

# Alfred M Bruckstein

## List of Publications by Year in descending order

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174  
papers

8,213  
citations

116194

36  
h-index

58552

86  
g-index

182  
all docs

182  
docs citations

182  
times ranked

6651  
citing authors

#	ARTICLE	IF	CITATIONS
1	Search for Smart Evaders With Swarms of Sweeping Agents. IEEE Transactions on Robotics, 2022, 38, 1080-1100.	7.3	7
2	On Tracking and Capture in Proportional-Control Bearing-Only Unicycle Pursuit. , 2022, 6, 2132-2137.		0
3	A Locust-Inspired Model of Collective Marching on Rings. Entropy, 2022, 24, 918.	1.1	1
4	Modular ADMM-Based Strategies for Optimized Compression, Restoration, and Distributed Representations of Visual Data. , 2021, , 1-33.		1
5	Benefiting from Duplicates of Compressed Data: Shift-Based Holographic Compression of Images. Journal of Mathematical Imaging and Vision, 2021, 63, 380-393.	0.8	2
6	Search for smart evaders with sweeping agents. Robotica, 2021, 39, 2210-2245.	1.3	7
7	AntAlateâ€™A Multi-Agent Autonomy Framework. Frontiers in Robotics and AI, 2021, 8, 719496.	2.0	0
8	Probabilistic Gathering of Agents with Simple Sensors. SIAM Journal on Applied Mathematics, 2021, 81, 620-640.	0.8	2
9	Erratic Extremism Causes Dynamic Consensus: A New Model for Opinion Dynamics. SIAM Journal on Applied Dynamical Systems, 2021, 20, 2077-2107.	0.7	0
10	A sharp relative isoperimetric inequality for the square. Comptes Rendus Mathematique, 2021, 359, 1191-1199.	0.1	1
11	Holographic sensing. Applied and Computational Harmonic Analysis, 2020, 49, 296-315.	1.1	1
12	Seeing Things in Random-Dot Videos. Lecture Notes in Computer Science, 2020, , 195-208.	1.0	1
13	RGBD-Fusion: Depth Refinement for Diffuse and Specular Objects. Advances in Computer Vision and Pattern Recognition, 2020, , 73-113.	0.9	0
14	Probabilistic pursuits on graphs. Theoretical Computer Science, 2019, 795, 459-477.	0.5	4
15	On High-Resolution Adaptive Sampling of Deterministic Signals. Journal of Mathematical Imaging and Vision, 2019, 61, 944-966.	0.8	3
16	PointFlow: A Model for Automatically Tracing Object Boundaries and Inferring Illusory Contours. Lecture Notes in Computer Science, 2018, , 485-498.	1.0	2
17	The Cooperative Hunters â€™ Efficient and Scalable Drones Swarm for Multiple Targets Detection. Studies in Computational Intelligence, 2018, , 187-205.	0.7	2
18	Introduction to Swarm Search. Studies in Computational Intelligence, 2018, , 1-14.	0.7	3

#	ARTICLE	IF	CITATIONS
19	On Steering Swarms. Lecture Notes in Computer Science, 2018, , 403-410.	1.0	2
20	Restoration by Compression. IEEE Transactions on Signal Processing, 2018, 66, 5833-5847.	3.2	6
21	Guidance of Swarms with Agents Having Bearing Only and Limited Visibility Sensors. Lecture Notes in Computer Science, 2018, , 44-56.	1.0	0
22	System-Aware Compression. , 2018, , .		4
23	Compression for Multiple Reconstructions. , 2018, , .		3
24	Optimized Pre-Compensating Compression. IEEE Transactions on Image Processing, 2018, 27, 4798-4809.	6.0	8
25	Cooperative "Swarm Cleaning" of Stationary Domains. Studies in Computational Intelligence, 2018, , 15-49.	0.7	5
26	Optimal Dynamic Coverage Infrastructure for Large-Scale Fleets of Reconnaissance UAVs. Studies in Computational Intelligence, 2018, , 207-238.	0.7	9
27	Collaborative Patrolling Swarms in Stochastically Expanding Environments. Studies in Computational Intelligence, 2018, , 155-185.	0.7	0
28	The Search Complexity of Collaborative Swarms in Expanding $\mathbb{Z}^2$ Grid Regions. Studies in Computational Intelligence, 2018, , 129-153.	0.7	0
29	Swarm Search of Expanding Regions in Grids: Lower Bounds. Studies in Computational Intelligence, 2018, , 51-89.	0.7	0
30	Continuous time gathering of agents with limited visibility and bearing-only sensing. Swarm Intelligence, 2017, 11, 271-293.	1.3	5
31	On Gathering and Control of Unicycle A(gen)ts with Crude Sensing Capabilities. IEEE Intelligent Systems, 2017, 32, 40-46.	4.0	3
32	A model for automatically tracing object boundaries. , 2017, , .		3
33	Depth perception in autostereograms: 1/f noise is best. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2016, 33, 149.	0.8	1
34	Image restoration via successive compression. , 2016, , .		3
35	Real-Time Depth Refinement for Specular Objects. , 2016, , .		13
36	Reducing artifacts of intra-frame video coding via sequential denoising. , 2016, , .		1

