Tomas Lozano-Perez

List of Publications by Year
in descending order

117 papers	**14,017** citations	172207 **29** h-index	205818 **48** g-index
121 all docs	**121** docs citations	**121** times ranked	**5493** citing authors

#	Article	IF	Citations
1	Solving the multiple instance problem with axis-parallel rectangles. Artificial Intelligence, 1997, 89, 31-71.	3.9	2,043
2	An algorithm for planning collision-free paths among polyhedral obstacles. Communications of the ACM, 1979, 22, 560-570.	3.3	1,881
3	Spatial Planning: A Configuration Space Approach. IEEE Transactions on Computers, 1983, C-32, 108-120.	2.4	1,744
4	Automatic Synthesis of Fine-Motion Strategies for Robots. International Journal of Robotics Research, 1984, 3, 3-24.	5.8	734
5	Automatic Planning of Manipulator Transfer Movements. IEEE Transactions on Systems, Man, and Cybernetics, 1981, 11, 681-698.	0.9	549
6	A simple motion-planning algorithm for general robot manipulators. IEEE Journal of Robotics and Automation, 1987, 3, 224-238.	2.2	515
7	Model-Based Recognition and Localization from Sparse Range or Tactile Data. International Journal of Robotics Research, 1984, 3, 3-35.	5.8	491
8	On multiple moving objects. Algorithmica, 1987, 2, 477-521.	1.0	459
9	Localizing Overlapping Parts by Searching the Interpretation Tree. IEEE Transactions on Pattern Analysis and Machine Intelligence, 1987, PAMI-9, 469-482.	9.7	387
10	A subdivision algorithm in configuration space for findpath with rotation. IEEE Transactions on Systems, Man, and Cybernetics, 1985, SMC-15, 224-233.	0.9	349
11	Hierarchical task and motion planning in the now. , 2011, , .		271
12	De novo determination of peptide structure with solid-state magic-angle spinning NMR spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 10260-10265.	3.3	253
13	An automatic registration method for frameless stereotaxy, image guided surgery, and enhanced reality visualization. IEEE Transactions on Medical Imaging, 1996, 15, 129-140.	5.4	247
14	Robot programming. Proceedings of the IEEE, 1983, 71, 821-841.	16.4	208
15	Integrated task and motion planning in belief space. International Journal of Robotics Research, 2013, 32, 1194-1227.	5.8	200
16	A Geometric Modeling System for Automated Mechanical Assembly. IBM Journal of Research and Development, 1980, 24, 64-74.	3.2	181
17	Belief space planning assuming maximum likelihood observations. , 0, , .		160
18	Deadlock-free and collision-free coordination of two robot manipulators. , 1989, , .		142

#	Article	IF	Citations
19	Tactile Recognition and Localization Using Object Models: The Case of Polyhedra on a Plane. IEEE Transactions on Pattern Analysis and Machine Intelligence, 1984, PAMI-6, 257-266.	9.7	134
20	Attribute based file organization in a paged memory environment. Communications of the ACM, 1974, 17, 63-69.	3.3	133
21	LQR-RRT*: Optimal sampling-based motion planning with automatically derived extension heuristics. , 2012, , .		131
22	Integrated Task and Motion Planning. Annual Review of Control, Robotics, and Autonomous Systems, 2021, 4, 265-293.	7.5	131
23	Task-level planning of pick-and-place robot motions. Computer, 1989, 22, 21-29.	1.2	120
24	On multiple moving objects. , 0, , .		117
25	From Skills to Symbols: Learning Symbolic Representations for Abstract High-Level Planning. Journal of Artificial Intelligence Research, 0, 61, 215-289.	7.0	115
26	Image database retrieval with multiple-instance learning techniques. , 0, , .		97
27	Handey: A robot system that recognizes, plans, and manipulates. , 0, , .		94
28	Regrasping. , 0, , .		94
29	A constraint-based method for solving sequential manipulation planning problems. , 2014, , .		94
30	Compass: A shape-based machine learning tool for drug design. Journal of Computer-Aided Molecular Design, 1994, 8, 635-652.	1.3	92
31	Collision Avoidance for Unmanned Aircraft using Markov Decision Processes*. , 2010, , .		85
32	Grasping POMDPs. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	80
33	FFRob: Leveraging symbolic planning for efficient task and motion planning. International Journal of Robotics Research, 2018, 37, 104-136.	5.8	77
34	An automatic registration method for frameless stereotaxy, image guided surgery, and enhanced reality visualization. , 1994, , .		66
35	Imitation Learning of Whole-Body Grasps. , 2006, , .		56
36	FFRob: An Efficient Heuristic for Task and Motion Planning. Springer Tracts in Advanced Robotics, 2015, , 179-195.	0.3	56

