

Seth A Hutchinson

List of Publications by Year in descending order

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Version: 2024-02-01

123
papers

8,620
citations

257101

24
h-index

149479

56
g-index

127
all docs

127
docs citations

127
times ranked

3664
citing authors

#	ARTICLE	IF	CITATIONS
1	A tutorial on visual servo control. IEEE Transactions on Automation Science and Engineering, 1996, 12, 651-670.	2.4	2,846
2	Visual servo control. I. Basic approaches. IEEE Robotics and Automation Magazine, 2006, 13, 82-90.	2.2	1,866
3	Visual servo control. II. Advanced approaches [Tutorial]. IEEE Robotics and Automation Magazine, 2007, 14, 109-118.	2.2	807
4	A new partitioned approach to image-based visual servo control. IEEE Transactions on Automation Science and Engineering, 2001, 17, 507-515.	2.4	383
5	Optimal motion planning for multiple robots having independent goals. IEEE Transactions on Automation Science and Engineering, 1998, 14, 912-925.	2.4	309
6	A biomimetic robotic platform to study flight specializations of bats. Science Robotics, 2017, 2, .	9.9	161
7	Stable Visual Servoing Through Hybrid Switched-System Control. , 2007, 23, 530-540.		160
8	Visual compliance: task-directed visual servo control. IEEE Transactions on Automation Science and Engineering, 1994, 10, 334-342.	2.4	120
9	A Framework for Real-time Path Planning in Changing Environments. International Journal of Robotics Research, 2002, 21, 999-1030.	5.8	117
10	Optimal Paths for Landmark-Based Navigation by Differential-Drive Vehicles With Field-of-View Constraints. , 2007, 23, 47-59.		98
11	Estimating uncertainty in SSD-based feature tracking. Image and Vision Computing, 2002, 20, 47-58.	2.7	88
12	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
13	Planning exploration strategies for simultaneous localization and mapping. Robotics and Autonomous Systems, 2006, 54, 314-331.	3.0	71
14	Motion primitives and 3D path planning for fast flight through a forest. International Journal of Robotics Research, 2015, 34, 357-377.	5.8	63
15	Observer Design for Stochastic Nonlinear Systems via Contraction-Based Incremental Stability. IEEE Transactions on Automatic Control, 2015, 60, 700-714.	3.6	58
16	Surveillance Strategies for a Pursuer with Finite Sensor Range. International Journal of Robotics Research, 2007, 26, 233-253.	5.8	52
17	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
18	Robot ecology: Constraint-based control design for long duration autonomy. Annual Reviews in Control, 2018, 46, 1-7.	4.4	50

#	ARTICLE	IF	CITATIONS
19	Bat Bot (B2), a biologically inspired flying machine. , 2016, , .		47
20	Fault-Tolerant Rendezvous of Multirobot Systems. IEEE Transactions on Robotics, 2017, 33, 565-582.	7.3	47
21	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
22	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
23	A Sampling-Based Motion Planning Approach to Maintain Visibility of Unpredictable Targets. Autonomous Robots, 2005, 19, 285-300.	3.2	38
24	Boundedness issues in planning of locomotion trajectories for biped robots. , 2014, , .		33
25	A cell decomposition approach to visibility-based pursuit evasion among obstacles. International Journal of Robotics Research, 2011, 30, 1709-1727.	5.8	32
26	An Objective-Based Framework for Motion Planning under Sensing and Control Uncertainties. International Journal of Robotics Research, 1998, 17, 19-42.	5.8	31
27	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
28	Proving path non-existence using sampling and alpha shapes. , 2012, , .		31
29	An Optimal Task Allocation Strategy for Heterogeneous Multi-Robot Systems. , 2019, , .		31
30	Vision-Based Localization and Robot-Centric Mapping in Riverine Environments. Journal of Field Robotics, 2017, 34, 429-450.	3.2	30
31	Visual Servo Velocity and Pose Control of a Wheeled Inverted Pendulum through Partial-Feedback Linearization. , 2006, , .		26
32	A Complexity result for the pursuit-evasion game of maintaining visibility of a moving evader. , 2008, , .		26
33	Minimum uncertainty robot navigation using information-guided POMDP planning. , 2011, , .		26
34	A Resilient and Energy-Aware Task Allocation Framework for Heterogeneous Multirobot Systems. IEEE Transactions on Robotics, 2022, 38, 159-179.	7.3	25
35	Tracking an omnidirectional evader with a differential drive robot. Autonomous Robots, 2011, 31, 345-366.	3.2	23
36	Barrier Coverage for Variable Bounded-Range Line-of-Sight Guards. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	22

