

# Elon D Rimon

## List of Publications by Year in descending order

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70  
papers

2,125  
citations

430874

18  
h-index

265206

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g-index

77  
all docs

77  
docs citations

77  
times ranked

1118  
citing authors

#	ARTICLE	IF	CITATIONS
1	Time Optimal Trajectories for a Car-Like Mobile Robot. IEEE Transactions on Robotics, 2022, 38, 421-432.	10.3	5
2	Mobile Robot Navigation Functions Tuned by Sensor Readings in Partially Known Environments. IEEE Robotics and Automation Letters, 2022, 7, 3803-3810.	5.1	9
3	Contact Space Computation of Two-Finger Gravity Based Caging Grasps Security Measure. IEEE Robotics and Automation Letters, 2021, 6, 572-579.	5.1	5
4	Geometric Characterization of the Planar Multi-Finger Equilibrium Grasps. IEEE Robotics and Automation Letters, 2021, 6, 7933-7940.	5.1	0
5	Geometric Characterization of Two-Finger Basket Grasps of 2-D Objects: Contact Space Formulation. , 2020, , .		4
6	Jamming-Free Immobilizing Grasps Using Dual-Friction Robotic Fingertips. IEEE Robotics and Automation Letters, 2020, 5, 2889-2896.	5.1	10
7	A Variable-Structure Robot Hand That Uses the Environment to Achieve General Purpose Grasps. IEEE Robotics and Automation Letters, 2020, 5, 4804-4811.	5.1	6
8	Time Optimal Trajectories for a Mobile Robot Under Nonsliding and Radius-of-Turn Constraints. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2020, 142, .	1.6	3
9	First-Order Immobilizing Grasps. , 2019, , 147-166.		0
10	Multi-Finger Caging Grasps. , 2019, , 232-255.		0
11	Hand Mechanism Compliance. , 2019, , 454-477.		0
12	Toward Grasping Against the Environment: Locking Polygonal Objects Against a Wall Using Two-Finger Robot Hands. IEEE Robotics and Automation Letters, 2019, 4, 105-112.	5.1	2
13	Time Optimal Trajectories for a Mobile Robot Under Explicit Acceleration Constraints. IEEE Transactions on Aerospace and Electronic Systems, 2018, 54, 2220-2232.	4.7	18
14	Equilateral Three-Finger Caging of Polygonal Objects Using Contact Space Search. IEEE Transactions on Automation Science and Engineering, 2018, 15, 919-931.	5.2	9
15	Caging Polygonal Objects Using Formationally Similar Three-Finger Hands. IEEE Robotics and Automation Letters, 2018, 3, 3271-3278.	5.1	8
16	Object surface exploration using low-cost rolling robotic fingertips. , 2018, , .		2
17	Investigation of the Coin Snapping Phenomenon in Linearly Compliant Robot Grasps. IEEE Transactions on Robotics, 2018, 34, 794-804.	10.3	3
18	The speed graph method: pseudo time optimal navigation among obstacles subject to uniform braking safety constraints. Autonomous Robots, 2017, 41, 385-400.	4.8	0

#	ARTICLE	IF	CITATIONS
19	Caging Polygonal Objects Using Equilateral Three-Finger Hands. IEEE Robotics and Automation Letters, 2017, 2, 1672-1679.	5.1	7
20	Characterization of frictional multi-legged equilibrium postures on uneven terrains. International Journal of Robotics Research, 2017, 36, 105-128.	8.5	7
21	Online Robot Navigation Using Continuously Updated Artificial Temperature Gradients. IEEE Robotics and Automation Letters, 2017, 2, 1280-1287.	5.1	14
22	Wrench resistant multi-finger hand mechanisms. , 2016, , .		2
23	Online Coverage of Planar Environments by a Battery Powered Autonomous Mobile Robot. IEEE Transactions on Automation Science and Engineering, 2016, 13, 425-436.	5.2	42
24	Robust three-finger three-parameter caging of convex polygons. , 2015, , .		6
25	Two-Finger Caging of Polygonal Objects Using Contact Space Search. IEEE Transactions on Robotics, 2015, 31, 1164-1179.	10.3	25
26	On-line Coverage of Planar Environments by a Battery Powered Autonomous Mobile Robot. Springer Tracts in Advanced Robotics, 2015, , 571-589.	0.4	5
27	Online Coverage by a Tethered Autonomous Mobile Robot in Planar Unknown Environments. IEEE Transactions on Robotics, 2014, 30, 966-974.	10.3	30
28	Two-finger caging of 3D polyhedra using contact space search. , 2014, , .		4
29	The speed graph method: Time optimal navigation among obstacles subject to safe braking constraint. , 2014, , .		4
30	VC-method: high-speed navigation of a uniformly braking mobile robot using position-velocity configuration space. Autonomous Robots, 2013, 34, 295-309.	4.8	3
31	On the mechanics of natural compliance in frictional contacts and its effect on grasp stiffness and stability. International Journal of Robotics Research, 2013, 32, 425-445.	8.5	6
32	Local Force Closure. , 2012, , .		7
33	Two-fingered caging of polygons via contact-space graph search. , 2012, , .		12
34	High-speed navigation of a uniformly braking mobile robot using position-velocity configuration space. , 2012, , .		0
35	Immobilizing 2-D Serial Chains in Form-Closure Grasps. IEEE Transactions on Robotics, 2012, 28, 32-43.	10.3	29
36	Investigation of Painlevé's paradox and dynamic jamming during mechanism sliding motion. Nonlinear Dynamics, 2012, 67, 1647-1668.	5.2	29

