorithms. Chapman & Hall/CRC Applied Algorithms and Data Structures Series, 2009, , 1-28.	0.1	11
84	Improved Combinatorial Group Testing for Real-World Problem Sizes. Lecture Notes in Computer Science, 2005, , 86-98.	1.0	11
85	Planar and Poly-arc Lombardi Drawings. Lecture Notes in Computer Science, 2012, , 308-319.	1.0	11
86	Average case analysis of dynamic geometric optimization. Computational Geometry: Theory and Applications, 1996, 6, 45-68.	0.3	10
87	Testing bipartiteness of geometric intersection graphs. ACM Transactions on Algorithms, 2009, 5, 1-35.	0.9	10
88	Automated Generation of Linkage Loop Equations for Planar One Degree-of-Freedom Linkages, Demonstrated up to 8-Bar. Journal of Mechanisms and Robotics, 2015, 7, .	1.5	10
89	Stack-Number is Not Bounded by Queue-Number. Combinatorica, 0, , 1.	0.6	10
90	Offline algorithms for dynamic minimum spanning tree problems. , 1991, , 392-399.		9

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91	Faster geometric k-point MST approximation. Computational Geometry: Theory and Applications, 1997, 8, 231-240.	0.3	9
92	Algorithms for media. Discrete Applied Mathematics, 2008, 156, 1308-1320.	0.5	9
93	A Möbius-Invariant Power Diagram and Its Applications to Soap Bubbles and Planar Lombardi Drawing. Discrete and Computational Geometry, 2014, 52, 515-550.	0.4	9
94	Space-Efficient Straggler Identification in Round-Trip Data Streams Via Newton's Identities and Invertible Bloom Filters. Lecture Notes in Computer Science, 2007, , 637-648.	1.0	9
95	Isometric Diamond Subgraphs. Lecture Notes in Computer Science, 2009, , 384-389.	1.0	9
96	Flows in One-Crossing-Minor-Free Graphs. Journal of Graph Algorithms and Applications, 2013, 17, 201-220.	0.4	9
97	Vertex-unfoldings of simplicial manifolds. , 2002, , .		7
98	Interconnect Criticality-Driven Delay Relaxation. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2007, 26, 1803-1817.	1.9	7
99	Manhattan orbifolds. Topology and Its Applications, 2010, 157, 494-507.	0.2	7
100	Subexponential-Time and FPT Algorithms for Embedded Flat Clustered Planarity. Lecture Notes in Computer Science, 2018, , 111-124.	1.0	7
101	Incremental and Decremental Maintenance of Planar Width. Journal of Algorithms, 2000, 37, 570-577.	0.9	6
102	Tangent Spheres and Triangle Centers. American Mathematical Monthly, 2001, 108, 63-66.	0.2	6
103	Linear-Time Algorithms for Geometric Graphs with Sublinearly Many Edge Crossings. SIAM Journal on Computing, 2010, 39, 3814-3829.	0.8	6
104	Parameterized Leaf Power Recognition via Embedding into Graph Products. Algorithmica, 2020, 82, 2337-2359.	1.0	6
105	Inapproximability of Orthogonal Compaction. Journal of Graph Algorithms and Applications, 2012, 16, 651-673.	0.4	6
106	Simple Recognition of Halin Graphs and Their Generalizations. Journal of Graph Algorithms and Applications, 2016, 20, 323-346.	0.4	6
107	Animating a continuous family of two-site Voronoi diagrams (and a proof of a bound on the number) Tj ETQq1 1 0.784314 rgBT /Over		5
108	k-Best Enumeration. , 2016, , 1003-1006.		5

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109	From Discrepancy to Majority. <i>Algorithmica</i> , 2018, 80, 1278-1297.	1.0	5
110	Paired Approximation Problems and Incompatible Inapproximabilities. , 2010, , .		5
111	TREE-WEIGHTED NEIGHBORS AND GEOMETRIC k SMALLEST SPANNING TREES. <i>International Journal of Computational Geometry and Applications</i> , 1994, 04, 229-238.	0.3	4
112	Approximate topological matching of quadrilateral meshes. , 2008, , .		4
113	Squarepants in a tree. <i>ACM Transactions on Algorithms</i> , 2009, 5, 1-24.	0.9	4
114	Diamond-kite adaptive quadrilateral meshing. <i>Engineering With Computers</i> , 2014, 30, 223-235.	3.5	4
115	Ramified Rectilinear Polygons: Coordinatization by Dendrons. <i>Discrete and Computational Geometry</i> , 2015, 54, 771-797.	0.4	4
116	Counting Polygon Triangulations is Hard. <i>Discrete and Computational Geometry</i> , 2020, 64, 1210-1234.	0.4	4
117	Efficient Algorithms for Sequence Analysis. , 1993, , 225-244.		4
118	Triangle-Free Penny Graphs: Degeneracy, Choosability, and Edge Count. <i>Lecture Notes in Computer Science</i> , 2018, , 506-513.	1.0	4
119	Contact Graphs of Circular Arcs. <i>Lecture Notes in Computer Science</i> , 2015, , 1-13.	1.0	4
120	Approximate topological matching of quad meshes. <i>Visual Computer</i> , 2009, 25, 771-783.	2.5	3
121	On 2-Site Voronoi Diagrams Under Geometric Distance Functions. <i>Journal of Computer Science and Technology</i> , 2013, 28, 267-277.	0.9	3
122	Bounds on the Complexity of Halfspace Intersections when the Bounded Faces have Small Dimension. <i>Discrete and Computational Geometry</i> , 2013, 50, 1-21.	0.4	3
123	Spanning Trees in Multipartite Geometric Graphs. <i>Algorithmica</i> , 2018, 80, 3177-3191.	1.0	3
124	Folding Polyominoes into (Poly)Cubes. <i>International Journal of Computational Geometry and Applications</i> , 2018, 28, 197-226.	0.3	3
125	Combinatorial Pair Testing: Distinguishing Workers from Slackers. <i>Lecture Notes in Computer Science</i> , 2013, , 316-327.	1.0	3
126	Planar Induced Subgraphs of Sparse Graphs. <i>Journal of Graph Algorithms and Applications</i> , 2015, 19, 281-297.	0.4	3

