Gaurav S Sukhatme

List of Publications by Year
in descending order

107 papers	4,847 citations	159585 30 h-index
109 all docs	109 docs citations	109 times ranked

206112 48 g-index
3673 citing authors

#	Article	IF	Citations
1	An Incremental Self-Deployment Algorithm for Mobile Sensor Networks. Autonomous Robots, 2002, 13, 113-126.	4.8	386
2	Sampling-based robotic information gathering algorithms. International Journal of Robotics Research, 2014, 33, 1271-1287.	8.5	220
3	Crazyswarm: A large nano-quadcopter swarm. , 2017, , .		214
4	An innovative methodology for detection and quantification of cracks through incorporation of depth perception. Machine Vision and Applications, 2013, 24, 227-241.	2.7	206
5	Mobile Robot Simultaneous Localization and Mapping in Dynamic Environments. Autonomous Robots, 2005, 19, 53-65.	4.8	199
6	Sliding window filter with application to planetary landing. Journal of Field Robotics, 2010, 27, 587-608.	6.0	181
7	Coverage, Exploration and Deployment by a Mobile Robot and Communication Network. Telecommunication Systems, 2004, 26, 181-196.	2.5	142
8	A survey and evaluation of promising approaches for automatic image-based defect detection of bridge structures. Structure and Infrastructure Engineering, 2009, 5, 455-486.	3.7	139
9	Multi-Robot Task Allocation in Uncertain Environments. Autonomous Robots, 2003, 14, 255-263.	4.8	127
10	Risk–aware Path Planning for Autonomous Underwater Vehicles using Predictive Ocean Models. Journal of Field Robotics, 2013, 30, 741-762.	6.0	124
11	Tracking Targets Using Multiple Robots: The Effect of Environment Occlusion. Autonomous Robots, 2002, 13, 191-205.	4.8	117
12	Active planning for underwater inspection and the benefit of adaptivity. International Journal of Robotics Research, 2013, 32, 3-18.	8.5	110
13	Grip Control Using Biomimetic Tactile Sensing Systems. IEEE/ASME Transactions on Mechatronics, 2009, 14, 718-723.	5.8	108
14	Multiple Mobile Robot Systems. Springer Handbooks, 2016, , 1335-1384.	0.6	100
15	Informative path planning for an autonomous underwater vehicle. , 2010, , .		95
16	Branch and bound for informative path planning. , 2012, , .		86
17	Semantic Mapping Using Mobile Robots. IEEE Transactions on Robotics, 2008, 24, 245-258.	10.3	83
18	Design and Development of a Wireless Robotic Networked Aquatic Microbial Observing System. Environmental Engineering Science, 2007, 24, 205-215.	1.6	76

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19	Cooperative multi-robot control for target tracking with onboard sensing. International Journal of Robotics Research, 2015, 34, 1660-1677.	8.5	72
20	Adaptive Sampling for Estimating a Scalar Field using a Robotic Boat and a Sensor Network. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	64
21	Coordinated sampling of dynamic oceanographic features with underwater vehicles and drifters. International Journal of Robotics Research, 2012, 31, 626-646.	8.5	62
22	An autonomous manipulation system based on force control and optimization. Autonomous Robots, 2014, 36, 11-30.	4.8	58
23	Multi-image stitching and scene reconstruction for evaluating defect evolution in structures. Structural Health Monitoring, 2011, 10, 643-657.	7.5	55
24	Constrained Interaction and Coordination in Proximity-Limited Multiagent Systems. IEEE Transactions on Robotics, 2013, 29, 930-944.	10.3	54
25	Dataâ€driven learning and planning for environmental sampling. Journal of Field Robotics, 2018, 35, 643-661.	6.0	50
26	Design and Implementation of NIMS3D, a 3-D Cabled Robot for Actuated Sensing Applications. IEEE Transactions on Robotics, 2009, 25, 325-339.	10.3	48
27	Active articulation model estimation through interactive perception. , 2015, , .		47
28	Downwash-aware trajectory planning for large quadrotor teams. , 2017, , .		47
29	Architecture-driven self-adaptation and self-management in robotics systems. , 2009, , .		46
30	Using manipulation primitives for brick sorting in clutter. , 2012, , .		43
31	Distributed Data Fusion for Multirobot Search. IEEE Transactions on Robotics, 2015, 31, 55-66.	10.3	43
32	Self-calibrating multi-sensor fusion with probabilistic measurement validation for seamless sensor switching on a UAV. , 2016, , .		43
33	Sim-to-(Multi)-Real: Transfer of Low-Level Robust Control Policies to Multiple Quadrotors. , 2019, , .		43
34	Landing a Helicopter on a Moving Target. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	42
35	Uncertainty-driven view planning for underwater inspection. , 2012, , .		42
36	Autonomous Underwater Vehicle trajectory design coupled with predictive ocean models: A case study. , 2010, , .		40

