

Jay A Farrell

List of Publications by Year in descending order

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145
papers

7,893
citations

94269

37
h-index

88477

70
g-index

150
all docs

150
docs citations

150
times ranked

4355
citing authors

#	ARTICLE	IF	CITATIONS
1	Command Filtered Backstepping. IEEE Transactions on Automatic Control, 2009, 54, 1391-1395.	3.6	879
2	Command Filtered Adaptive Backstepping. IEEE Transactions on Control Systems Technology, 2012, 20, 566-580.	3.2	593
3	Qualitative analysis of neural networks. IEEE Transactions on Circuits and Systems, 1989, 36, 229-243.	0.9	309
4	Backstepping-Based Flight Control with Adaptive Function Approximation. Journal of Guidance, Control, and Dynamics, 2005, 28, 1089-1102.	1.6	303
5	Cooperative Control of Multiple Nonholonomic Mobile Agents. IEEE Transactions on Automatic Control, 2008, 53, 1434-1448.	3.6	282
6	Distributed Continuous-Time Optimization: Nonuniform Gradient Gains, Finite-Time Convergence, and Convex Constraint Set. IEEE Transactions on Automatic Control, 2017, 62, 2239-2253.	3.6	262
7	Information Weighted Consensus Filters and Their Application in Distributed Camera Networks. IEEE Transactions on Automatic Control, 2013, 58, 3112-3125.	3.6	244
8	Autonomous Underwater Vehicle Navigation. IEEE Journal of Oceanic Engineering, 2010, 35, 663-678.	2.1	228
9	Filament-Based Atmospheric Dispersion Model to Achieve Short Time-Scale Structure of Odor Plumes. Environmental Fluid Mechanics, 2002, 2, 143-169.	0.7	227
10	Moth-inspired chemical plume tracing on an autonomous underwater vehicle. , 2006, 22, 292-307.		211
11	Associative memories via artificial neural networks. Control Systems Magazine, 1990, 10, 6-17.	0.1	200
12	Chemical Plume Tracing via an Autonomous Underwater Vehicle. IEEE Journal of Oceanic Engineering, 2005, 30, 428-442.	2.1	187
13	Chemical Plume Source Localization. IEEE Transactions on Systems, Man, and Cybernetics, 2006, 36, 1068-1080.	5.5	173
14	Real-Time Computer Vision/DGPS-Aided Inertial Navigation System for Lane-Level Vehicle Navigation. IEEE Transactions on Intelligent Transportation Systems, 2012, 13, 899-913.	4.7	147
15	Plume mapping via hidden markov methods. IEEE Transactions on Systems, Man, and Cybernetics, 2003, 33, 850-863.	5.5	139
16	Decentralized cooperative control of multiple nonholonomic dynamic systems with uncertainty. Automatica, 2009, 45, 706-710.	3.0	130
17	Tracking and Activity Recognition Through Consensus in Distributed Camera Networks. IEEE Transactions on Image Processing, 2010, 19, 2564-2579.	6.0	128
18	Adaptive observer backstepping control using neural networks. IEEE Transactions on Neural Networks, 2001, 12, 1103-1112.	4.8	127

#	ARTICLE	IF	CITATIONS
19	Tracking of Fluid-Advection Odor Plumes: Strategies Inspired by Insect Orientation to Pheromone. Adaptive Behavior, 2001, 9, 143-170.	1.1	120
20	Real-time differential carrier phase GPS-aided INS. IEEE Transactions on Control Systems Technology, 2000, 8, 709-721.	3.2	114
21	Stability and approximator convergence in nonparametric nonlinear adaptive control. IEEE Transactions on Neural Networks, 1998, 9, 1008-1020.	4.8	112
22	Wavelet-based system identification for nonlinear control. IEEE Transactions on Automatic Control, 1999, 44, 412-417.	3.6	111
23	Collaborative Sensing in a Distributed PTZ Camera Network. IEEE Transactions on Image Processing, 2012, 21, 3282-3295.	6.0	106
24	A synthesis procedure for Hopfield's continuous-time associative memory. IEEE Transactions on Circuits and Systems, 1990, 37, 877-884.	0.9	102
25	Composite adaptive control with locally weighted statistical learning. Neural Networks, 2005, 18, 71-90.	3.3	93
26	Analysis and synthesis techniques for Hopfield type synchronous discrete time neural networks with application to associative memory. IEEE Transactions on Circuits and Systems, 1990, 37, 1356-1366.	0.9	86
27	Distributed Multi-Target Tracking and Data Association in Vision Networks. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2016, 38, 1397-1410.	9.7	84
28	High-Precision Vehicle Navigation in Urban Environments Using an MEM's IMU and Single-Frequency GPS Receiver. IEEE Transactions on Intelligent Transportation Systems, 2016, 17, 2854-2867.	4.7	79
29	Formation control of multiple underactuated surface vessels. IET Control Theory and Applications, 2008, 2, 1077-1085.	1.2	78
30	Using learning techniques to accommodate unanticipated faults. IEEE Control Systems, 1993, 13, 40-49.	1.0	75
31	Distributed Camera Networks. IEEE Signal Processing Magazine, 2011, 28, 20-31.	4.6	74
32	Tracking control of a manipulator under uncertainty by FUZZY P+ID controller. Fuzzy Sets and Systems, 2001, 122, 125-137.	1.6	67
33	Inertial Navigation Aiding by Stationary Updates. IEEE Transactions on Intelligent Transportation Systems, 2012, 13, 235-248.	4.7	67
34	Magnetometer and differential carrier phase GPS-aided INS for advanced vehicle control. IEEE Transactions on Automation Science and Engineering, 2003, 19, 269-282.	2.4	62
35	Nonlinear adaptive control using networks of piecewise linear approximators. IEEE Transactions on Neural Networks, 2000, 11, 390-401.	4.8	60
36	Differential GPS reference station algorithm-design and analysis. IEEE Transactions on Control Systems Technology, 2000, 8, 519-531.	3.2	57

