Naomi Ehrich Leonard

List of Publications by Year
in descending order

128 papers	6,558 citations	109321 35 h-index	88630 70 g-index
130 all docs	130 docs citations	130 times ranked	3658 citing authors

#	Article	IF	Citations
1	Collective Motion, Sensor Networks, and Ocean Sampling. Proceedings of the IEEE, 2007, 95, 48-74.	21.3	730
2	Stabilization of Planar Collective Motion: All-to-All Communication. IEEE Transactions on Automatic Control, 2007, 52, 811-824.	5.7	421
3	Stabilization of Planar Collective Motion With Limited Communication. IEEE Transactions on Automatic Control, 2008, 53, 706-719.	5.7	373
4	Multi-AUV Control and Adaptive Sampling in Monterey Bay. IEEE Journal of Oceanic Engineering, 2006, 31, 935-948.	3.8	364
5	Uninformed Individuals Promote Democratic Consensus in Animal Groups. Science, 2011, 334, 1578-1580.	12.6	354
6	Coordinated control of an underwater glider fleet in an adaptive ocean sampling field experiment in Monterey Bay. Journal of Field Robotics, 2010, 27, 718-740.	6.0	258
7	Autonomous rigid body attitude synchronization. Automatica, 2009, 45, 572-577.	5.0	251
8	Cooperative Filters and Control for Cooperative Exploration. IEEE Transactions on Automatic Control, 2010, 55, 650-663.	5.7	219
9	Cooperative Control for Ocean Sampling: The Glider Coordinated Control System. IEEE Transactions on Control Systems Technology, 2008, 16, 735-744.	5.2	201
10	Oscillator Models and Collective Motion. IEEE Control Systems, 2007, 27, 89-105.	0.8	185
11	Stability of a bottom-heavy underwater vehicle. Automatica, 1997, 33, 331-346.	5.0	172
12	Control of coordinated patterns for ocean sampling. International Journal of Control, 2007, 80, 1186-1199.	1.9	172
13	Robustness of noisy consensus dynamics with directed communication. , 2010, , .		124
14	The Equivalence of Controlled Lagrangian and Controlled Hamiltonian Systems. ESAIM - Control, Optimisation and Calculus of Variations, 2002, 8, 393-422.	1.3	116
15	Coordinated patterns of unit speed particles on a closed curve. Systems and Control Letters, 2007, 56, 397-407.	2.3	113
16	A Mechanism for Value-Sensitive Decision-Making. PLoS ONE, 2013, 8, e73216.	2.5	102
17	Real-Time Feedback-Controlled Robotic Fish for Behavioral Experiments With Fish Schools. Proceedings of the IEEE, 2012, 100, 150-163.	21.3	98
18	Starling Flock Networks Manage Uncertainty in Consensus at Low Cost. PLoS Computational Biology, 2013, 9, e1002894.	3.2	98

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19	Stability and drift of underwater vehicle dynamics: Mechanical systems with rigid motion symmetry. Physica D: Nonlinear Phenomena, 1997, 105, 130-162.	2.8	95
20	Decision versus compromise for animal groups in motion. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 227-232.	7.1	82
21	Nonlinear gliding stability and control for vehicles with hydrodynamic forcing. Automatica, 2008, 44, 1240-1250.	5.0	72
22	Stable Synchronization of Mechanical System Networks. SIAM Journal on Control and Optimization, 2008, 47, 661-683.	2.1	71
23	Modeling Human Decision Making in Generalized Gaussian Multiarmed Bandits. Proceedings of the IEEE, 2014, 102, 544-571.	21.3	63
24	Stabilization of symmetric formations to motion around convex loops. Systems and Control Letters, 2008, 57, 209-215.	2.3	57
25	Multiagent Decision-Making Dynamics Inspired by Honeybees. IEEE Transactions on Control of Network Systems, 2018, 5, 793-806.	3.7	57
26	Information centrality and optimal leader selection in noisy networks. , 2013, , .		55
27	Controlled Lagrangians and the stabilization of Euler-Poincaré mechanical systems. International Journal of Robust and Nonlinear Control, 2001, 11, 191-214.	3.7	54
28	Controlled Lagrangian Systems with Gyroscopic Forcing and Dissipation. European Journal of Control, 2004, 10, 478-496.	2.6	54
29	Pursuit, herding and evasion: A three-agent model of caribou predation. , 2013, , .		54
30	Dynamics of the Kirchhoff equations I: Coincident centers of gravity and buoyancy. Physica D: Nonlinear Phenomena, 1998, 118, 311-342.	2.8	53
31	Dynamics of Decision Making in Animal Group Motion. Journal of Nonlinear Science, 2009, 19, 399-435.	2.1	53
32	Joint Centrality Distinguishes Optimal Leaders in Noisy Networks. IEEE Transactions on Control of Network Systems, 2016, 3, 366-378.	3.7	52
33	Nonuniform coverage control on the line. IEEE Transactions on Automatic Control, 2013, 58, 2743-2755.	5.7	51
34	Routing strategies for underwater gliders. Deep-Sea Research Part II: Topical Studies in Oceanography, 2009, 56, 173-187.	1.4	48
35	Hopf Bifurcations and Limit Cycles in Evolutionary Network Dynamics. SIAM Journal on Applied Dynamical Systems, 2012, 11, 1754-1784.	1.6	44
36	Collective Decision-Making in Ideal Networks: The Speed-Accuracy Tradeoff. IEEE Transactions on Control of Network Systems, 2014, 1, 121-132.	3.7	42