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37	Learning Uncertainty in Ocean Current Predictions for Safe and Reliable Navigation of Underwater Vehicles. Journal of Field Robotics, 2016, 33, 47-66.	6.0	40
38	Multi-robot coordination through dynamic Voronoi partitioning for informative adaptive sampling in communication-constrained environments. , 2017, , .		40
39	Observability-Aware Trajectory Optimization for Self-Calibration With Application to UAVs. IEEE Robotics and Automation Letters, 2017, 2, 1770-1777.	5.1	40
40	Semantic labeling of 3D point clouds with object affordance for robot manipulation. , 2014, , .		36
41	Rover-IRL: Inverse Reinforcement Learning With Soft Value Iteration Networks for Planetary Rover Path Planning. IEEE Robotics and Automation Letters, 2019, 4, 1387-1394.	5.1	34
42	Reliable Graphs for SLAM. International Journal of Robotics Research, 2019, 38, 260-298.	8.5	31
43	Distributed coordination and data fusion for underwater search. , 2011, , .		29
44	Towards marine bloom trajectory prediction for AUV mission planning. , 2010, , .		28
45	3D tree reconstruction from laser range data. , 2009, , .		27
46	Experiments in robotic boat localization. , 2007, , .		25
47	Macro- to fine-scale spatial and temporal distributions and dynamics of phytoplankton and their environmental driving forces in a small montane lake in southern California, USA. Limnology and Oceanography, 2008, 53, 2333-2349.	3.1	25
48	Gradient-Informed Path Smoothing for Wheeled Mobile Robots. , 2018, , .		24
49	Resilience by Reconfiguration: Exploiting Heterogeneity in Robot Teams. , 2019, , .		24
50	Bench-MR: A Motion Planning Benchmark for Wheeled Mobile Robots. IEEE Robotics and Automation Letters, 2021, 6, 4536-4543.	5.1	23
51	Autonomous data collection from underwater sensor networks using acoustic communication. , 2011, , .		22
52	Detecting and Tracking Level Sets of Scalar Fields using a Robotic Sensor Network. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	20
53	Tracking and Modeling of Human Activity Using Laser Rangefinders. International Journal of Social Robotics, 2010, 2, 95-107.	4.6	20
54	Communication protocols for underwater data collection using a robotic sensor network. , 2011, , .		20

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55	Toward risk aware mission planning for Autonomous Underwater Vehicles. , 2011, , .		20
56	Using Manipulation Primitives for Object Sorting in Cluttered Environments. IEEE Transactions on Automation Science and Engineering, 2015, 12, 608-614.	5.2	19
57	Towards improving mission execution for autonomous gliders with an ocean model and kalman filter. , 2012, , .		18
58	Interactive environment exploration in clutter. , 2013, , .		18
59	Persistent ocean monitoring with underwater gliders: Towards accurate reconstruction of dynamic ocean processes. , 2011, , .		17
60	Towards mixed-initiative, multi-robot field experiments: Design, deployment, and lessons learned. , 2011, , .		17
61	Risk-aware trajectory generation with application to safe quadrotor landing. , 2014, , .		17
62	Learning uncertainty models for reliable operation of Autonomous Underwater Vehicles. , 2013, , .		16
63	Autonomous data collection from underwater sensor networks using acoustic communication. , 2011, , .		15
64	Hierarchical probabilistic regression for AUV-based adaptive sampling of marine phenomena. , 2013, , .		14
65	Planning high-speed safe trajectories in confidence-rich maps. , 2017, , .		14
66	Energy based path planning for a novel cabled robotic system. , 2008, , .		13
67	Relative bearing estimation from commodity radios. , 2009, , .		13
68	Effects of an Acute Hypoxic Event on Microplankton Community Structure in a Coastal Harbor of Southern California. Estuaries and Coasts, 2013, 36, 135-148.	2.2	13
69	Confidence-rich grid mapping. International Journal of Robotics Research, 2019, 38, 1352-1374.	8.5	13
70	Active drifters: Towards a practical multi-robot system for ocean monitoring. , 2015, , .		12
71	Resilience in multi-robot target tracking through reconfiguration. , 2020, , .		12
72	Resilience in Multirobot Multitarget Tracking With Unknown Number of Targets Through Reconfiguration. IEEE Transactions on Control of Network Systems, 2021, 8, 609-620.	3.7	12