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127	Limitations on Realistic Hyperbolic Graph Drawing. Lecture Notes in Computer Science, 2021, , 343-357.	1.0	3
128	Clustering for faster network simplex pivots. Networks, 2000, 35, 173-180.	1.6	2
129	Single Triangle Strip and Loop on Manifolds with Boundaries. Computer Graphics and Image Processing (SIBGRAPI), Proceedings of the Brazilian Symposium on, 2006, , .	0.0	2
130	On 2-Site Voronoi Diagrams under Geometric Distance Functions. , 2011, , .		2
131	The graphs of planar soap bubbles. , 2013, , .		2
132	Near-linear-time deterministic plane Steiner spanners for \hat{A} well-spaced point sets. Computational Geometry: Theory and Applications, 2015, 49, 8-16.	0.3	2
133	The Parametric Closure Problem. ACM Transactions on Algorithms, 2018, 14, 1-22.	0.9	2
134	NC Algorithms for Computing a Perfect Matching, the Number of Perfect Matchings, and a Maximum Flow in One-Crossing-Minor-Free Graphs. , 2019, , .		2
135	Maximum Plane Trees in Multipartite Geometric Graphs. Algorithmica, 2019, 81, 1512-1534.	1.0	2
136	Grid Peeling and the Affine Curve-Shortening Flow. Experimental Mathematics, 2020, 29, 306-316.	0.5	2
137	Minor-Closed Graph Classes with Bounded Layered Pathwidth. SIAM Journal on Discrete Mathematics, 2020, 34, 1693-1709.	0.4	2
138	NC Algorithms for Computing a Perfect Matching and a Maximum Flow in One-Crossing-Minor-Free Graphs. SIAM Journal on Computing, 2021, 50, 1014-1033.	0.8	2
139	k-Best Enumeration. , 2014, , 1-4.		2
140	Learning Sequences: An Efficient Data Structure for Learning Spaces. , 2013, , 287-304.		2
141	Confluent Hasse Diagrams. Lecture Notes in Computer Science, 2012, , 2-13.	1.0	2
142	APPROXIMATE WEIGHTED FARTHEST NEIGHBORS AND MINIMUM DILATION STARS. Discrete Mathematics, Algorithms and Applications, 2010, 02, 553-565.	0.4	1
143	Distance-sensitive planar point location. Computational Geometry: Theory and Applications, 2016, 54, 17-31.	0.3	1
144	Treetopes and Their Graphs. Discrete and Computational Geometry, 2020, 64, 259-289.	0.4	1

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145	On Polyhedral Realization with Isosceles Triangles. <i>Graphs and Combinatorics</i> , 2021, 37, 1247-1269.	0.2	1
146	C-Planarity Testing of Embedded Clustered Graphs with Bounded Dual Carving-Width. <i>Algorithmica</i> , 2021, 83, 2471-2502.	1.0	1
147	Geometric Thickness of Complete Graphs. , 2004, , 39-51.		1
148	Optimal Embedding into Star Metrics. <i>Lecture Notes in Computer Science</i> , 2009, , 290-301.	1.0	1
149	The minimum expectation selection problem. <i>Random Structures and Algorithms</i> , 2002, 21, 278-292.	0.6	0
150	Planar Voronoi Diagrams for Sums of Convex Functions, Smoothed Distance and Dilation. , 2010, , .		0
151	Diamond-Kite Meshes: Adaptive Quadrilateral Meshing and Orthogonal Circle Packing. , 2013, , 261-277.		0
152	Antimatroids and Balanced Pairs. <i>Order</i> , 2014, 31, 81-99.	0.3	0
153	Folding a Paper Strip to Minimize Thickness. <i>Lecture Notes in Computer Science</i> , 2015, , 113-124.	1.0	0
154	From Discrepancy to Majority. <i>Lecture Notes in Computer Science</i> , 2016, , 390-402.	1.0	0
155	Track Layout Is Hard. <i>Lecture Notes in Computer Science</i> , 2016, , 499-510.	1.0	0
156	Reactive Proximity Data Structures for Graphs. <i>Lecture Notes in Computer Science</i> , 2018, , 777-789.	1.0	0
157	The Effect of Planarization on Width. <i>Lecture Notes in Computer Science</i> , 2018, , 560-572.	1.0	0
158	Upright-Quad Drawing of st-Planar Learning Spaces. , 2006, , 282-293.		0
159	Ununfoldable polyhedra with 6 vertices or 6 faces. <i>Computational Geometry: Theory and Applications</i> , 2022, 103, 101857.	0.3	0