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37	Parameter Estimation in Softmax Decision-Making Models With Linear Objective Functions. IEEE Transactions on Automation Science and Engineering, 2016, 13, 54-67.	5.2	42
38	A New Notion of Effective Resistance for Directed Graphs—Part I: Definition and Properties. IEEE Transactions on Automatic Control, 2016, 61, 1727-1736.	5.7	39
39	Regulation of harvester ant foraging as a closed-loop excitable system. PLoS Computational Biology, 2018, 14, e1006200.	3.2	35
40	The nonlinear feedback dynamics of asymmetric political polarization. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	33
41	Can Post-Error Dynamics Explain Sequential Reaction Time Patterns?. Frontiers in Psychology, 2012, 3, 213.	2.1	32
42	Distributed cooperative decision-making in multiarmed bandits: Frequentist and Bayesian algorithms. , 2016, , .		32
43	Towards Human–Robot Teams: Model-Based Analysis of Human Decision Making in Two-Alternative Choice Tasks With Social Feedback. Proceedings of the IEEE, 2012, 100, 751-775.	21.3	31
44	Multi-agent system dynamics: Bifurcation and behavior of animal groups. Annual Reviews in Control, 2014, 38, 171-183.	7.9	31
45	Mixed mode oscillations and phase locking in coupled FitzHugh-Nagumo model neurons. Chaos, 2019, 29, 033105.	2.5	31
46	Distributed cooperative decision making in multi-agent multi-armed bandits. Automatica, 2021, 125, 109445.	5.0	30
47	Stabilization of collective motion in three dimensions: A consensus approach. , 2007, , .		28
48	Integrating human and robot decision-making dynamics with feedback: Models and convergence analysis. , 2008, , .		28
49	Adaptive network dynamics and evolution of leadership in collective migration. Physica D: Nonlinear Phenomena, 2014, 267, 81-93.	2.8	26
50	Optimal evasive strategies for multiple interacting agents with motion constraints. Automatica, 2018, 94, 26-34.	5.0	26
51	Stabilization of Three-Dimensional Collective Motion. Communications in Information and Systems, 2008, 8, 473-500.	0.5	26
52	Nonlinear Opinion Dynamics With Tunable Sensitivity. IEEE Transactions on Automatic Control, 2023, 68, 1415-1430.	5.7	26
53	Information Centrality and Ordering of Nodes for Accuracy in Noisy Decision-Making Networks. IEEE Transactions on Automatic Control, 2016, 61, 1040-1045.	5.7	25
54	On distributed cooperative decision-making in multiarmed bandits. , 2016, , .		24

