

Helmut Pottmann

List of Publications by Citations

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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.

87
papers

3,203
citations

32
h-index

55
g-index

91
ext. papers

3,631
ext. citations

3.9
avg, IF

5.37
L-index

#	Paper	IF	Citations
87	Geometric modeling with conical meshes and developable surfaces. <i>ACM Transactions on Graphics</i> , 2006 , 25, 681-689	7.6	233
86	Fitting B-spline curves to point clouds by curvature-based squared distance minimization. <i>ACM Transactions on Graphics</i> , 2006 , 25, 214-238	7.6	221
85	Discovering structural regularity in 3D geometry. <i>ACM Transactions on Graphics</i> , 2008 , 27, 1-11	7.6	191
84	Geometry and Convergence Analysis of Algorithms for Registration of 3D Shapes. <i>International Journal of Computer Vision</i> , 2006 , 67, 277-296	10.6	137
83	Integral invariants for robust geometry processing. <i>Computer Aided Geometric Design</i> , 2009 , 26, 37-60	1.2	134
82	Curved folding. <i>ACM Transactions on Graphics</i> , 2008 , 27, 1-9	7.6	105
81	Approximation algorithms for developable surfaces. <i>Computer Aided Geometric Design</i> , 1999 , 16, 539-556	1.2	103
80	Geometry of multi-layer freeform structures for architecture. <i>ACM Transactions on Graphics</i> , 2007 , 26, 65	7.6	102
79	Freeform surfaces from single curved panels. <i>ACM Transactions on Graphics</i> , 2008 , 27, 1-10	7.6	101
78	Developable rational Bzier and B-spline surfaces. <i>Computer Aided Geometric Design</i> , 1995 , 12, 513-531	1.2	91
77	Design of self-supporting surfaces. <i>ACM Transactions on Graphics</i> , 2012 , 31, 1-11	7.6	90
76	Paneling architectural freeform surfaces. <i>ACM Transactions on Graphics</i> , 2010 , 29, 1-10	7.6	89
75	Registration without ICP. <i>Computer Vision and Image Understanding</i> , 2004 , 95, 54-71	4.3	87
74	Applications of Laguerre geometry in CAGD. <i>Computer Aided Geometric Design</i> , 1998 , 15, 165-186	1.2	83
73	A Laguerre geometric approach to rational offsets. <i>Computer Aided Geometric Design</i> , 1998 , 15, 223-249	1.2	83
72	Architectural geometry. <i>Computers and Graphics</i> , 2015 , 47, 145-164	1.8	78
71	Locally optimal cutting positions for 5-axis sculptured surface machining. <i>CAD Computer Aided Design</i> , 2003 , 35, 69-81	2.9	72

70	Form-finding with polyhedral meshes made simple. <i>ACM Transactions on Graphics</i> , 2014 , 33, 1-9	7.6	69
69	Rotational and helical surface approximation for reverse engineering. <i>Computing (Vienna/New York)</i> , 1998 , 60, 307-322	2.2	69
68	Interactive Design of Developable Surfaces. <i>ACM Transactions on Graphics</i> , 2016 , 35, 1-12	7.6	66
67	A concept for parametric surface fitting which avoids the parametrization problem. <i>Computer Aided Geometric Design</i> , 2003 , 20, 343-362	1.2	64
66	Computational Line Geometry. <i>Mathematics and Visualization</i> , 2010 ,	0.6	61
65	Shape space exploration of constrained meshes. <i>ACM Transactions on Graphics</i> , 2011 , 30, 1-12	7.6	57
64	A curvature theory for discrete surfaces based on mesh parallelity. <i>Mathematische Annalen</i> , 2010 , 348, 1-24	1	46
63	Towards efficient 5-axis flank CNC machining of free-form surfaces via fitting envelopes of surfaces of revolution. <i>CAD Computer Aided Design</i> , 2016 , 79, 1-11	2.9	42
62	Precise gouging-free tool orientations for 5-axis CNC machining. <i>CAD Computer Aided Design</i> , 2015 , 58, 220-229	2.9	41
61	Circular arc structures. <i>ACM Transactions on Graphics</i> , 2011 , 30, 1-12	7.6	41
60	The focal geometry of circular and conical meshes. <i>Advances in Computational Mathematics</i> , 2008 , 29, 249-268	1.6	41
59	Geodesic patterns. <i>ACM Transactions on Graphics</i> , 2010 , 29, 1-10	7.6	36
58	Packing circles and spheres on surfaces. <i>ACM Transactions on Graphics</i> , 2009 , 28, 1-8	7.6	35
57	Constrained 3D shape reconstruction using a combination of surface fitting and registration. <i>CAD Computer Aided Design</i> , 2006 , 38, 572-583	2.9	33
56	Laguerre minimal surfaces, isotropic geometry and linear elasticity. <i>Advances in Computational Mathematics</i> , 2009 , 31, 391-419	1.6	32
55	Darboux cyclides and webs from circles. <i>Computer Aided Geometric Design</i> , 2012 , 29, 77-97	1.2	30
54	From curve design algorithms to the design of rigid body motions. <i>Visual Computer</i> , 2004 , 20, 279-297	2.3	27
53	Polyhedral patterns. <i>ACM Transactions on Graphics</i> , 2015 , 34, 1-12	7.6	26