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37	Carrier Phase GPS-Aided INS-Based Vehicle Lateral Control. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2003, 125, 339-353.	0.9	51
38	A Generalized Kalman Consensus Filter for wide-area video networks. , 2011, , .		51
39	Information weighted consensus. , 2012, , .		49
40	Design of an enhanced hybrid fuzzy P+ID controller for a mechanical manipulator. IEEE Transactions on Systems, Man, and Cybernetics, 2001, 31, 938-945.	5.5	42
41	High-precision lane-level road map building for vehicle navigation. , 2010, , .		41
42	Persistence of excitation conditions in passive learning control. Automatica, 1997, 33, 699-703.	3.0	36
43	Decentralized camera network control using game theory. , 2008, , .		34
44	Command filtered backstepping. , 2008, , .		34
45	Underwater Inertial Navigation With Long Baseline Transceivers: A Near-Real-Time Approach. IEEE Transactions on Control Systems Technology, 2016, 24, 240-251.	3.2	34
46	Information Consensus for Distributed Multi-target Tracking. , 2013, , .		32
47	Adaptive control for output feedback nonlinear systems in the presence of modeling errors. Automatica, 2002, 38, 1761-1767.	3.0	28
48	Centimeter-Accuracy Smoothed Vehicle Trajectory Estimation. IEEE Intelligent Transportation Systems Magazine, 2013, 5, 121-135.	2.6	28
49	Two antennas GPS-aided INS for attitude determination. IEEE Transactions on Control Systems Technology, 2003, 11, 905-918.	3.2	26
50	Consensus of multiple nonholonomic systems. , 2008, , .		26
51	Tracking Control for Nonaffine Systems: A Self-Organizing Approximation Approach. IEEE Transactions on Neural Networks and Learning Systems, 2012, 23, 223-235.	7.2	26
52	Longitudinal Flight-Path Control Using Online Function Approximation. Journal of Guidance, Control, and Dynamics, 2003, 26, 885-897.	1.6	22
53	Distributed optimization with the consideration of adaptivity and finite-time convergence. , 2014, , .		22
54	H/sub \hat{z} / identification of multivariable systems by tangential interpolation methods. IEEE Transactions on Automatic Control, 1996, 41, 1822-1828.	3.6	21

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55	Computationally Efficient Carrier Integer Ambiguity Resolution in Multiepoch GPS/INS: A Common-Position-Shift Approach. IEEE Transactions on Control Systems Technology, 2016, 24, 1541-1556.	3.2	21
56	Self-Organizing Approximation-Based Control for Higher Order Systems. IEEE Transactions on Neural Networks, 2007, 18, 1220-1231.	4.8	20
57	Locally Weighted Online Approximation-Based Control for Nonaffine Systems. IEEE Transactions on Neural Networks, 2007, 18, 1709-1724.	4.8	18
58	Indoor localization based on LEDs. , 2011, , .		18
59	2D LIDAR Aided INS for vehicle positioning in urban environments. , 2013, , .		18
60	Traffic sign detection, state estimation, and identification using onboard sensors. , 2013, , .		17
61	Differential GPS aided Inertial Navigation: a Contemplative Realtime Approach. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 8959-8964.	0.4	17
62	GPS-INS outlier detection & elimination using a sliding window filter. , 2017, , .		17
63	On performance evaluation in online approximation for control. IEEE Transactions on Neural Networks, 1998, 9, 1001-1007.	4.8	16
64	Decentralized cooperative control of multiple nonholonomic systems. , 2007, , .		16
65	Issues in the implementation of an indirect adaptive control system. IEEE Journal of Oceanic Engineering, 1993, 18, 311-318.	2.1	14
66	Opportunistic Image Acquisition of Individual and Group Activities in a Distributed Camera Network. IEEE Transactions on Circuits and Systems for Video Technology, 2017, 27, 664-672.	5.6	14
67	Distributed Time-Varying Optimization With State-Dependent Gains: Algorithms and Experiments. IEEE Transactions on Control Systems Technology, 2022, 30, 416-425.	3.2	14
68	Land vehicle control using a command filtered backstepping approach. , 2008, , .		13
69	Localized adaptive bounds for approximation-based backstepping. Automatica, 2008, 44, 2607-2613.	3.0	12
70	Quaternion-based trajectory tracking control of VTOL-UAVs using command filtered backstepping. , 2013, , .		12
71	Distributed Constrained Optimization for Bayesian Opportunistic Visual Sensing. IEEE Transactions on Control Systems Technology, 2014, 22, 2302-2318.	3.2	12
72	A Computationally Efficient Algorithm for Training Recurrent Connectionist Networks. , 1992, , .		11