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37	Assembly strategies for chamferless parts. , 0, , .		52
38	Parallel robot motion planning. , 0, , .		51
39	Two-Handed Assembly Sequencing. International Journal of Robotics Research, 1995, 14, 335-350.	5.8	51
40	Sampling-based methods for factored task and motion planning. International Journal of Robotics Research, 2018, 37, 1796-1825.	5.8	47
41	A framework for learning query concepts in image classification. , 0, , .		45
42	Robust grasping under object pose uncertainty. Autonomous Robots, 2011, 31, 253-268.	3.2	45
43	A hierarchical approach to manipulation with diverse actions. , 2013, , .		42
44	Task-Driven Tactile Exploration. , 0, , .		40
45	Online Replanning in Belief Space for Partially Observable Task and Motion Problems. , 2020, , .		38
46	Spatial Planning: A Configuration Space Approach. , 1990, , 259-271.		37
47	Grasp stability and feasibility for an arm with an articulated hand. , 0, , .		35
48	Active Model Learning and Diverse Action Sampling for Task and Motion Planning. , 2018, , .		33
49	Learning compositional models of robot skills for task and motion planning. International Journal of Robotics Research, 2021, 40, 866-894.	5.8	33
50	Backward-forward search for manipulation planning. , 2015, , .		31
51	Learning to guide task and motion planning using score-space representation. International Journal of Robotics Research, 2019, 38, 793-812.	5.8	31
52	Recognition and localization of overlapping parts from sparse data in two and three dimensions. , 0, , .		30
53	Extending the constraint propagation of intervals. Artificial Intelligence for Engineering Design, Analysis and Manufacturing: AIEDAM, 1990, 4, 47-54.	0.7	30
54	Provably safe robot navigation with obstacle uncertainty. International Journal of Robotics Research, 2018, 37, 1760-1774.	5.8	30

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55	Manipulation-based active search for occluded objects. , 2013, , .		29
56	Differentiable Algorithm Networks for Composable Robot Learning. , 0, , .		29
57	Model-based recognition and localization from tactile data. , 0, , .		28
58	Virtual Training for Multi-View Object Class Recognition. , 2007, , .		27
59	Planning two-fingered grasps for pick-and-place operations on polyhedra. , 0, , .		26
60	Unifying perception, estimation and action for mobile manipulation via belief space planning. , 2012, , .		25
61	Rotamer optimization for protein design through MAP estimation and problem‐size reduction. Journal of Computational Chemistry, 2009, 30, 1923-1945.	1.5	23
62	Data association for semantic world modeling from partial views. International Journal of Robotics Research, 2015, 34, 1064-1082.	5.8	23
63	Finding cylinders in range data. , 0, , .		22
64	Manipulation with Multiple Action Types. Springer Tracts in Advanced Robotics, 2013, , 531-545.	0.3	22
65	An approach to automatic robot programming. , 1986, , .		22
66	Learning composable models of parameterized skills. , 2017, , .		21
67	Force-and-Motion Constrained Planning for Tool Use. , 2019, , .		21
68	Automatic registration for multiple sclerosis change detection. , 0, , .		20
69	Assembly sequencing for arbitrary motions. , 0, , .		19
70	Interactive Bayesian identification of kinematic mechanisms. , 2014, , .		19
71	Sample-Based Methods for Factored Task and Motion Planning. , 0, , .		19
72	AmbiPack: A systematic algorithm for packing of macromolecular structures with ambiguous distance constraints. , 1998, 32, 26-42.		18