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37	Postprocessing of Compressed Images via Sequential Denoising. IEEE Transactions on Image Processing, 2016, 25, 3044-3058.	6.0	55
38	Best bases for signal spaces. Comptes Rendus Mathematique, 2016, 354, 1155-1167.	0.1	8
39	On optimal disc covers and a new characterization of the Steiner center. Computational Geometry: Theory and Applications, 2016, 52, 1-8.	0.3	0
40	On Stochastic Broadcast Control of Swarms. Lecture Notes in Computer Science, 2016, , 257-264.	1.0	4
41	Continuous Time Gathering of Agents with Limited Visibility and Bearing-only Sensing. Lecture Notes in Computer Science, 2016, , 89-100.	1.0	3
42	RGBD-fusion: Real-time high precision depth recovery. , 2015, , .		41
43	On the Gamma-convergence of some polygonal curvature functionals. Applicable Analysis, 2015, 94, 957-979.	0.6	5
44	Motion-Compensated Coding and Frame-Rate Up-Conversion: Models and Analysis. IEEE Transactions on Image Processing, 2015, 24, 1-1.	6.0	28
45	Sparsity Based Methods for Overparameterized Variational Problems. SIAM Journal on Imaging Sciences, 2015, 8, 2133-2159.	1.3	23
46	Close-Range Photometric Stereo with Point Light Sources. , 2014, , .		12
47	A Direct Differential Approach to Photometric Stereo with Perspective Viewing. SIAM Journal on Imaging Sciences, 2014, 7, 579-612.	1.3	22
48	Robot Cloud gradient climbing with point measurements. Theoretical Computer Science, 2014, 547, 90-103.	0.5	3
49	Near Field Photometric Stereo with Point Light Sources. SIAM Journal on Imaging Sciences, 2014, 7, 2732-2770.	1.3	65
50	Fast Regularization of Matrix-Valued Images. Lecture Notes in Computer Science, 2014, , 19-43.	1.0	4
51	Augmented-Lagrangian regularization of matrix-valued maps. Methods and Applications of Analysis, 2014, 21, 105-122.	0.1	13
52	The Social Amplifier Reaction of Human Communities to Emergencies. Journal of Statistical Physics, 2013, 152, 399-418.	0.5	22
53	Graph Isomorphisms and Automorphisms via Spectral Signatures. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2013, 35, 1985-1993.	9.7	9
54	On Globally Optimal Local Modeling: From Moving Least Squares to Over-parametrization. Mathematics and Visualization, 2013, , 379-405.	0.4	1

