Seth A Hutchinson

List of Publications by Year
in descending order

		257101	149479
123 papers	8,620 citations	24 h-index	56 g-index
127 all docs	127 docs citations	127 times ranked	3664 citing authors

#	Article	IF	Citations
1	A Resilient and Energy-Aware Task Allocation Framework for Heterogeneous Multirobot Systems. IEEE Transactions on Robotics, 2022, 38, 159-179.	7.3	25
2	Adaptively Robust Control Policy Synthesis Through Riemannian Motion Policies. , 2022, 6, 31-36.		2
3	GRSTAPS: Graphically Recursive Simultaneous Task Allocation, Planning, and Scheduling. International Journal of Robotics Research, 2022, 41, 232-256.	5.8	11
4	Hierarchical Planning for Heterogeneous Multi-Robot Routing Problems via Learned Subteam Performance. IEEE Robotics and Automation Letters, 2022, 7, 4464-4471.	3.3	5
5	Safety Compliant Control for Robotic Manipulator With Task and Input Constraints. IEEE Robotics and Automation Letters, 2022, 7, 10659-10664.	3.3	6
6	Momentum-Aware Trajectory Optimization and Control for Agile Quadrupedal Locomotion. IEEE Robotics and Automation Letters, 2022, 7, 7755-7762.	3.3	12
7	GTGraffiti: Spray Painting Graffiti Art from Human Painting Motions with a Cable Driven Parallel Robot. , 2022, , .		5
8	A Robust Time-Varying Riccati-Based Control for Uncertain Nonlinear Dynamical Systems. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2022, 144, .	0.9	3
9	TIE: Time-Informed Exploration for Robot Motion Planning. IEEE Robotics and Automation Letters, 2021, 6, 3585-3591.	3.3	4
10	Adaptive Leader-Follower Control for Multi-Robot Teams with Uncertain Network Structure. , 2021, , .		2
11	Guest Editorial Special Issue on the 2018 Workshop on the Algorithmic Foundations of Robotics (WAFR). IEEE Transactions on Automation Science and Engineering, 2021, 18, 863-863.	3.4	0
12	Intensifying Integrity: Prioritizing Values Within Tech and Academia [President's Message]. IEEE Robotics and Automation Magazine, 2021, 28, 8-167.	2.2	0
13	Mass Estimation of a Moving Object Through Minimal Manipulation Interaction. , 2021, , .		0
14	Distributed Optimal Control Framework based on Coordinate Descent Optimization for Multi-Agent Robots. , 2021, , .		0
15	River segmentation for autonomous surface vehicle localization and river boundary mapping. Journal of Field Robotics, 2021, 38, 192-211.	3.2	7
16	Real-Time Safety and Control of Robotic Manipulators with Torque Saturation in Operational Space. , 2021, , .		3
17	Extending Riemmanian Motion Policies to a Class of Underactuated Wheeled-Inverted-Pendulum Robots. , 2020, , .		9
18	Safe Optimal Control Under Parametric Uncertainties. IEEE Robotics and Automation Letters, 2020, 5, 5725-5731.	3.3	2