52	Automatic fitting of conical envelopes to free-form surfaces for flank CNC machining. <i>CAD Computer Aided Design</i> , 2017 , 91, 84-94	2.9	25
51	Cell packing structures. <i>CAD Computer Aided Design</i> , 2015 , 60, 70-83	2.9	21
50	Architectural Geometry and Fabrication-Aware Design. <i>Nexus Network Journal</i> , 2013 , 15, 195-208	0.3	21
49	Optimizing B-spline surfaces for developability and paneling architectural freeform surfaces. <i>CAD Computer Aided Design</i> , 2019 , 111, 29-43	2.9	16
48	Freeform Honeycomb Structures. <i>Computer Graphics Forum</i> , 2014 , 33, 185-194	2.4	16
47	Paneling architectural freeform surfaces 2010 ,		16
46	Infinitesimally flexible meshes and discrete minimal surfaces. <i>Monatshefte Fur Mathematik</i> , 2008 , 153, 347-365	0.7	15
45	Material-minimizing forms and structures. <i>ACM Transactions on Graphics</i> , 2017 , 36, 1-12	7.6	14
44	Geometry of multi-layer freeform structures for architecture 2007 ,		14
43	Discrete Surfaces in Isotropic Geometry. <i>Lecture Notes in Computer Science</i> , 2007 , 341-363	0.9	14
42	Quad-mesh based isometric mappings and developable surfaces. <i>ACM Transactions on Graphics</i> , 2020 , 39,	7.6	13
41	Discrete geodesic parallel coordinates. <i>ACM Transactions on Graphics</i> , 2019 , 38, 1-13	7.6	12
40	Geometric Computing for Freeform Architecture. <i>Journal of Mathematics in Industry</i> , 2011 , 1, 4	2.9	12
39	Case Studies in Cost-Optimized Paneling of Architectural Freeform Surfaces 2010 , 49-72		12
38	Geometric modeling with conical meshes and developable surfaces 2006 ,		12
37	Packing circles and spheres on surfaces 2009 ,		11
36	Architectural Geometry as Design Knowledge. <i>Architectural Design</i> , 2010 , 80, 72-77	0.8	10
35	Smooth surfaces from bilinear patches: Discrete affine minimal surfaces. <i>Computer Aided Geometric Design</i> , 2013 , 30, 476-489	1.2	9