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73	Latency Compensation for Differential GPS. Navigation, Journal of the Institute of Navigation, 1997, 44, 99-107.	1.7	10
74	Observability analysis of an inertial navigation system with stationary updates. , 2011, , .		9
75	Navigation using linear photo detector arrays. , 2013, , .		9
76	Feature mapping and state estimation for highly automated vehicles. Journal of Control and Decision, 2015, 2, 1-25.	0.7	9
77	Joint Measurement and Trajectory Recovery in Visible Light Communication. IEEE Transactions on Control Systems Technology, 2017, 25, 247-261.	3.2	8
78	Advanced Vehicle State Estimation: A Tutorial and Comparative Study. IFAC-PapersOnLine, 2017, 50, 15971-15976.	0.5	8
79	Performance Specified State Estimation With Minimum Risk. , 2018, , .		8
80	AUV reactive planning: deepest point. , 2003, , .		7
81	Biologically inspired chemical plume tracing on an autonomous underwater vehicle. , 0, , .		7
82	A near-real time nonlinear state estimation approach with application to initialization of navigation systems. , 2011, , .		7
83	Autonomous Surface Vehicle Multistep Look-Ahead Measurement Location Planning for Optimal Localization of Underwater Acoustic Transponders. IEEE Transactions on Aerospace and Electronic Systems, 2019, 55, 2836-2849.	2.6	7
84	Initial Development and Testing of an Adaptive Mission Planner for a Small Unmanned Underwater Vehicle. , 2003, , .		7
85	Simulation and system identification of dynamic models for flocculation control. Water Science and Technology, 1998, 37, 181-192.	1.2	7
86	GPS-aided INS based control state calculation for AHS. , 2001, , .		6
87	Tracking control of multiple nonlinear systems via information interchange. , 2011, , .		6
88	Underwater vehicle near real time state estimation. , 2013, , .		6
89	Unifying behavior-based control design and hybrid stability theory. , 2009, , .		5
90	Consensus-based distributed estimation in camera networks. , 2012, , .		5

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91	GNSS/INS Integration. , 2017, , 811-840.		5
92	Robust GPS-INS Outlier Accommodation: A Soft-thresholded Optimal Estimator. IFAC-PapersOnLine, 2017, 50, 3574-3579.	0.5	5
93	Outlier Accommodation By Risk-Averse Performance-Specified Linear State Estimation. , 2018, , .		5
94	ECEF position accuracy and reliability in the presence of differential correction latency. , 2018, , .		5
95	Calibration of Multi-LIDAR Systems: Application to Bucket Wheel Reclaimers. IEEE Transactions on Control Systems Technology, 2020, 28, 2092-2103.	3.2	5
96	Outlier accommodation in moving-horizon state estimation: A risk-averse performance-specified approach. International Journal of Adaptive Control and Signal Processing, 2020, 34, 777-795.	2.3	5
97	Observability analysis of INS and lever-arm error states with CDGPS - Camera aiding. , 2010, , .		4
98	Optimization-based road curve fitting. , 2011, , .		4
99	Underwater inertial navigation with long base line transceivers: A Near-Real-Time approach. , 2013, , .		4
100	LED-based initialization and navigation. , 2013, , .		4
101	Distributed camera control via moving horizon Bayesian optimization. , 2014, , .		4
102	Earth-Centered Earth-Fixed (ECEF) Vehicle State Estimation Performance. , 2019, , .		4
103	Vehicle ECEF Position Accuracy and Reliability in the Presence of DGNSS Communication Latency. IEEE Intelligent Transportation Systems Magazine, 2020, , 0-0.	2.6	4
104	Optimal tracking control for unknown nonlinear systems based on locally weighted learning. , 2008, , .		3
105	Near-real-time GPS integer ambiguity resolution. , 2011, , .		3
106	Outlier accommodation for meter-level positioning: Risk-averse performance-specified state estimation. , 2018, , .		3
107	Optimal measurement location planning for localizing underwater transponders. , 2018, , .		3
108	Calculation of discrete-time process noise statistics for hybrid continuous/discrete-time applications. Optimal Control Applications and Methods, 1996, 17, 151-155.	1.3	2

