

# Dirk Wollherr

## List of Publications by Year in descending order

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Version: 2024-02-01

156  
papers

3,036  
citations

361413

20  
h-index

330143

37  
g-index

158  
all docs

158  
docs citations

158  
times ranked

2607  
citing authors

#	ARTICLE	IF	CITATIONS
1	HUMAN-ROBOT COLLABORATION: A SURVEY. International Journal of Humanoid Robotics, 2008, 05, 47-66.	1.1	328
2	Comparison of surface normal estimation methods for range sensing applications. , 2009, , .		177
3	A Combined Model- and Learning-Based Framework for Interaction-Aware Maneuver Prediction. IEEE Transactions on Intelligent Transportation Systems, 2016, 17, 1538-1550.	8.0	127
4	A clustering method for efficient segmentation of 3D laser data. , 2008, , .		120
5	Real-time 3D hand gesture interaction with a robot for understanding directions from humans. , 2011, , .		101
6	The Autonomous City Explorer: Towards Natural Human-Robot Interaction in Urban Environments. International Journal of Social Robotics, 2009, 1, 127-140.	4.6	85
7	A Game-Theoretic Approach to Replanning-Aware Interactive Scene Prediction and Planning. IEEE Transactions on Vehicular Technology, 2016, 65, 3981-3992.	6.3	83
8	Safety assessment of robot trajectories for navigation in uncertain and dynamic environments. Autonomous Robots, 2012, 32, 285-302.	4.8	72
9	Interactive scene prediction for automotive applications. , 2013, , .		71
10	IBuLD: Incremental bag of Binary words for appearance based loop closure detection. , 2015, , .		64
11	A methodological variation for acceptance evaluation of Human-Robot Interaction in public places. , 2008, , .		60
12	Improving aspects of empathy and subjective performance for HRI through mirroring facial expressions. , 2011, , .		55
13	Grid-based mapping and tracking in dynamic environments using a uniform evidential environment representation. , 2014, , .		53
14	Realtime segmentation of range data using continuous nearest neighbors. , 2009, , .		52
15	Safety verification of autonomous vehicles for coordinated evasive maneuvers. , 2010, , .		51
16	Increasing Helpfulness towards a Robot by Emotional Adaption to the User. International Journal of Social Robotics, 2013, 5, 457-476.	4.6	46
17	Grid-Based Environment Estimation Using Evidential Mapping and Particle Tracking. IEEE Transactions on Intelligent Vehicles, 2018, 3, 384-396.	12.7	45
18	Understanding Human Avoidance Behavior: Interaction-Aware Decision Making Based on Game Theory. International Journal of Social Robotics, 2016, 8, 331-351.	4.6	43

#	ARTICLE	IF	CITATIONS
19	Probabilistic collision state checker for crowded environments. , 2010, , .		39
20	A prediction-based reactive driving strategy for highly automated driving function on freeways. , 2014, , .		39
21	Object tracking based on evidential dynamic occupancy grids in urban environments. , 2017, , .		39
22	The Autonomous City Explorer (ACE) project &#x2014; mobile robot navigation in highly populated urban environments. , 2009, , .		37
23	An emotional adaption approach to increase helpfulness towards a robot. , 2012, , .		37
24	Evidential Grid-Based Tracking and Mapping. IEEE Transactions on Intelligent Transportation Systems, 2016, , 1-14.	8.0	37
25	A review of spatial reasoning and interaction for real-world robotics. Advanced Robotics, 2017, 31, 222-242.	1.8	37
26	Modeling Laser Intensities For Simultaneous Localization and Mapping. IEEE Robotics and Automation Letters, 2016, 1, 692-699.	5.1	34
27	Stochastic Model Predictive Control With a Safety Guarantee for Automated Driving. IEEE Transactions on Intelligent Vehicles, 2023, 8, 22-36.	12.7	34
28	Probabilistic mapping of dynamic obstacles using Markov chains for replanning in dynamic environments. , 2008, , .		33
29	Human-Like Motion Planning Based on Game Theoretic Decision Making. International Journal of Social Robotics, 2019, 11, 151-170.	4.6	33
30	An Online Robot Collision Detection and Identification Scheme by Supervised Learning and Bayesian Decision Theory. IEEE Transactions on Automation Science and Engineering, 2021, 18, 1144-1156.	5.2	33
31	Dynamic manipulation: Nonprehensile ball catching. , 2010, , .		29
32	Robots asking for directions â€” The willingness of passers-by to support robots. , 2010, , .		28
33	Grid-Based Object Tracking With Nonlinear Dynamic State and Shape Estimation. IEEE Transactions on Intelligent Transportation Systems, 2020, 21, 2874-2893.	8.0	28
34	The autonomous city explorer project: aims and system overview. , 2007, , .		27
35	Dynamic contact force/torque observer: Sensor fusion for improved interaction control. International Journal of Robotics Research, 2013, 32, 446-457.	8.5	27
36	Efficient Evaluation of Collisions and Costs on Grid Maps for Autonomous Vehicle Motion Planning. IEEE Transactions on Intelligent Transportation Systems, 2014, 15, 2249-2260.	8.0	26