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55	Detecting Anomalous Behaviors Using Structural Properties of Social Networks. Lecture Notes in Computer Science, 2013, , 433-440.	1.0	9
56	Perspective Photometric Stereo with Shadows. Lecture Notes in Computer Science, 2013, , 258-269.	1.0	3
57	Two-robot source seeking with point measurements. Theoretical Computer Science, 2012, 457, 76-85.	0.5	13
58	A "thermodynamic" approach to multi-robot cooperative localization. Theoretical Computer Science, 2012, 457, 59-75.	0.5	5
59	Crazy-Cuts: From Theory to App. Mathematical Intelligencer, 2012, 34, 50-55.	0.1	1
60	Simple and Robust Binary Self-Location Patterns. IEEE Transactions on Information Theory, 2012, 58, 4884-4889.	1.5	19
61	On Cyclic and Nearly Cyclic Multiagent Interactions in the Plane. , 2012, , 513-539.		5
62	Over-Parameterized Optical Flow Using a Stereoscopic Constraint. Lecture Notes in Computer Science, 2012, , 761-772.	1.0	7
63	Fast Regularization of Matrix-Valued Images. Lecture Notes in Computer Science, 2012, , 173-186.	1.0	6
64	Digital Geometry in Image-Based Metrology. Lecture Notes in Computational Vision and Biomechanics, 2012, , 3-26.	0.5	2
65	A "Thermodynamic" Approach to Multi-robot Cooperative Localization with Noisy Sensors. Lecture Notes in Computer Science, 2012, , 196-203.	1.0	1
66	Static and expanding grid coverage with ant robots: Complexity results. Theoretical Computer Science, 2011, 412, 4661-4674.	0.5	29
67	Orientation-Matching Minimization for Image Denoising and Inpainting. International Journal of Computer Vision, 2011, 92, 308-324.	10.9	82
68	Uniform multi-agent deployment on a ring. Theoretical Computer Science, 2011, 412, 783-795.	0.5	56
69	Multi-agent Cooperative Cleaning of Expanding Domains. International Journal of Robotics Research, 2011, 30, 1037-1071.	5.8	29
70	Vesicles and Amoebae: On Globally Constrained Shape Deformation. Journal of Mathematical Imaging and Vision, 2010, 37, 112-131.	0.8	2
71	On Variational Curve Smoothing and Reconstruction. Journal of Mathematical Imaging and Vision, 2010, 37, 183-203.	0.8	4
72	Dictionaries for Sparse Representation Modeling. Proceedings of the IEEE, 2010, 98, 1045-1057.	16.4	1,018

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73	Stochastic Recurrent Dynamics of Complex Systems of Solitons. Physical Review Letters, 2010, 105, 083901.	2.9	2
74	Autonomous Multi-agent Cycle Based Patrolling. Lecture Notes in Computer Science, 2010, , 119-130.	1.0	20
75	The Complexity of Grid Coverage by Swarm Robotics. Lecture Notes in Computer Science, 2010, , 536-543.	1.0	10
76	Multi-agent Deployment on a Ring Graph. Lecture Notes in Computer Science, 2010, , 215-226.	1.0	1
77	Swarm ant robotics for a dynamic cleaning problem " upper bounds. , 2009, , .		3
78	Multi-a(ge)nt Graph Patrolling and Partitioning. , 2009, , .		25
79	Solitonets: complex networks of interacting fields. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2009, 465, 1093-1101.	1.0	5
80	Iterative algorithm for optimal fiducials under weak perspective projection. International Journal of Imaging Systems and Technology, 2009, 19, 27-36.	2.7	0
81	Partial Similarity of Objects, or How to Compare a Centaur to a Horse. International Journal of Computer Vision, 2009, 84, 163-183.	10.9	83
82	From Sparse Solutions of Systems of Equations to Sparse Modeling of Signals and Images. SIAM Review, 2009, 51, 34-81.	4.2	1,972
83	Swarm ant robotics for a dynamic cleaning problem - analytic lower bounds and impossibility results. , 2009, , .		0
84	Over-Parameterized Variational Optical Flow. International Journal of Computer Vision, 2008, 76, 205-216.	10.9	95
85	Analysis of Two-Dimensional Non-Rigid Shapes. International Journal of Computer Vision, 2008, 78, 67-88.	10.9	89
86	All triangulations are reachable via sequences of edge-flips: an elementary proof. Computer Aided Geometric Design, 2008, 25, 157-161.	0.5	7
87	On isoperimetrically optimal polyforms. Theoretical Computer Science, 2008, 406, 146-159.	0.5	14
88	On the Uniqueness of Nonnegative Sparse Solutions to Underdetermined Systems of Equations. IEEE Transactions on Information Theory, 2008, 54, 4813-4820.	1.5	210
89	Isoperimetrically Pareto-optimal shapes on the hexagonal grid. , 2008, , .		0
90	Vesicles and amoebae: Globally constrained shape evolutions. , 2008, , .		1