#	Article	IF	Citations
19	Promoting Diversity and Justice: Our Challenge and Responsibility [President's Message]. IEEE Robotics and Automation Magazine, 2020, 27, 6-8.	2.2	0
20	Feedback Whole-Body Control of Wheeled Inverted Pendulum Humanoids Using Operational Space. , 2020, , .		0
21	Sensor Coverage Control Using Robots Constrained to a Curve. , 2019, , .		1
22	An Optimal Task Allocation Strategy for Heterogeneous Multi-Robot Systems. , 2019, , .		31
23	Trajectory planning for a bat-like flapping wing robot. , 2019, , .		13
24	Non-Uniform Robot Densities in Vibration Driven Swarms Using Phase Separation Theory. , 2019, , .		10
25	A Study of a Class of Vibration-Driven Robots: Modeling, Analysis, Control and Design of the Brushbot. , 2019, , .		9
26	Skeleton-Based Human Action Recognition by Pose Specificity and Weighted Voting. International Journal of Social Robotics, 2019, 11, 219-234.	3.1	10
27	Robust rendezvous for multi-robot system with random node failures: an optimization approach. Autonomous Robots, 2018, 42, 1807-1818.	3.2	17
28	The Visual–Inertial Canoe Dataset. International Journal of Robotics Research, 2018, 37, 13-20.	5.8	20
29	Image feedback based optimal control and the value of information in a differential game. Automatica, 2018, 90, 271-285.	3.0	18
30	Visual–inertial curve simultaneous localization and mapping: Creating a sparse structured world without feature points. Journal of Field Robotics, 2018, 35, 516-544.	3.2	14
31	Optimizing the structure and movement of a robotic bat with biological kinematic synergies. International Journal of Robotics Research, 2018, 37, 1233-1252.	5.8	16
32	Robot ecology: Constraint-based control design for long duration autonomy. Annual Reviews in Control, 2018, 46, 1-7.	4.4	50
33	Vision–based Localization and Robot–centric Mapping in Riverine Environments. Journal of Field Robotics, 2017, 34, 429-450.	3.2	30
34	A biomimetic robotic platform to study flight specializations of bats. Science Robotics, 2017, 2, .	9.9	161
35	Fault-Tolerant Rendezvous of Multirobot Systems. IEEE Transactions on Robotics, 2017, 33, 565-582.	7.3	47
36	Customizing haptic and visual feedback for assistive human–robot interface and the effects on performance improvement. Robotics and Autonomous Systems, 2017, 91, 258-269.	3.0	8

#	Article	IF	Citations
37	Reducing Versatile Bat Wing Conformations toÂa 1-DoF Machine. Lecture Notes in Computer Science, 2017, , 181-192.	1.0	6
38	Describing Robotic Bat Flight with Stable Periodic Orbits. Lecture Notes in Computer Science, 2017, , 394-405.	1.0	8
39	Boundedness Approach to Gait Planning for the Flexible Linear Inverted Pendulum Model. Lecture Notes in Computer Science, 2017, , 58-70.	1.0	1
40	Visual-inertial curve SLAM. , 2016, , .		2
41	Optimal double support zero moment point trajectories for bipedal locomotion. , 2016, , .		3
42	An efficient algorithm for fault-tolerant rendezvous of multi-robot systems with controllable sensing range. , 2016, , .		21
43	Bat Bot (B2), a biologically inspired flying machine. , 2016, , .		47
44	Nonlinear Flight Controller Synthesis of a Bat-Inspired Micro Aerial Vehicle. , 2016, , .		9
45	Planar-Based Visual Inertial Navigation: Observability Analysis and Motion Estimation. Journal of Intelligent and Robotic Systems: Theory and Applications, 2016, 82, 277-299.	2.0	9
46	Maintaining strong mutual visibility of an evader moving over the reduced visibility graph. Autonomous Robots, 2016, 40, 395-423.	3.2	10
47	Using the motion perceptibility measure to classify points of interest for visual-based AUV guidance in a reef ecosystem. , 2015, , .		0
48	Omnidirectional-vision-based estimation for containment detection of a robotic mower. , 2015, , .		6
49	Inversion-based gait generation for humanoid robots. , 2015, , .		9
50	Lagrangian modeling and flight control of articulated-winged bat robot. , 2015, , .		20
51	A distributed robust convergence algorithm for multi-robot systems in the presence of faulty robots. , 2015, , .		12
52	Planning desired center of Mass and zero moment point trajectories for bipedal locomotion. , 2015, , .		10
53	Motion primitives and 3D path planning for fast flight through a forest. International Journal of Robotics Research, 2015, 34, 357-377.	5.8	63
54	Observer Design for Stochastic Nonlinear Systems via Contraction-Based Incremental Stability. IEEE Transactions on Automatic Control, 2015, 60, 700-714.	3.6	58