#	ARTICLE	IF	CITATIONS
37	Robots asking for directions. , 2010, , .		26
38	Integral Sliding-Mode Observer-Based Disturbance Estimation for Euler-Lagrangian Systems. IEEE Transactions on Control Systems Technology, 2020, 28, 2377-2389.	5.2	25
39	An Inverse Optimal Control Approach to Explain Human Arm Reaching Control Based on Multiple Internal Models. Scientific Reports, 2018, 8, 5583.	3.3	24
40	Safety assessment of trajectories for navigation in uncertain and dynamic environments. , 2011, , .		21
41	A game-theoretic approach for adaptive action selection in close proximity human-robot-collaboration. , 2017, , .		21
42	Combining Stochastic and Scenario Model Predictive Control to Handle Target Vehicle Uncertainty in an Autonomous Driving Highway Scenario. , 2018, , .		21
43	Proactively Approaching Pedestrians with an Autonomous Mobile Robot in Urban Environments. Springer Tracts in Advanced Robotics, 2013, , 199-214.	0.4	21
44	Determining states of inevitable collision using reachability analysis. , 2014, , .		20
45	Please take over! An analysis and strategy for a driver take over request during autonomous driving. , 2015, , .		19
46	Measuring the Effectiveness of Readability for Mobile Robot Locomotion. International Journal of Social Robotics, 2016, 8, 721-741.	4.6	19
47	Energy optimal control to approach traffic lights. , 2013, , .		16
48	RMAP: a rectangular cuboid approximation framework for 3D environment mapping. Autonomous Robots, 2014, 37, 261-277.	4.8	16
49	Path planning on grid maps with unknown goal poses. , 2013, , .		15
50	Can You Read My Face?. International Journal of Social Robotics, 2015, 7, 63-76.	4.6	15
51	On the Stability of Nonlinear Wheel-Slip Zero Dynamics in Traction Control Systems. IEEE Transactions on Control Systems Technology, 2020, 28, 489-504.	5.2	15
52	An approach to integrate human motion prediction into local obstacle avoidance in close human-robot collaboration. , 2015, , .		14
53	Rollover avoidance for steerable vehicles by invariance control. , 2001, , .		13
54	Lane-based safety assessment of road scenes using Inevitable Collision States. , 2012, , .		13