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91	Robust and Efficient Covering of Unknown Continuous Domains with Simple, Ant-Like A(gen)ts. International Journal of Robotics Research, 2008, 27, 815-831.	5.8	8
92	Cooperative Cleaners: A Study in Ant Robotics. International Journal of Robotics Research, 2008, 27, 127-151.	5.8	88
93	On the uniqueness of non-negative sparse &#x0026; redundant representations. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	13
94	Sparse non-negative solution of a linear system of equations is unique. , 2008, , .		20
95	Efficient cooperative search of smart targets using UAV Swarms. Robotica, 2008, 26, 551-557.	1.3	67
96	Gathering Multiple Robotic Agents with Crude Distance Sensing Capabilities. Lecture Notes in Computer Science, 2008, , 72-83.	1.0	16
97	On Over-Parameterized Model Based TV-Denoising. , 2007, , .		5
98	A Linear-Time Constant-Space Algorithm for the Boundary Fill Problem. Computer Journal, 2007, 50, 473-477.	1.5	2
99	Paretian Similarity for Partial Comparison of Non-rigid Objects. , 2007, , 264-275.		1
100	Swarm Intelligence â€™ Searchers, Cleaners and Hunters. , 2006, , 93-132.		12
101	On the uniqueness of overcomplete dictionaries, and a practical way to retrieve them. Linear Algebra and Its Applications, 2006, 416, 48-67.	0.4	198
102	Multi-agent Physical A* with Large Pheromones. Autonomous Agents and Multi-Agent Systems, 2006, 12, 3-34.	1.3	12
103	Efficient computation of adaptive threshold surfaces for image binarization. Pattern Recognition, 2006, 39, 89-101.	5.1	57
104	Model-based shape from shading for microelectronics applications. International Journal of Imaging Systems and Technology, 2006, 16, 65-76.	2.7	2
105	Covering a Continuous Domain by Distributed, Limited Robots. Lecture Notes in Computer Science, 2006, , 144-155.	1.0	3
106	On Minimal Perimeter Polyminoies. Lecture Notes in Computer Science, 2006, , 17-28.	1.0	11
107	Head Movements for Depth Perception: Praying Mantis versus Pigeon. Autonomous Robots, 2005, 18, 21-42.	3.2	13
108	Low discrepancy holographic image sampling. International Journal of Imaging Systems and Technology, 2005, 15, 155-167.	2.7	1