34	New Strategies and Developments in Transparent Free-Form Design: From Facetted to Nearly Smooth Envelopes. <i>International Journal of Space Structures</i> , 2010 , 25, 185-197	0.8	9
33	Edge offset meshes in Laguerre geometry. <i>Advances in Computational Mathematics</i> , 2010 , 33, 45-73	1.6	9
32	Freeform quad-based kirigami. <i>ACM Transactions on Graphics</i> , 2020 , 39, 1-11	7.6	9
31	Designing patterns using triangle-quad hybrid meshes. <i>ACM Transactions on Graphics</i> , 2018 , 37, 1-14	7.6	7
30	Discretizations of Surfaces with Constant Ratio of Principal Curvatures. <i>Discrete and Computational Geometry</i> , 2020 , 63, 670-704	0.6	7
29	Geodesic patterns 2010 ,		6
28	Fair webs. <i>Visual Computer</i> , 2006 , 23, 83-94	2.3	6
27	Computational design of cold bent glass façades. <i>ACM Transactions on Graphics</i> , 2020 , 39, 1-16	7.6	6
26	Form Finding of Shell Bridges Using the Pneumatic Forming of Hardened Concrete Construction Principle. <i>Advances in Civil Engineering</i> , 2018 , 2018, 1-14	1.3	6
25	Geometry and tool motion planning for curvature adapted CNC machining. <i>ACM Transactions on Graphics</i> , 2021 , 40, 1-16	7.6	6
24	Visual smoothness of polyhedral surfaces. <i>ACM Transactions on Graphics</i> , 2019 , 38, 1-11	7.6	5
23	Smooth surfaces from rational bilinear patches. <i>Computer Aided Geometric Design</i> , 2014 , 31, 1-12	1.2	5
22	Checkerboard patterns with black rectangles. <i>ACM Transactions on Graphics</i> , 2019 , 38, 1-13	7.6	4
21	Curve-pleated structures. <i>ACM Transactions on Graphics</i> , 2019 , 38, 1-13	7.6	4
20	Ruled Laguerre minimal surfaces. <i>Mathematische Zeitschrift</i> , 2012 , 272, 645-674	0.7	4
19	Shape space exploration of constrained meshes 2011 ,		4
18	Characterizing envelopes of moving rotational cones and applications in CNC machining. <i>Computer Aided Geometric Design</i> , 2020 , 83, 101944	1.2	4
17	Multi-Nets. Classification of Discrete and Smooth Surfaces with Characteristic Properties on Arbitrary Parameter Rectangles. <i>Discrete and Computational Geometry</i> , 2020 , 63, 624-655	0.6	4

16	Principal symmetric meshes. <i>ACM Transactions on Graphics</i> , 2020 , 39,	7.6	3
15	Shape-morphing mechanical metamaterials. <i>CAD Computer Aided Design</i> , 2022 , 143, 103146	2.9	3
14	Circular arc structures 2011 ,		2
13	Computational Mechanical Modelling of Wood From Microstructural Characteristics Over Wood-Based Products to Advanced Timber Structures. <i>Lecture Notes in Civil Engineering</i> , 2019 , 639-673	0.3	2
12	Ruled Free Forms 2013 , 57-66		2
11	Using isometries for computational design and fabrication. <i>ACM Transactions on Graphics</i> , 2021 , 40, 1-12	7.6	2
10	Smooth polyhedral surfaces. <i>Advances in Mathematics</i> , 2020 , 363, 107004	1.3	1
9	Form-finding with polyhedral meshes made simple 2015 ,		1
8	Geometry and tool motion planning for curvature adapted CNC machining. <i>ACM Transactions on Graphics</i> , 2021 , 40, 1-16	7.6	1
7	Using isometries for computational design and fabrication. <i>ACM Transactions on Graphics</i> , 2021 , 40, 1-12	7.6	1
6	Computational design of weingarten surfaces. <i>ACM Transactions on Graphics</i> , 2021 , 40, 1-11	7.6	1
5	Characteristic parameterizations of surfaces with a constant ratio of principal curvatures. <i>Computer Aided Geometric Design</i> , 2022 , 93, 102074	1.2	0
4	GEOMETRIC MOTION DESIGN. <i>Series in Machine Perception and Artificial Intelligence</i> , 1995 , 104-119	0.3	
3	Vertex Normals and Face Curvatures of Triangle Meshes 2016 , 267-286		
2	Freeform Architecture and Discrete Differential Geometry. <i>Lecture Notes in Computer Science</i> , 2017 , 3-8	0.9	
1	Computational design of weingarten surfaces. <i>ACM Transactions on Graphics</i> , 2021 , 40, 1-11	7.6	