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55	Road course estimation in unknown, structured environments. , 2013, , .		13
56	Bayesian state estimation and behavior selection for autonomous robotic exploration in dynamic environments. , 2008, , .		12
57	Interactive navigation of humans from a game theoretic perspective. , 2014, , .		12
58	Cost-oriented virtual reality and real-time control system architecture. Robotica, 2003, 21, 289-294.	1.9	10
59	Basketball robot: Ball-On-Plate with pure haptic information. , 2008, , .		10
60	Information retrieval system for human-robot communication - Asking for directions. , 2009, , .		10
61	Grid-Based Multi-Road-Course Estimation Using Motion Planning. IEEE Transactions on Vehicular Technology, 2016, 65, 1924-1935.	6.3	10
62	Socio-Contextual Constraints for Human Approach with a Mobile Robot. International Journal of Social Robotics, 2017, 9, 309-327.	4.6	10
63	Minimum-time optimal control for battery electric vehicles with four wheel-independent drives considering electrical overloading. Vehicle System Dynamics, 2022, 60, 491-515.	3.7	10
64	Combined Trajectory Planning and Gaze Direction Control for Robotic Exploration. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	9
65	Robot basketball: A comparison of ball dribbling with visual and force/torque feedback. , 2009, , .		9
66	On-line Trajectory Generation for Safe and Optimal Vehicle Motion Planning. Informatik Aktuell, 2012, , 99-107.	0.6	9
67	The Interactive Urban Robot: User-centered development and final field trial of a direction requesting robot. Paladyn, 2015, 6, .	2.7	9
68	A Hybrid Framework for Understanding and Predicting Human Reaching Motions. Frontiers in Robotics and AI, 2018, 5, 27.	3.2	9
69	Robot Basketball: Ball Dribbling â€” A Modified Juggling Task. , 2009, , 323-334.		9
70	Information-Based Gaze Direction Planning Algorithm for SLAM. , 2006, , .		8
71	Feedback guidelines for multimodal human-robot interaction: How should a robot give feedback when asking for directions?. , 2012, , .		8
72	Maneuver-based risk assessment for high-speed automotive scenarios. , 2012, , .		8

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73	Adaptive rectangular cuboids for 3D mapping. , 2015, , .		8
74	Towards Assessing the Human Trajectory Planning Horizon. PLoS ONE, 2016, 11, e0167021.	2.5	8
75	Nonlinear Traction Control Design, Stability Analysis and Experiments for Vehicles with On-Demand 4WD Torque Bias Systems. , 2019, , .		8
76	System interdependence analysis for autonomous mobile robots. , 2009, , .		7
77	A Framework for Information Distribution, Task Execution and Decision Making in Multi-Robot Systems. IEICE Transactions on Information and Systems, 2010, E93-D, 1352-1360.	0.7	7
78	Progressive stochastic motion planning for human-robot interaction. , 2017, , .		7
79	Adaptation and Transfer of Robot Motion Policies for Close Proximity Human-Robot Interaction. Frontiers in Robotics and AI, 2019, 6, 69.	3.2	7
80	Minimization of constraint violation probability in model predictive control. International Journal of Robust and Nonlinear Control, 2021, 31, 6740-6772.	3.7	7
81	Grid-Based Stochastic Model Predictive Control for Trajectory Planning in Uncertain Environments. , 2020, , .		7
82	Towards a dialog strategy for handling miscommunication in human-robot dialog. , 2010, , .		6
83	Dynamic Window Approach for omni-directional robots with polygonal shape. , 2011, , .		6
84	Following route graphs in urban environments. , 2011, , .		6
85	MuRoCo: A Framework for Capability- and Situation-Aware Coalition Formation in Cooperative Multi-Robot Systems. Journal of Intelligent and Robotic Systems: Theory and Applications, 2012, 67, 339-370.	3.4	6
86	Environment-based trajectory clustering to extract principal directions for autonomous vehicles. , 2014, , .		6
87	Road geometry estimation for urban semantic maps using open data. Advanced Robotics, 2017, 31, 282-290.	1.8	6
88	Global localization of 3D point clouds in building outline maps of urban outdoor environments. International Journal of Intelligent Robotics and Applications, 2017, 1, 429-441.	2.8	6
89	Legible action selection in human-robot collaboration. , 2017, , .		6
90	A Hybrid Human-Robot Collaborative Environment for Recycling Electrical and Electronic Equipment. , 2019, , .		6