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109	Virtual marionettes: a system and paradigm for real-time 3D animation. <i>Visual Computer</i> , 2005, 21, 488-501.	2.5	7
110	On Similarity-Invariant Fairness Measures. <i>Lecture Notes in Computer Science</i> , 2005, , 456-467.	1.0	7
111	K-SVD and its non-negative variant for dictionary design. , 2005, , .		75
112	Gathering Multiple Robotic A(ge)nts with Limited Sensing Capabilities. <i>Lecture Notes in Computer Science</i> , 2004, , 142-153.	1.0	31
113	Causal Camera Motion Estimation by Condensation and Robust Statistics Distance Measures. <i>Lecture Notes in Computer Science</i> , 2004, , 119-131.	1.0	4
114	Large Pheromones: A Case Study with Multi-agent Physical A*. <i>Lecture Notes in Computer Science</i> , 2004, , 366-373.	1.0	3
115	Regularized Laplacian Zero Crossings as Optimal Edge Integrators. <i>International Journal of Computer Vision</i> , 2003, 53, 225-243.	10.9	193
116	A Distributed Ant Algorithm for protect Efficiently Patrolling a Network. <i>Algorithmica</i> , 2003, 37, 165-186.	1.0	97
117	Down-scaling for better transform compression. <i>IEEE Transactions on Image Processing</i> , 2003, 12, 1132-1144.	6.0	138
118	A generalized uncertainty principle and sparse representation in pairs of bases. <i>IEEE Transactions on Information Theory</i> , 2002, 48, 2558-2567.	1.5	486
119	Image Flows and One-€Liner Graphical Image Representation. <i>Annals of the New York Academy of Sciences</i> , 2002, 972, 10-18.	1.8	2
120	Digital Geometry for Image-Based Metrology. <i>Lecture Notes in Computer Science</i> , 2002, , 145-154.	1.0	0
121	Variational approach to moirÃ© pattern synthesis. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2001, 18, 1371.	0.8	24
122	Discrete elastica. <i>Applicable Analysis</i> , 2001, 78, 453-485.	0.6	18
123	Epi-convergence of discrete elastica. <i>Applicable Analysis</i> , 2001, 79, 137-171.	0.6	30
124	Trifocal tensors for weak perspective and paraperspective projections. <i>Pattern Recognition</i> , 2001, 34, 395-404.	5.1	0
125	From Ants to A(ge)nts: A Special Issue on Ant-Robotics. <i>Annals of Mathematics and Artificial Intelligence</i> , 2001, 31, 1-5.	0.9	34
126	Vertex-Ant-Walk â€™ A robust method for efficient exploration of faulty graphs. <i>Annals of Mathematics and Artificial Intelligence</i> , 2001, 31, 99-112.	0.9	16



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127	Diffusions and Confusions in Signal and Image Processing. Journal of Mathematical Imaging and Vision, 2001, 14, 195-209.	0.8	81
128	Invariant Recognition and Processing of Planar Shapes. Lecture Notes in Computer Science, 2001, , 3-10.	1.0	0
129	Heteroscedastic Hough Transform (HtHT): An Efficient Method for Robust Line Fitting in the $\hat{\epsilon}$ -Errors in the Variables <sup>TM</sup> Problem. Computer Vision and Image Understanding, 2000, 78, 69-83.	3.0	25
130	On holographic transform compression of images. International Journal of Imaging Systems and Technology, 2000, 11, 292-314.	2.7	8
131	On the use of shadows in stance recovery. International Journal of Imaging Systems and Technology, 2000, 11, 315-330.	2.7	4
132	ANTS: Agents on Networks, Trees, and Subgraphs. Future Generation Computer Systems, 2000, 16, 915-926.	4.9	30
133	Title is missing!. International Journal of Computer Vision, 2000, 39, 131-139.	10.9	14
134	Optimum Fiducials Under Weak Perspective Projection. International Journal of Computer Vision, 1999, 35, 223-244.	10.9	29
135	Distributed covering by ant-robots using evaporating traces. IEEE Transactions on Automation Science and Engineering, 1999, 15, 918-933.	2.4	211
136	Efficiently searching a graph by a smell-oriented vertex process. Annals of Mathematics and Artificial Intelligence, 1998, 24, 211-223.	0.9	72
137	Pruning Medial Axes. Computer Vision and Image Understanding, 1998, 69, 156-169.	3.0	176
138	Design of shapes for precise image registration. IEEE Transactions on Information Theory, 1998, 44, 3156-3162.	1.5	21
139	Planar Shape Enhancement and Exaggeration. Graphical Models, 1998, 60, 112-124.	1.4	14
140	A holographic transform domain image watermarking method. Circuits, Systems, and Signal Processing, 1998, 17, 361-389.	1.2	12
141	Holographic representations of images. IEEE Transactions on Image Processing, 1998, 7, 1583-1597.	6.0	36
142	Multivalued distance maps for motion planning on surfaces with moving obstacles. IEEE Transactions on Automation Science and Engineering, 1998, 14, 427-436.	2.4	47
143	Robotic Exploration, Brownian Motion and Electrical Resistance. Lecture Notes in Computer Science, 1998, , 116-130.	1.0	12
144	Analyzing and Synthesizing Images by Evolving Curves with the Osher-Sethian Method. International Journal of Computer Vision, 1997, 24, 37-55.	10.9	20