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37	Classifying the Heterogeneous Multi-Robot online search problem into quadratic time competitive complexity class. , 2011, , .		0
38	On the Passive Force Closure Set of Planar Grasps and Fixtures. International Journal of Robotics Research, 2010, 29, 1435-1454.	8.5	13
39	Analytic Characterization of a Class of Three-contact Frictional Equilibrium Postures in Three-dimensional Gravitational Environments. International Journal of Robotics Research, 2010, 29, 3-22.	8.5	9
40	Immobilizing 2D serial chains in form closure grasps. , 2010, , .		0
41	COMPETITIVE COMPLEXITY OF MOBILE ROBOT ON-LINE MOTION PLANNING PROBLEMS. International Journal of Computational Geometry and Applications, 2010, 20, 255-283.	0.5	4
42	Safe Navigation in Dynamic Environments. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2010, , 225-232.	0.6	2
43	Efficient and safe on-line motion planning in dynamic environments. , 2009, , .		29
44	On the hybrid dynamics of planar mechanisms supported by frictional contacts. II: stability of two-contact rigid body postures. , 2008, , .		11
45	C-space characterization of contact preserving paths with application to tactile-sensor based mobile robot navigation. , 2008, , .		1
46	On the hybrid dynamics of planar mechanisms supported by frictional contacts. I: necessary conditions for stability. , 2008, , .		8
47	CBUG: A Quadratically Competitive Mobile Robot Navigation Algorithm. IEEE Transactions on Robotics, 2008, 24, 1451-1457.	10.3	20
48	Competitive Disconnection Detection in On-Line Mobile Robot Navigation. Springer Tracts in Advanced Robotics, 2008, , 253-267.	0.4	2
49	IMMOBILIZING HINGED POLYGONS. International Journal of Computational Geometry and Applications, 2007, 17, 45-69.	0.5	17
50	Geometric Characterization and Experimental Validation of Frictional 3-Contact Equilibrium Stances in Three-Dimensions. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	1
51	Experimental Verification and Graphical Characterization of Dynamic Jamming in Frictional Rigid-Body Mechanics. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	3
52	Computation and Graphical Characterization of Robust Multiple-Contact Postures in Two-Dimensional Gravitational Environments. International Journal of Robotics Research, 2006, 25, 1071-1086.	8.5	14
53	Online Scan Coverage of Grid Environments by a Mobile Robot. Springer Tracts in Advanced Robotics, 2004, , 417-433.	0.4	0
54	Competitive on-line coverage of grid environments by a mobile robot. Computational Geometry: Theory and Applications, 2003, 24, 197-224.	0.5	113

#	ARTICLE	IF	CITATIONS
55	Isometric visualization of configuration spaces of two-degrees-of-freedom mechanisms. Mechanism and Machine Theory, 2001, 36, 523-545.	4.5	10
56	Spanning-tree based coverage of continuous areas by a mobile robot. Annals of Mathematics and Artificial Intelligence, 2001, 31, 77-98.	1.3	245
57	Design of a Quadruped Robot for Motion with Quasistatic Force Constraints. Autonomous Robots, 2001, 10, 279-296.	4.8	10
58	A stiffness-based quality measure for compliant grasps and fixtures. IEEE Transactions on Automation Science and Engineering, 2000, 16, 675-688.	2.3	58
59	Design of a Spider Robot Based on Second-Order Immobilization Theory. , 2000, , 17-25.		4
60	Mobility of bodies in contact. I. A 2nd-order mobility index for multiple-finger grasps. IEEE Transactions on Automation Science and Engineering, 1998, 14, 696-708.	2.3	161
61	Mobility of bodies in contact. II. How forces are generated by curvature effects. IEEE Transactions on Automation Science and Engineering, 1998, 14, 709-717.	2.3	62
62	TangentBug: A Range-Sensor-Based Navigation Algorithm. International Journal of Robotics Research, 1998, 17, 934-953.	8.5	146
63	Local and Global Planning in Sensor Based Navigation of Mobile Robots. , 1998, , 112-123.		4
64	Obstacle Collision Detection Using Best Ellipsoid Fit. , 1997, 18, 105-126.		78
65	Construction of C-space roadmaps from local sensory data. What should the sensors look for?. Algorithmica, 1997, 17, 357-379.	1.3	23
66	A configuration space analysis of bodies in contactâ€”I. 1st order mobility. Mechanism and Machine Theory, 1995, 30, 897-912.	4.5	53
67	A configuration space analysis of bodies in contactâ€”II. 2ND order mobility. Mechanism and Machine Theory, 1995, 30, 913-928.	4.5	26
68	The construction of analytic diffeomorphisms for exact robot navigation on star worlds. Transactions of the American Mathematical Society, 1991, 327, 71-116.	0.9	79
69	Robot navigation functions on manifolds with boundary. Advances in Applied Mathematics, 1990, 11, 412-442.	0.7	450
70	Online Coverage by a Tethered Autonomous Mobile Robot in Planar Unknown Environments. , 0, , .		5