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91	Efficient Closed-Form Task Space Manipulability for a 7-DOF Serial Robot. <i>Robotics</i> , 2019, 8, 98.	3.5	6
92	An Online Trajectory Generator on SE(3) for Human-Robot Collaboration. <i>Robotica</i> , 2020, 38, 1756-1777.	1.9	6
93	Minimum-time optimal control for vehicles with active rear-axle steering, transfer case and variable parameters. <i>Vehicle System Dynamics</i> , 2020, , 1-29.	3.7	6
94	Model Predictive Control with Models of Different Granularity and a Non-uniformly Spaced Prediction Horizon. , 2021, , .		6
95	Combined Robust and Stochastic Model Predictive Control for Models of Different Granularity. <i>IFAC-PapersOnLine</i> , 2020, 53, 7123-7129.	0.9	6
96	The Autonomous City Explorer project. , 2009, , .		5
97	Ball dribbling with an underactuated continuous-time control phase: Theory & experiments. , 2010, , .		5
98	Using penalized spline regression to calculate mean trajectories including confidence intervals of human motion data. , 2014, , .		5
99	Legible Model Predictive Control for Autonomous Driving on Highways. <i>IFAC-PapersOnLine</i> , 2018, 51, 215-221.	0.9	5
100	Data Association for Grid-Based Object Tracking Using Particle Labeling. , 2018, , .		5
101	Active-passive knee control for the humanoid UT-Theta. , 0, , .		4
102	Ball dribbling with an underactuated continuous-time control phase. , 2010, , .		4
103	System interdependence analysis for autonomous robots. <i>International Journal of Robotics Research</i> , 2011, 30, 601-614.	8.5	4
104	Towards transferability of theories on prosocial behavior from Social Psychology to HRI. , 2012, , .		4
105	Collision Avoidance with Stochastic Model Predictive Control for Systems with a Twofold Uncertainty Structure. , 2021, , .		4
106	Dialog strategies for handling miscommunication in task-related HRI. , 2011, , .		3
107	Computing unions of Inevitable Collision States and increasing safety to unexpected obstacles. , 2011, , .		3
108	Online Semantic Mapping of Urban Environments. <i>Lecture Notes in Computer Science</i> , 2012, , 54-73.	1.3	3

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109	Route description interpretation on automatically labeled robot maps. , 2013, , .		3
110	IURO â€“ Soziale Mensch-Roboter-Interaktion in den StraÃŸen von MÃ¼nchen. Automatisierungstechnik, 2015, 63, 231-242.	0.8	3
111	Investigating similarity measures for locomotor trajectories based on the human perception of differences in motions. , 2015, , .		3
112	Closed-loop safety assessment of uncertain roadmaps. Autonomous Robots, 2016, 40, 267-289.	4.8	3
113	An Ontology for Human-Human Interactions and Learning Interaction Behavior Policies. ACM Transactions on Human-Robot Interaction, 2019, 8, 1-26.	4.1	3
114	Impacts of Multimodal Feedback on Efficiency of Proactive Information Retrieval from Task-Related HRI. Journal of Advanced Computational Intelligence and Intelligent Informatics, 2012, 16, 313-326.	0.9	3
115	MS2MP: A Min-Sum Message Passing Algorithm for Motion Planning. , 2021, , .		3
116	Engine-Based Input-Output Linearization for Traction Control Systems. IFAC-PapersOnLine, 2020, 53, 14055-14060.	0.9	3
117	Disturbance estimation for robotic systems using continuous integral sliding mode observer. International Journal of Robust and Nonlinear Control, 2022, 32, 7946-7966.	3.7	3
118	Cost Oriented VR-Simulation Environment for Computer Aided Control Design. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2001, 34, 40-46.	0.4	2
119	Research and development towards an autonomous biped walking robot. , 0, , .		2
120	Interconnected performance optimization in complex robotic systems. , 2010, , .		2
121	Revealing Cluster Formation over Huge Volatile Robotic Data. , 2011, , .		2
122	TOWARD DYNAMIC MANIPULATION FOR HUMANOID ROBOTS: EXPERIMENTS AND DESIGN ASPECTS. International Journal of Humanoid Robotics, 2011, 08, 513-532.	1.1	2
123	Proactive human approach in dynamic environments. , 2012, , .		2
124	Local elevation mapping based on low mounted lidar sensors with narrow vertical field of view. , 2016, , .		2
125	Local elevation mapping for automated vehicles using lidar ray geometry and particle filters. , 2017, , .		2
126	Modeling and nonlinear control of antagonistically actuating pneumatic artificial muscles. , 2017, , .		2