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109	Self-organizing approximation for controllable nonaffine systems. , 2007, , .		2
110	Optimal Regulation of Unknown Nonlinear Systems Based on Locally Weighted Learning. , 2008, , .		2
111	Adaptive approximately optimal control of unknown nonlinear systems based on locally weighted learning. , 2009, , .		2
112	INS aided GPS integer ambiguity resolution. , 2011, , .		2
113	Self-organizing approximation based control with ∞ transient performance guarantees. , 2011, , .		2
114	An algorithm to recover an LED path. , 2014, , .		2
115	A Society of Volunteers [President's Message]. IEEE Control Systems, 2014, 34, 10-11.	1.0	2
116	Roadway feature mapping from point cloud data: A graph-based clustering approach. , 2017, , .		2
117	Outlier Accommodation By Risk-Averse Performance-Specified Nonlinear State Estimation: GNSS Aided INS. , 2018, , .		2
118	Performance-Specified Moving-Horizon State Estimation With Minimum Risk. , 2018, , .		2
119	Outlier Accommodation in Nonlinear State Estimation: A Risk-Averse Performance- Specified Approach. IEEE Transactions on Control Systems Technology, 2021, 29, 567-579.	3.2	2
120	Persistent Observation of Dynamic Scenes in an Active Camera Network. , 2011, , 259-271.		2
121	State Estimation. , 2005, , 1049-1059.		1
122	Robust Adaptive Approximation Based Backstepping via Localized Adaptive Bounding. , 2006, , 381-411.		1
123	Formation control of multiple mobile robots with uncertainty. , 2008, , .		1
124	Hybrid Control Design Applied in Land Vehicle Behavior-Based Switching Controller. , 2008, , .		1
125	Distributed control of multiple wheeled mobile robots. , 2011, , .		1
126	Self-organized locally linear optimal tracking control for unknown nonlinear systems. , 2011, , .		1

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127	High reliability integer ambiguity resolution of 6DOF RTK GPS/INS. , 2014, , .		1
128	LED path recovery in a moving sensor. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 8965-8970.	0.4	1
129	"Prediction Is Very Difficult, Especially About the Future" (Niels Bohr) [President's Message]. IEEE Control Systems, 2014, 34, 10-13.	1.0	1
130	Human action prediction for human robot interaction. , 2016, , .		1
131	Bucket Wheel Reclaimer Calibration. , 2019, , .		1
132	Using PPP Information to Implement a Global Real-Time Virtual Network DGNSS Approach. IEEE Transactions on Vehicular Technology, 2022, 71, 10337-10349.	3.9	1
133	Vehicle Autonomy and Intelligent Control: Where are we and what lies ahead?. , 2008, , .		0
134	Tracking control of nonaffine systems: A self-organizing approximation approach. , 2008, , .		0
135	Consensus of multiple uncertain mechanical systems and its application in cooperative control of mobile robots. , 2008, , .		0
136	Self-organizing locally linear optimal regulation for unknown nonlinear systems. , 2011, , .		0
137	IEEE CDC 2012 in Maui, Hawai'i [CDC Preview]. IEEE Control Systems, 2012, 32, 89-95.	1.0	0
138	Capturing high fidelity images in PTZ camera networks. , 2013, , .		0
139	51st IEEE Conference on Decision and Control, 2012 [Conference Reports]. IEEE Control Systems, 2013, 33, 73-84.	1.0	0
140	Impact of Control [President's Message]. IEEE Control Systems, 2014, 34, 10-16.	1.0	0
141	Control Ambassadors [President's Message]. IEEE Control Systems, 2014, 34, 12-98.	1.0	0
142	The Perspective One Year Later [President's Message]. IEEE Control Systems, 2014, 34, 12-14.	1.0	0
143	Real-time Time-varying Surface Reconstruction and Edge Point Extraction for Bucket Wheel Reclaimers. , 2019, , .		0
144	Outlier Accommodation in Sensor Rich Environments: Moving Horizon Risk-Averse Performance-Specified State Estimation. , 2019, , .		0

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145	Online Approximation-Based Aircraft State Estimation. , 2003, , 215-232.		0