#	ARTICLE	IF	CITATIONS
55	Symmetry and Reduction for Coordinated Rigid Bodies. European Journal of Control, 2006, 12, 176-194.	2.6	23
56	On optimal foraging and multi-armed bandits. , 2013, , .		23
57	Convergence in human decision-making dynamics. Systems and Control Letters, 2010, 59, 87-97.	2.3	21
58	Multi-Agent System Dynamics: Bifurcation and Behavior of Animal Groups. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 307-317.	0.4	20
59	Surveillance in an abruptly changing world via multiarmed bandits. , 2014, , .		19
60	A martingale analysis of first passage times of time-dependent Wiener diffusion models. Journal of Mathematical Psychology, 2017, 77, 94-110.	1.8	19
61	Ecological and behavioral mechanisms of density‐dependent habitat expansion in a recovering African ungulate population. Ecological Monographs, 2021, 91, e01476.	5.4	19
62	Nonuniform Line Coverage From Noisy Scalar Measurements. IEEE Transactions on Automatic Control, 2015, 60, 1975-1980.	5.7	18
63	Optimal leader selection for controllability and robustness in multi-agent networks. , 2016, , .		18
64	Rearranging trees for robust consensus. , 2011, , .		17
65	In the dance studio: Analysis of human flocking. , 2012, , .		16
66	Interaction Dynamics: The Interface of Humans and Smart Machines [Scanning the Issue]. Proceedings of the IEEE, 2012, 100, 567-570.	21.3	16
67	Bistability and Resurgent Epidemics in Reinfection Models. , 2018, 2, 290-295.		15
68	Limit cycles in replicator-mutator network dynamics. , 2011, , .		14
69	Dynamics of pursuit and evasion in a heterogeneous herd. , 2014, , .		14
70	Coordinated Speed Oscillations in Schooling Killifish Enrich Social Communication. Journal of Nonlinear Science, 2015, 25, 1077-1109.	2.1	14
71	A New Notion of Effective Resistance for Directed Graphs—Part II: Computing Resistances. IEEE Transactions on Automatic Control, 2016, 61, 1737-1752.	5.7	14
72	Heterogeneous animal group models and their group-level alignment dynamics: An equation-free approach. Journal of Theoretical Biology, 2007, 246, 100-112.	1.7	13

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73	Formation shape and orientation control using projected collinear tensegrity structures. , 2009, , .		13
74	Using Network Dynamical Influence to Drive Consensus. Scientific Reports, 2016, 6, 26318.	3.3	12
75	Analysis and control of agreement and disagreement opinion cascades. Swarm Intelligence, 2021, 15, 47-82.	2.2	12
76	Spatial models of bistability in biological collectives. , 2007, , .		11
77	Cooperative Vehicle Environmental Monitoring. , 2016, , 441-458.		11
78	Heterogeneous Stochastic Interactions for Multiple Agents in a Multi-armed Bandit Problem. , 2019, , .		11
79	Adaptive Susceptibility and Heterogeneity in Contagion Models on Networks. IEEE Transactions on Automatic Control, 2021, 66, 581-594.	5.7	10
80	Coupled stochastic differential equations and collective decision making in the Two-Alternative Forced-Choice task. , 2010, , .		9
81	A comparative study of drift diffusion and linear ballistic accumulator models in a reward maximization perceptual choice task. Frontiers in Neuroscience, 2014, 8, 148.	2.8	9
82	Investigating group behavior in dance: an evolutionary dynamics approach. , 2016, , .		9
83	Social Imitation in Cooperative Multiarmed Bandits: Partition-Based Algorithms with Strictly Local Information. , 2018, , .		9
84	Cluster Synchronization of Diffusively Coupled Nonlinear Systems: A Contraction-Based Approach. Journal of Nonlinear Science, 2020, 30, 2235-2257.	2.1	9
85	A Dynamic Observation Strategy for Multi-agent Multi-armed Bandit Problem. , 2020, , .		9
86	Tuning Cooperative Behavior in Games With Nonlinear Opinion Dynamics. , 2022, 6, 2030-2035.		9
87	Animalâ€borne wireless network: Remote imaging of community ecology. Journal of Field Robotics, 2019, 36, 1141-1165.	6.0	8
88	A Continuous Threshold Model of Cascade Dynamics. , 2019, , .		8
89	A Collaborative Portal for Ocean Observatories. , 2006, , .		7
90	Alternating spatial patterns for coordinated group motion. , 2007, , .		7