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127	On the Frontier Between Kalman Conjecture and Markus-Yamabe Conjecture. , 2021, 5, 1309-1314.		2
128	Globally Optimal Online Redundancy Resolution for Serial 7-DOF Kinematics Along SE(3) Trajectories. , 2021, , .		2
129	Hybrid Human Motion Prediction for Action Selection Within Human-Robot Collaboration. Springer Proceedings in Advanced Robotics, 2017, , 289-298.	1.3	2
130	Grammatical Evolution of Robust Controller Structures Using Wilson Scoring and Criticality Ranking. Lecture Notes in Computer Science, 2017, , 194-209.	1.3	2
131	Safe Tracking Control of Euler-Lagrangian Systems Based on A Novel Adaptive Super-twisting Algorithm. IFAC-PapersOnLine, 2020, 53, 9974-9979.	0.9	2
132	Joint Dominance Coefficients: A Sensitivity-Based Measure for Ranking Robotic Degrees of Freedom. , 2009, , 1-10.		1
133	Wenn Roboter nach dem Weg fragen. Automatisierungstechnik, 2010, 58, 647-656.	0.8	1
134	PIRF 3D: Online spatial and appearance based loop closure. , 2012, , .		1
135	Built-in hyperspectral camera for smartphone in visible, near-infrared and middle-infrared lights region (third report): spectroscopic imaging for broad-area and real-time componential analysis system against local unexpected terrorism and disasters. , 2016, , .		1
136	Special issue on spatial reasoning and interaction for real-world robotics. Advanced Robotics, 2017, 31, 221-221.	1.8	1
137	Protective control for robot manipulator by sliding mode based disturbance reconstruction approach. , 2017, , .		1
138	Fast and close to optimal trajectory generation for articulated robots in reaching motions. , 2017, , .		1
139	Motion recognition by natural language including success and failure of tasks for co-working robot with human. , 2017, , .		1
140	Introduction to the focused section on sensing and perception for autonomous and networked robotics. International Journal of Intelligent Robotics and Applications, 2017, 1, 369-371.	2.8	1
141	Learning Hand Movement Interaction Control Using RNNs: From HHI to HRI. IEEE Robotics and Automation Letters, 2018, 3, 4100-4107.	5.1	1
142	Automated Nonlinear Control Structure Design by Domain of Attraction Maximization with Eigenvalue and Frequency Domain Specifications. Lecture Notes in Electrical Engineering, 2020, , 118-141.	0.4	1
143	Nonlinear Control Structure Design using Grammatical Evolution and Lyapunov Equation based Optimization. , 2018, , .		1
144	Convexification of Semi-activity Constraints Applied to Minimum-time Optimal Control for Vehicles with Semi-active Limited-slip Differential. , 2020, , .		1

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145	Haptic Object Identification for Advanced Manipulation Skills. Lecture Notes in Computer Science, 2020, , 128-140.	1.3	1
146	Constrained Visual-Inertial Localization With Application And Benchmark in Laparoscopic Surgery. , 2022, , .		1
147	Humanoide Robotik. Automatisierungstechnik, 2010, 58, 611-612.	0.8	0
148	An optimization approach for 3D environment mapping using normal vector uncertainty. , 2012, , .		0
149	An online trajectory generator on SE(3) with magnitude constraints. , 2017, , .		0
150	A Concise and Geometrically Exact Planar Beam Model for Arbitrarily Large Elastic Deformation Dynamics. Frontiers in Robotics and AI, 2020, 7, 609478.	3.2	0
151	Probabilistic model predictive control for extended prediction horizons. Automatisierungstechnik, 2021, 69, 759-770.	0.8	0
152	Robot Basketball " A New Challenge for Real-Time Control. , 2012, , 307-322.		0
153	Quadratization and Roof Duality of Markov Logic Networks. Journal of Artificial Intelligence Research, 0, 55, 685-714.	7.0	0
154	Nonlinear Control Structure Design using Grammatical Evolution and Lyapunov Equation based Optimization. , 2018, , .		0
155	Space splitting convexification: a local solution method for nonconvex optimal control problems. International Journal of Control, 0, , 1-24.	1.9	0
156	Computing unions of Inevitable Collision States and increasing safety to unexpected obstacles. , 2011, , .		0