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37	Game-theoretic analysis of a visibility based pursuit-evasion game in the presence of obstacles. , 2009, , .		22
38	CurveSLAM: An approach for vision-based navigation without point features. , 2012, , .		22
39	An efficient algorithm for fault-tolerant rendezvous of multi-robot systems with controllable sensing range. , 2016, , .		21
40	Lagrangian modeling and flight control of articulated-winged bat robot. , 2015, , .		20
41	The Visualâ€“Inertial Canoe Dataset. International Journal of Robotics Research, 2018, 37, 13-20.	5.8	20
42	Approximation Schemes for Two-Player Pursuit Evasion Games with Visibility Constraints. , 0, , .		20
43	Robust coverage by a mobile robot of a planar workspace. , 2013, , .		19
44	An improved hierarchical motion planner for humanoid robots. , 2008, , .		18
45	Minimum uncertainty robot path planning using a POMDP approach. , 2010, , .		18
46	Image feedback based optimal control and the value of information in a differential game. Automatica, 2018, 90, 271-285.	3.0	18
47	Robust rendezvous for multi-robot system with random node failures: an optimization approach. Autonomous Robots, 2018, 42, 1807-1818.	3.2	17
48	Image moments for higher-level feature based navigation. , 2013, , .		16
49	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
50	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
51	A Probabilistic Approach to Perceptual Grouping. Computer Vision and Image Understanding, 1996, 64, 399-419.	3.0	15
52	Visualâ€“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
53	Motion primitives and 3-D path planning for fast flight through a forest. , 2013, , .		13
54	Trajectory planning for a bat-like flapping wing robot. , 2019, , .		13

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55	Observer design for stochastic nonlinear systems using contraction analysis. , 2012, , .		12
56	A distributed robust convergence algorithm for multi-robot systems in the presence of faulty robots. , 2015, , .		12
57	Momentum-Aware Trajectory Optimization and Control for Agile Quadrupedal Locomotion. IEEE Robotics and Automation Letters, 2022, 7, 7755-7762.	3.3	12
58	Motion Planning Strategy for Finding an Object with a Mobile Manipulator in Three-Dimensional Environments. Advanced Robotics, 2011, 25, 1627-1650.	1.1	11
59	GRSTAPS: Graphically Recursive Simultaneous Task Allocation, Planning, and Scheduling. International Journal of Robotics Research, 2022, 41, 232-256.	5.8	11
60	Planning desired center of Mass and zero moment point trajectories for bipedal locomotion. , 2015, , .		10
61	Maintaining strong mutual visibility of an evader moving over the reduced visibility graph. Autonomous Robots, 2016, 40, 395-423.	3.2	10
62	Non-Uniform Robot Densities in Vibration Driven Swarms Using Phase Separation Theory. , 2019, , .		10
63	Skeleton-Based Human Action Recognition by Pose Specificity and Weighted Voting. International Journal of Social Robotics, 2019, 11, 219-234.	3.1	10
64	Exploiting domain knowledge in planning for uncertain robot systems modeled as POMDPs. , 2010, , .		9
65	Inversion-based gait generation for humanoid robots. , 2015, , .		9
66	Nonlinear Flight Controller Synthesis of a Bat-Inspired Micro Aerial Vehicle. , 2016, , .		9
67	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
68	A Study of a Class of Vibration-Driven Robots: Modeling, Analysis, Control and Design of the Brushbot. , 2019, , .		9
69	Extending Riemmanian Motion Policies to a Class of Underactuated Wheeled-Inverted-Pendulum Robots. , 2020, , .		9
70	A Framework for Constructing Probability Distributions on the Space of Image Segmentations. Computer Vision and Image Understanding, 1995, 61, 203-230.	3.0	8
71	Customizing haptic and visual feedback for assistive humanâ€“robot interface and the effects on performance improvement. Robotics and Autonomous Systems, 2017, 91, 258-269.	3.0	8
72	Describing Robotic Bat Flight with Stable Periodic Orbits. Lecture Notes in Computer Science, 2017, , 394-405.	1.0	8

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73	Partial barrier coverage: Using game theory to optimize probability of undetected intrusion in polygonal environments. , 2008, , .		7
74	Monocular Vision based Navigation in GPS-Denied Riverine Environments. , 2011, , .		7
75	From optimal planning to visual servoing with limited FOV. , 2011, , .		7
76	Inertial-Aided Vision-Based Localization and Mapping in a Riverine Environment with Reflection Measurements. , 2013, , .		7
77	River segmentation for autonomous surface vehicle localization and river boundary mapping. Journal of Field Robotics, 2021, 38, 192-211.	3.2	7
78	Textured image segmentation. Image and Vision Computing, 1997, 15, 781-795.	2.7	6
79	Modelling search with a binary sensor utilizing self-conjugacy of the exponential family. , 2012, , .		6
80	A coupled oscillators-based control architecture for locomotory gaits. , 2014, , .		6
81	Omnidirectional-vision-based estimation for containment detection of a robotic mower. , 2015, , .		6
82	Reducing Versatile Bat Wing Conformations to a 1-DoF Machine. Lecture Notes in Computer Science, 2017, , 181-192.	1.0	6
83	Safety Compliant Control for Robotic Manipulator With Task and Input Constraints. IEEE Robotics and Automation Letters, 2022, 7, 10659-10664.	3.3	6
84	Hyper-particle filtering for stochastic systems. , 2008, , .		5
85	Robust optimal deployment of mobile sensor networks. , 2012, , .		5
86	Worst-case performance of a mobile sensor network under individual sensor failure. , 2013, , .		5
87	A distributed optimal strategy for rendezvous of multi-robots with random node failures. , 2014, , .		5
88	A Sampling Hyperbelief Optimization Technique for Stochastic Systems. Springer Tracts in Advanced Robotics, 2009, , 217-231.	0.3	5
89	Hierarchical Planning for Heterogeneous Multi-Robot Routing Problems via Learned Subteam Performance. IEEE Robotics and Automation Letters, 2022, 7, 4464-4471.	3.3	5
90	GTGraffiti: Spray Painting Graffiti Art from Human Painting Motions with a Cable Driven Parallel Robot. , 2022, , .		5