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73	Resilient Monitoring in Heterogeneous Multi-Robot Systems Through Network Reconfiguration. IEEE Transactions on Robotics, 2022, 38, 126-138.	10.3	12
74	Identifying and Addressing Uncertainty in Architecture-Level Software Reliability Modeling. , 2007, , .		10
75	Latency Analysis of Coalescence for Robot Groups. , 2007, , .		9
76	Autonomous biconnected networks of mobile robots. , 2008, , .		9
77	Squared error distortion metrics for motion planning in robotic sensor networks. , 2013, , .		9
78	Towards autonomous wireless backbone deployment in highly-obstructed environments. , 2011, , .		8
79	An investigation on the accuracy of Regional Ocean Models through field trials. , 2013, , .		8
80	Interactive affordance map building for a robotic task. , 2015, , .		8
81	Physics-based Simulation of Continuous-Wave LIDAR for Localization, Calibration and Tracking. , 2020, , .		8
82	Learning Deformable Object Manipulation From Expert Demonstrations. IEEE Robotics and Automation Letters, 2022, 7, 8775-8782.	5.1	8
83	Loop Closure Prioritization for Efficient and Scalable Multi-Robot SLAM. IEEE Robotics and Automation Letters, 2022, 7, 9651-9658.	5.1	8
84	Weighted barrier functions for computation of force distributions with friction cone constraints. , 2010, , .		7
85	A spatio-temporal representation for the orienteering problem with time-varying profits. , 2017, , .		7
86	On-board Adaptive Informative Sampling for AUVs: a Feasibility Study. , 2018, , .		7
87	Partially observed distance mapping for cooperative multi-robot localization. Intelligent Service Robotics, 2009, 2, 1-8.	2.6	5
88	A Data-Driven Movement Model for Single Cellphone-Based Indoor Positioning. , 2011, , .		5
89	Hierarchical linear models for energy prediction using inertial sensors: a comparative study for treadmill walking. Journal of Ambient Intelligence and Humanized Computing, 2013, 4, 747-758.	4.9	5
90	An adaptive k-opt method for solving traveling salesman problem. , 2016, , .		5

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91	Pilot Surveys for Adaptive Informative Sampling. , 2018, , .		5
92	Adaptive and Risk-Aware Target Tracking for Robot Teams With Heterogeneous Sensors. IEEE Robotics and Automation Letters, 2022, 7, 5615-5622.	5.1	5
93	On determining the best physiological predictors of activity intensity using phone-based sensors. , 2013, , .		4
94	Trajectory learning for human-robot scientific data collection. , 2014, , .		4
95	Estimating Metric Scale Visual Odometry from Videos using 3D Convolutional Networks. , 2019, , .		4
96	Probabilistic Inference of Simulation Parameters via Parallel Differentiable Simulation. , 2022, , .		4
97	The Design and Control of a Prototype Quadruped Microrover. Autonomous Robots, 1997, 4, 211-220.	4.8	3
98	Field-tests of a redundantly actuated cable-driven robot for environmental sampling applications. , 2009, , .		3
99	On-line AUV Survey Planning for Finding Safe Vessel Paths through Hazardous Environments. , 2018, , .		3
100	PROFIT MAXIMIZING LOGISTIC REGRESSION MODELING FOR CREDIT SCORING. , 2018, , .		3
101	Synthesis of Large-Scale Instant IoT Networks. IEEE Transactions on Mobile Computing, 2023, 22, 1810-1824.	5.8	2
102	Toward risk aware mission planning for Autonomous Underwater Vehicles. , 2011, , .		2
103	Evaluating the mobility of a wheeled robot using dynamic modeling *. Advanced Robotics, 1997, 12, 579-591.	1.8	1
104	A robotic sentinel for benthic sampling along a transect. , 2009, , .		1
105	Towards mixed-initiative, multi-robot field experiments: Design, deployment, and lessons learned. , 2011, , .		1
106	Online trajectory optimization to improve object recognition. , 2016, , .		0
107	Sensing the Sensor: Estimating Camera Properties with Minimal Information. ACM Transactions on Sensor Networks, 2022, 18, 1-26.	3.6	0