#	Article	IF	Citations
55	Robust optimal deployment in mobile sensor networks with peer-to-peer communication. , 2014, , .		1
56	Boundedness issues in planning of locomotion trajectories for biped robots. , 2014, , .		33
57	A distributed optimal strategy for rendezvous of multi-robots with random node failures. , 2014, , .		5
58	A coupled oscillators-based control architecture for locomotory gaits. , 2014, , .		6
59	Modeling user's driving-characteristics in a steering task to customize a virtual fixture based on task-performance. , 2014, , .		2
60	Worst-case performance of a mobile sensor network under individual sensor failure. , 2013, , .		5
61	Optimum Spatially Constrained Turns for Agile Micro Aerial Vehicles. , 2013, , .		2
62	Farewell Editorial. IEEE Transactions on Robotics, 2013, 29, 1069-1070.	7.3	0
63	Image moments for higher-level feature based navigation. , 2013, , .		16
64	Robust coverage by a mobile robot of a planar workspace. , 2013, , .		19
65	Worst-case performance of rendezvous networks in the presence of adversarial nodes. , 2013, , .		1
66	IMU-camera data fusion: Horizontal plane observation with explicit outlier rejection. , 2013, , .		4
67	Motion primitives and 3-D path planning for fast flight through a forest. , 2013, , .		13
68	Vision-based localization and mapping for an autonomous mower. , 2013, , .		4
69	Inertial-Aided Vision-Based Localization and Mapping in a Riverine Environment with Reflection Measurements. , 2013, , .		7
70	Development of a Scalable Monitoring System for Wheelchair Tilt-in-Space Usage. International Journal of Physical Medicine & Rehabilitation, 2013, 1, .	0.5	1
71	Modelling search with a binary sensor utilizing self-conjugacy of the exponential family. , 2012, , .		6
72	Proving path non-existence using sampling and alpha shapes. , 2012, , .		31

#	Article	IF	Citations
73	Robust optimal deployment of mobile sensor networks. , 2012, , .		5
74	Observer design for stochastic nonlinear systems using contraction analysis. , 2012, , .		12
75	CurveSLAM: An approach for vision-based navigation without point features. , 2012, , .		22
76	The mathematical model and control of human-machine perceptual feedback system. , 2011, , .		0
77	Minimum uncertainty robot navigation using information-guided POMDP planning. , 2011, , .		26
78	Monocular Vision based Navigation in GPS-Denied Riverine Environments. , 2011, , .		7
79	The mathematical model and control of human-machine perceptual feedback system. , 2011, , .		0
80	Tracking an omnidirectional evader with a differential drive robot. Autonomous Robots, 2011, 31, 345-366.	3.2	23
81	Motion Planning Strategy for Finding an Object with a Mobile Manipulator in Three-Dimensional Environments. Advanced Robotics, 2011, 25, 1627-1650.	1.1	11
82	From optimal planning to visual servoing with limited FOV. , 2011, , .		7
83	A cell decomposition approach to visibility-based pursuit evasion among obstacles. International Journal of Robotics Research, 2011, 30, 1709-1727.	5.8	32
84	On the Existence of Nash Equilibrium for a Two-player Pursuit–Evasion Game with Visibility Constraints. International Journal of Robotics Research, 2010, 29, 831-839.	5.8	51
85	Minimum uncertainty robot path planning using a POMDP approach. , 2010, , .		18
86	Exploiting domain knowledge in planning for uncertain robot systems modeled as POMDPs. , 2010, , .		9
87	Homography-Based Control Scheme for Mobile Robots With Nonholonomic and Field-of-View Constraints. IEEE Transactions on Systems, Man, and Cybernetics, 2010, 40, 1115-1127.	5.5	88
88	Gradient Projection Methods for Constrained Image-based Visual Servo. Lecture Notes in Control and Information Sciences, 2010, , 253-274.	0.6	1
89	Detecting intrusion faults in remotely controlled systems. , 2009, , .		0
90	Game-theoretic analysis of a visibility based pursuit-evasion game in the presence of obstacles. , 2009, , .		22