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91	Editorial: Special Issue on Vision and Robotics, Parts I and II. International Journal of Computer Vision, 2007, 74, 217-218.	10.9	4
92	IMU-camera data fusion: Horizontal plane observation with explicit outlier rejection. , 2013, , .		4
93	Vision-based localization and mapping for an autonomous mower. , 2013, , .		4
94	TIE: Time-Informed Exploration for Robot Motion Planning. IEEE Robotics and Automation Letters, 2021, 6, 3585-3591.	3.3	4
95	Coarsely calibrated visual servoing of a mobile robot using a catadioptric vision system. , 2009, , .		3
96	Optimal double support zero moment point trajectories for bipedal locomotion. , 2016, , .		3
97	Real-Time Safety and Control of Robotic Manipulators with Torque Saturation in Operational Space. , 2021, , .		3
98	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
99	Optimum Spatially Constrained Turns for Agile Micro Aerial Vehicles. , 2013, , .		2
100	Modeling user's driving-characteristics in a steering task to customize a virtual fixture based on task-performance. , 2014, , .		2
101	Visual-inertial curve SLAM. , 2016, , .		2
102	Safe Optimal Control Under Parametric Uncertainties. IEEE Robotics and Automation Letters, 2020, 5, 5725-5731.	3.3	2
103	Adaptive Leader-Follower Control for Multi-Robot Teams with Uncertain Network Structure. , 2021, , .		2
104	Adaptively Robust Control Policy Synthesis Through Riemannian Motion Policies. , 2022, 6, 31-36.		2
105	Worst-case performance of rendezvous networks in the presence of adversarial nodes. , 2013, , .		1
106	Robust optimal deployment in mobile sensor networks with peer-to-peer communication. , 2014, , .		1
107	Sensor Coverage Control Using Robots Constrained to a Curve. , 2019, , .		1
108	Gradient Projection Methods for Constrained Image-based Visual Servo. Lecture Notes in Control and Information Sciences, 2010, , 253-274.	0.6	1

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109	Boundedness Approach to Gait Planning for the Flexible Linear Inverted Pendulum Model. Lecture Notes in Computer Science, 2017, , 58-70.	1.0	1
110	Development of a Scalable Monitoring System for Wheelchair Tilt-in-Space Usage. International Journal of Physical Medicine & Rehabilitation, 2013, 1, .	0.5	1
111	Multi-Attribute Utility Analysis in the Choice of Vision-Based Robot Controllers. International Journal of Optomechatronics, 2008, 2, 326-360.	3.3	0
112	Detecting intrusion faults in remotely controlled systems. , 2009, , .		0
113	The mathematical model and control of human-machine perceptual feedback system. , 2011, , .		0
114	The mathematical model and control of human-machine perceptual feedback system. , 2011, , .		0
115	Farewell Editorial. IEEE Transactions on Robotics, 2013, 29, 1069-1070.	7.3	0
116	Using the motion perceptibility measure to classify points of interest for visual-based AUV guidance in a reef ecosystem. , 2015, , .		0
117	Promoting Diversity and Justice: Our Challenge and Responsibility [President's Message]. IEEE Robotics and Automation Magazine, 2020, 27, 6-8.	2.2	0
118	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
119	Intensifying Integrity: Prioritizing Values Within Tech and Academia [President's Message]. IEEE Robotics and Automation Magazine, 2021, 28, 8-167.	2.2	0
120	Mass Estimation of a Moving Object Through Minimal Manipulation Interaction. , 2021, , .		0
121	Distributed Optimal Control Framework based on Coordinate Descent Optimization for Multi-Agent Robots. , 2021, , .		0
122	A Framework for Reactive Motion and Sensing Planning: A Critical Events-Based Approach. Lecture Notes in Computer Science, 2005, , 990-1000.	1.0	0
123	Feedback Whole-Body Control of Wheeled Inverted Pendulum Humanoids Using Operational Space. , 2020, , .		0