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145	On Projective Invariant Smoothing and Evolutions of Planar Curves and Polygons. , 1997, 7, 225-240.		16
146	A Subdivision Scheme for Continuous-Scale B-Splines and Affine-Invariant Progressive Smoothing. Journal of Mathematical Imaging and Vision, 1997, 7, 23-40.	0.8	6
147	Row Straightening via local interactions. Circuits, Systems, and Signal Processing, 1997, 16, 287-305.	1.2	34
148	Cooperative Cleaners: A Study in Ant Robotics. , 1997, , 289-308.		20
149	The Curve Axis. Computer Vision and Image Understanding, 1996, 63, 367-379.	3.0	15
150	Global Shape from Shading. Computer Vision and Image Understanding, 1996, 64, 188-189.	3.0	28
151	How to Track a Flying Saucer. Journal of Visual Communication and Image Representation, 1996, 7, 196-204.	1.7	4
152	Sub-pixel distance maps and weighted distance transforms. Journal of Mathematical Imaging and Vision, 1996, 6, 223-233.	0.8	97
153	Bit Allocation in Piecewise-Planar Representation of Images. Journal of Visual Communication and Image Representation, 1995, 6, 52-58.	1.7	0
154	On differential invariants of planar curves and recognizing partially occluded planar shapes. Annals of Mathematics and Artificial Intelligence, 1995, 13, 227-250.	0.9	20
155	Shape from shading: Level set propagation and viscosity solutions. International Journal of Computer Vision, 1995, 16, 107-133.	10.9	63
156	The ubiquitous ellipse. Acta Applicandae Mathematicae, 1995, 38, 149-161.	0.5	5
157	Tracking Level Sets by Level Sets: A Method for Solving the Shape from Shading Problem. Computer Vision and Image Understanding, 1995, 62, 47-58.	3.0	134
158	Global Shape from Shading. Computer Vision and Image Understanding, 1995, 62, 360-369.	3.0	48
159	Skeletonization via Distance Maps and Level Sets. Computer Vision and Image Understanding, 1995, 62, 382-391.	3.0	142
160	EVOLUTIONS OF PLANAR POLYGONS. International Journal of Pattern Recognition and Artificial Intelligence, 1995, 09, 991-1014.	0.7	50
161	Shape, Structure and Pattern Recognition. , 1995, , .		8
162	Digi D "Ä¼rer " a digital engraving system. Visual Computer, 1994, 10, 277-292.	2.5	30

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163	Implementing continuous-scale morphology via curve evolution. <i>Pattern Recognition</i> , 1993, 26, 1363-1372.	5.1	129
164	Why the ant trails look so straight and nice. <i>Mathematical Intelligencer</i> , 1993, 15, 59-62.	0.1	68
165	Similarity-invariant signatures for partially occluded planar shapes. <i>International Journal of Computer Vision</i> , 1992, 7, 271-285.	10.9	51
166	Parallel strategies for geometric probing. <i>Journal of Algorithms</i> , 1992, 13, 320-349.	0.9	7
167	On the Reconstruction of Layered Media from Reflection Data. <i>SIAM Journal on Matrix Analysis and Applications</i> , 1991, 12, 24-40.	0.7	3
168	Integrability disambiguates surface recovery in two-image photometric stereo. <i>International Journal of Computer Vision</i> , 1990, 5, 105-113.	10.9	91
169	On minimal energy trajectories. <i>Computer Vision, Graphics, and Image Processing</i> , 1990, 49, 283-296.	1.1	42
170	On shape from shading. <i>Computer Vision, Graphics, and Image Processing</i> , 1988, 44, 139-154.	1.1	97
171	On discrete Schrödinger equations and their two-component wave equation equivalents. <i>Journal of Mathematical Physics</i> , 1987, 28, 2914-2924.	0.5	10
172	Some matrix factorization identities for discrete inverse scattering. <i>Linear Algebra and Its Applications</i> , 1986, 74, 157-172.	0.4	12
173	Differential Methods in Inverse Scattering. <i>SIAM Journal on Applied Mathematics</i> , 1985, 45, 312-335.	0.8	123
174	Image orientation detection with integrated human perception cues (or which way is up). , 0, , .		3