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91	Heterogeneous Explore-Exploit Strategies on Multi-Star Networks. , 2021, 5, 1603-1608.		7
92	Mechanics and nonlinear control: making underwater vehicles ride and glide. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1998, 31, 1-6.	0.4	6
93	Cooperative learning in multi-agent systems from intermittent measurements. , 2013, , .		6
94	In the Dance Studio: An Art and Engineering Exploration of Human Flocking. , 2014, , 27-49.		6
95	Cooperative Kalman filters for cooperative exploration. , 2008, , .		5
96	Nonuniform coverage and cartograms. , 2010, , .		5
97	Steady-state distributions for human decisions in two-alternative choice tasks. , 2010, , .		5
98	Towards optimization of a human-inspired heuristic for solving explore-exploit problems. , 2012, , .		5
99	Synchronization bound for networks of nonlinear oscillators. , 2016, , .		5
100	Bio-inspired decision-making and control: From honeybees and neurons to network design. , 2017, , .		5
101	On the linear threshold model for diffusion of innovations in multiplex social networks. , 2017, , .		5
102	Nonuniform coverage control on the line. , 2011, , .		4
103	Symmetric coverage of dynamic mapping error for mobile sensor networks. , 2011, , .		4
104	The content and availability of information affects the evolution of social-information gathering strategies. Theoretical Ecology, 2016, 9, 455-476.	1.0	4
105	Social decision-making driven by artistic explore–exploit tension. Interdisciplinary Science Reviews, 2019, 44, 55-81.	1.4	4
106	Influence Spread in the Heterogeneous Multiplex Linear Threshold Model. IEEE Transactions on Control of Network Systems, 2022, 9, 1080-1091.	3.7	4
107	Stabilization laws for collective motion in three dimensions. , 2007, , .		3
108	Satisficing in Gaussian bandit problems. , 2014, , .		3

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109	On distributed linear filtering with noisy communication. , 2017, , .		3
110	An agent-based framework for bio-inspired, value-sensitive decision-making * *This research has been supported in part by NSF grant CMMI-1635056, ONR grant N00014-14-1-0635, and UNAM-DGAPA grant PAPIIT RA105816. IFAC-PapersOnLine, 2017, 50, 8238-8243.	0.9	3
111	Active Control and Sustained Oscillations in actSIS Epidemic Dynamics. IFAC-PapersOnLine, 2020, 53, 807-812.	0.9	3
112	Switching Transformations for Decentralized Control of Opinion Patterns in Signed Networks: Application to Dynamic Task Allocation. , 2022, 6, 3463-3468.		3
113	Effective sensing regions and connectivity of agents undergoing periodic relative motions. , 2008, , .		2
114	On the trajectories and coordination of steered particles with time-periodic speed profiles. , 2009, , .		2
115	The role of social feedback in steady-state performance of human decision making for two-alternative choice tasks. , 2010, , .		2
116	Distributed nonuniform coverage with limited scalar measurements. , 2012, , .		2
117	Node certainty in collective decision making. , 2012, , .		2
118	Feedback Controlled Bifurcation of Evolutionary Dynamics with Generalized Fitness. , 2018, , .		2
119	Control of Agreement and Disagreement Cascades with Distributed Inputs. , 2021, , .		2
120	Algorithmic models of human decision making in Gaussian multi-armed bandit problems. , 2014, , .		1
121	Control of Networks of Underwater Vehicles. , 2014, , 1-8.		1
122	On robustness and leadership in Markov switching consensus networks. , 2017, , .		1
123	Minimum-Time Trajectories for Steered Agent With Constraints on Speed, Lateral Acceleration, and Turning Rate. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2018, 140, .	1.6	1
124	Control of Networks of Underwater Vehicles. , 2021, , 351-356.		1
125	On the speed-accuracy tradeoff in collective decision making. , 2013, , .		0
126	Control Theory: A Mathematical Perspective on Cyber-Physical Systems. Oberwolfach Reports, 2015, 12, 597-659.	0.0	0

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127	Corrections to â€œSatisficing in Multiarmed Bandit Problemsâ€•[Aug 17 3788-3803]. IEEE Transactions on Automatic Control, 2021, 66, 476-478.	5.7	0
128	Distributed Bandits: Probabilistic Communication on d-regular Graphs. , 2021, , .		0