#	Article	IF	Citations
91	Coarsely calibrated visual servoing of a mobile robot using a catadioptric vision system. , 2009, , .		3
92	An Efficient Motion Strategy to Compute Expected-Time Locally Optimal Continuous Search Paths in Known Environments. Advanced Robotics, 2009, 23, 1533-1560.	1.1	43
93	On the Existence of Nash Equilibrium for a Two Player Pursuit-Evasion Game with Visibility Constraints. Springer Tracts in Advanced Robotics, 2009, , 251-265.	0.3	16
94	A Sampling Hyperbelief Optimization Technique for Stochastic Systems. Springer Tracts in Advanced Robotics, 2009, , 217-231.	0.3	5
95	An improved hierarchical motion planner for humanoid robots. , 2008, , .		18
96	Multi-Attribute Utility Analysis in the Choice of Vision-Based Robot Controllers. International Journal of Optomechatronics, 2008, 2, 326-360.	3.3	0
97	Hyper-particle filtering for stochastic systems. , 2008, , .		5
98	Partial barrier coverage: Using game theory to optimize probability of undetected intrusion in polygonal environments. , 2008, , .		7
99	A Complexity result for the pursuit-evasion game of maintaining visibility of a moving evader. , 2008, , .		26
100	A Stable Vision-Based Control Scheme for Nonholonomic Vehicles to Keep a Landmark in the Field of View. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	31
101	Surveillance Strategies for a Pursuer with Finite Sensor Range. International Journal of Robotics Research, 2007, 26, 233-253.	5.8	52
102	Barrier Coverage for Variable Bounded-Range Line-of-Sight Guards. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	22
103	Optimal Paths for Landmark-Based Navigation by Differential-Drive Vehicles With Field-of-View Constraints. , 2007, 23, 47-59.		98
104	Stable Visual Servoing Through Hybrid Switched-System Control. , 2007, 23, 530-540.		160
105	Visual servo control. II. Advanced approaches [Tutorial]. IEEE Robotics and Automation Magazine, 2007, 14, 109-118.	2.2	807
106	Editorial: Special Issue on Vision and Robotics, Parts I and II. International Journal of Computer Vision, 2007, 74, 217-218.	10.9	4
107	Visual Servo Velocity and Pose Control of a Wheeled Inverted Pendulum through Partial-Feedback Linearization. , 2006, , .		26
108	Planning exploration strategies for simultaneous localization and mapping. Robotics and Autonomous Systems, 2006, 54, 314-331.	3.0	71

#	Article	IF	Citations
109	Visual servo control. I. Basic approaches. IEEE Robotics and Automation Magazine, 2006, 13, 82-90.	2.2	1,866
110	A Sampling-Based Motion Planning Approach to Maintain Visibility of Unpredictable Targets. Autonomous Robots, 2005, 19, 285-300.	3.2	38
111	A Framework for Reactive Motion and Sensing Planning: A Critical Events-Based Approach. Lecture Notes in Computer Science, 2005, , 990-1000.	1.0	0
112	A Framework for Real-time Path Planning in Changing Environments. International Journal of Robotics Research, 2002, 21, 999-1030.	5.8	117
113	Estimating uncertainty in SSD-based feature tracking. Image and Vision Computing, 2002, 20, 47-58.	2.7	88
114	A new partitioned approach to image-based visual servo control. IEEE Transactions on Automation Science and Engineering, 2001, 17, 507-515.	2.4	383
115	An Objective-Based Framework for Motion Planning under Sensing and Control Uncertainties. International Journal of Robotics Research, 1998, 17, 19-42.	5.8	31
116	Optimal motion planning for multiple robots having independent goals. IEEE Transactions on Automation Science and Engineering, 1998, 14, 912-925.	2.4	309
117	Textured image segmentation. Image and Vision Computing, 1997, 15, 781-795.	2.7	6
118	A tutorial on visual servo control. IEEE Transactions on Automation Science and Engineering, 1996, 12, 651-670.	2.4	2,846
119	A Probabilistic Approach to Perceptual Grouping. Computer Vision and Image Understanding, 1996, 64, 399-419.	3.0	15
120	A Framework for Constructing Probability Distributions on the Space of Image Segmentations. Computer Vision and Image Understanding, 1995, 61, 203-230.	3.0	8
121	Visual compliance: task-directed visual servo control. IEEE Transactions on Automation Science and Engineering, 1994, 10, 334-342.	2.4	120
122	Multi-Rate Analysis and Design of Visual Feedback Digital Servo-Control System. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1994, 116, 45-55.	0.9	44
123	Approximation Schemes for Two-Player Pursuit Evasion Games with Visibility Constraints. , 0, , .		20