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73	Recognition and Localization of Overlapping Parts From Sparse Data. Kluwer International Series in Engineering and Computer Science, 1987, , 451-510.	0.2	16
74	Learning to guide task and motion planning using score-space representation. , 2017, , .		15
75	Foresight and reconsideration in hierarchical planning and execution. , 2013, , .		14
76	Learning Symbolic Operators for Task and Motion Planning. , 2021, , .		14
77	Non-Gaussian belief space planning: Correctness and complexity. , 2012, , .		13
78	Monte Carlo Tree Search in Continuous Spaces Using Voronoi Optimistic Optimization with Regret Bounds. Proceedings of the AAAI Conference on Artificial Intelligence, 2020, 34, 9916-9924.	3.6	13
79	Efficient Planning in Non-Gaussian Belief Spaces and Its Application to Robot Grasping. Springer Tracts in Advanced Robotics, 2017, , 253-269.	0.3	12
80	Adversarial Actor-Critic Method for Task and Motion Planning Problems Using Planning Experience. Proceedings of the AAAI Conference on Artificial Intelligence, 2019, 33, 8017-8024.	3.6	12
81	Representation, learning, and planning algorithms for geometric task and motion planning. International Journal of Robotics Research, 2022, 41, 210-231.	5.8	12
82	<title>Image guidance techniques for neurosurgery</title>. , 1994, , .		11
83	Planning in partially-observable switching-mode continuous domains. Annals of Mathematics and Artificial Intelligence, 2010, 58, 185-216.	0.9	11
84	Omnipush: accurate, diverse, real-world dataset of pushing dynamics with RGB-D video. , 2019, , .		11
85	Object placement as inverse motion planning. , 2013, , .		9
86	Long-Horizon Manipulation of Unknown Objects via Task and Motion Planning with Estimated Affordances. , 2022, , .		9
87	Not seeing is also believing: Combining object and metric spatial information. , 2014, , .		8
88	Reliably Arranging Objects in Uncertain Domains. , 2018, , .		8
89	Parsing intensity profiles. Computer Graphics and Image Processing, 1977, 6, 43-60.	0.9	7
90	Implicit belief-space pre-images for hierarchical planning and execution. , 2016, , .		7

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91	Pre-image Backchaining in Belief Space for Mobile Manipulation. Springer Tracts in Advanced Robotics, 2017, , 383-400.	0.3	7
92	Learning Quickly to Plan Quickly Using Modular Meta-Learning. , 2019, , .		7
93	Collision-free state estimation. , 2012, , .		6
94	Hierarchical planning for multi-contact non-prehensile manipulation. , 2015, , .		6
95	An Approach to Automatic Robot Programming. , 1984, , 293-328.		6
96	Scalable and Probabilistically Complete Planning for Robotic Spatial Extrusion. , 0, , .		6
97	Learning When to Quit: Meta-Reasoning for Motion Planning. , 2021, , .		6
98	Focused model-learning and planning for non-Gaussian continuous state-action systems. , 2017, , .		5
99	An automatic tube inspection system that finds cylinders in range data. , 0, , .		4
100	Integrating Human-Provided Information into Belief State Representation Using Dynamic Factorization. , 2018, , .		4
101	Planning for Multi-stage Forceful Manipulation. , 2021, , .		4
102	Model-Based Recognition and Localization from Sparse Range Data. Machine Intelligence and Pattern Recognition, 1986, , 113-148.	0.2	4
103	Matching Interest Points Using Affine Invariant Concentric Circles. , 2006, , .		3
104	Optimization in the now: Dynamic peephole optimization for hierarchical planning. , 2013, , .		3
105	Shape-Based Transfer of Generic Skills. , 2021, , .		3
106	Compliance in robot manipulation. Artificial Intelligence, 1985, 25, 5-12.	3.9	2
107	Learning to generate novel views of objects for class recognition. Computer Vision and Image Understanding, 2009, 113, 1183-1197.	3.0	2
108	Generalizing Over Uncertain Dynamics for Online Trajectory Generation. Springer Proceedings in Advanced Robotics, 2018, , 39-55.	0.9	2

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109	Data Association for Semantic World Modeling from Partial Views. Springer Tracts in Advanced Robotics, 2016, , 431-448.	0.3	2
110	Class-specific grasping of 3D objects from a single 2D image. , 2010, , .		1
111	Visual Prediction of Priors for Articulated Object Interaction. , 2020, , .		1
112	Model-Based Recognition and Localization from Sparse Range or Tactile Data. , 1987, , 382-414.		1
113	Provably Safe Robot Navigation with Obstacle Uncertainty. , 0, , .		1
114	Robotics: A Long Range Plan to Maximize National Capabilities. Annual Review of Computer Science, 1990, 4, 467-479.	0.4	0
115	Special Issue on the Tenth International Workshop on Algorithmic Foundations of Robotics (WAFR). International Journal of Robotics Research, 2014, 33, 3-4.	5.8	0
116	Finding Frequent Entities in Continuous Data. , 2018, , .		0
117	Fully Persistent Spatial Data Structures for Efficient Queries in Path-Dependent Motion Planning Applications. , 2022, , .		0