

Soummya Kar

List of Publications by Year in descending order

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177
papers

6,672
citations

94433

37
h-index

76900

74
g-index

178
all docs

178
docs citations

178
times ranked

4447
citing authors

#	ARTICLE	IF	CITATIONS
1	Gossip Algorithms for Distributed Signal Processing. Proceedings of the IEEE, 2010, 98, 1847-1864.	21.3	659
2	Distributed Consensus Algorithms in Sensor Networks: Quantized Data and Random Link Failures. IEEE Transactions on Signal Processing, 2010, 58, 1383-1400.	5.3	352
3	Distributed Parameter Estimation in Sensor Networks: Nonlinear Observation Models and Imperfect Communication. IEEE Transactions on Information Theory, 2012, 58, 3575-3605.	2.4	327
4	Consensus + Innovations Approach for Distributed Multiagent Coordination in a Microgrid. IEEE Transactions on Smart Grid, 2015, 6, 1893-1903.	9.0	274
5	Fully Distributed State Estimation for Wide-Area Monitoring Systems. IEEE Transactions on Smart Grid, 2012, 3, 1154-1169.	9.0	253
6	Cooperative Control of Distributed Energy Storage Systems in a Microgrid. IEEE Transactions on Smart Grid, 2015, 6, 238-248.	9.0	222
7	Toward Distributed/Decentralized DC Optimal Power Flow Implementation in Future Electric Power Systems. IEEE Transactions on Smart Grid, 2018, 9, 2574-2594.	9.0	204
8	Distributed robust economic dispatch in power systems: A consensus & innovations approach. , 2012, , .		203
9	Distributed State Estimation and Energy Management in Smart Grids: A Consensus+Innovations Approach. IEEE Journal on Selected Topics in Signal Processing, 2014, 8, 1022-1038.	10.8	191
10	Convergence Rate Analysis of Distributed Gossip (Linear Parameter) Estimation: Fundamental Limits and Tradeoffs. IEEE Journal on Selected Topics in Signal Processing, 2011, 5, 674-690.	10.8	187
11	Coordinated Data-Injection Attack and Detection in the Smart Grid: A Detailed Look at Enriching Detection Solutions. IEEE Signal Processing Magazine, 2012, 29, 106-115.	5.6	187
12	A Framework for Structural Input/Output and Control Configuration Selection in Large-Scale Systems. IEEE Transactions on Automatic Control, 2016, 61, 303-318.	5.7	173
13	Consensus + innovations distributed inference over networks: cooperation and sensing in networked systems. IEEE Signal Processing Magazine, 2013, 30, 99-109.	5.6	150
14	DILAND: An Algorithm for Distributed Sensor Localization With Noisy Distance Measurements. IEEE Transactions on Signal Processing, 2010, 58, 1940-1947.	5.3	139
15	Kalman Filtering With Intermittent Observations: Weak Convergence to a Stationary Distribution. IEEE Transactions on Automatic Control, 2012, 57, 405-420.	5.7	120
16	\mathcal{Q} -Learning: A Collaborative Distributed Strategy for Multi-Agent Reinforcement Learning Through m Consensus + m Innovations. IEEE Transactions on Signal Processing, 2013, 61, 1848-1862.	5.3	112
17	Dynamic Attack Detection in Cyber-Physical Systems With Side Initial State Information. IEEE Transactions on Automatic Control, 2017, 62, 4618-4624.	5.7	106
18	Finite-time distributed consensus through graph filters. , 2014, , .		79

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19	Optimal Attack Strategies Subject to Detection Constraints Against Cyber-Physical Systems. IEEE Transactions on Control of Network Systems, 2018, 5, 1157-1168.	3.7	79
20	Distributed Localization: A Linear Theory. Proceedings of the IEEE, 2018, 106, 1204-1223.	21.3	79
21	Topology for Distributed Inference on Graphs. IEEE Transactions on Signal Processing, 2008, 56, 2609-2613.	5.3	77
22	Risk-Limiting Economic Dispatch for Electricity Markets With Flexible Ramping Products. IEEE Transactions on Power Systems, 2016, 31, 1990-2003.	6.5	74
23	On connectivity, observability, and stability in distributed estimation. , 2010, , .		69
24	Decentralized Stochastic Optimization and Machine Learning: A Unified Variance-Reduction Framework for Robust Performance and Fast Convergence. IEEE Signal Processing Magazine, 2020, 37, 102-113.	5.6	69
25	Resilient Distributed Estimation: Sensor Attacks. IEEE Transactions on Automatic Control, 2019, 64, 3772-3779.	5.7	67
26	Resilient Distributed Estimation Through Adversary Detection. IEEE Transactions on Signal Processing, 2018, 66, 2455-2469.	5.3	64
27	Distributed Linear Parameter Estimation: Asymptotically Efficient Adaptive Strategies. SIAM Journal on Control and Optimization, 2013, 51, 2200-2229.	2.1	62
28	Empirical Centroid Fictitious Play: An Approach for Distributed Learning in Multi-Agent Games. IEEE Transactions on Signal Processing, 2015, 63, 3888-3901.	5.3	59
29	Minimum cost input/output design for large-scale linear structural systems. Automatica, 2016, 68, 384-391.	5.0	57
30	Cyber-Physical Attacks With Control Objectives. IEEE Transactions on Automatic Control, 2018, 63, 1418-1425.	5.7	56
31	MATCHA: Speeding Up Decentralized SGD via Matching Decomposition Sampling. , 2019, , .		56
32	On the complexity of the constrained input selection problem for structural linear systems. Automatica, 2015, 62, 193-199.	5.0	54
33	The Internet of Things: Secure Distributed Inference. IEEE Signal Processing Magazine, 2018, 35, 64-75.	5.6	52
34	Distributed stochastic optimization with gradient tracking over strongly-connected networks. , 2019, , .		51
35	An intertemporal decision framework for electrochemical energy storage management. Nature Energy, 2018, 3, 404-412.	39.5	50
36	Distributed Holistic Framework for Smart City Infrastructures: Tale of Interdependent Electrified Transportation Network and Power Grid. IEEE Access, 2019, 7, 157535-157554.	4.2	50

#	ARTICLE	IF	CITATIONS
37	Distributed Average Consensus in Sensor Networks with Random Link Failures. , 2007, , .		48
38	Utility-Scale Portable Energy Storage Systems. Joule, 2021, 5, 379-392.	24.0	47
39	A structured systems approach for optimal actuator-sensor placement in linear time-invariant systems. , 2013, , .		41
40	Variance-Reduced Decentralized Stochastic Optimization With Accelerated Convergence. IEEE Transactions on Signal Processing, 2020, 68, 6255-6271.	5.3	41
41	Distributed Kalman Filtering Over Massive Data Sets: Analysis Through Large Deviations of Random Riccati Equations. IEEE Transactions on Information Theory, 2015, 61, 1351-1372.	2.4	40
42	Higher Dimensional Consensus: Learning in Large-Scale Networks. IEEE Transactions on Signal Processing, 2010, 58, 2836-2849.	5.3	39
43	Agent-Based Distributed Security Constrained Optimal Power Flow. IEEE Transactions on Smart Grid, 2018, 9, 1118-1130.	9.0	39
44	A Fully Distributed Cooperative Charging Approach for Plug-In Electric Vehicles. IEEE Transactions on Smart Grid, 2018, 9, 3507-3518.	9.0	39
45	The robust minimal controllability problem. Automatica, 2017, 82, 261-268.	5.0	35
46	Composability and controllability of structural linear time-invariant systems: Distributed verification. Automatica, 2017, 78, 123-134.	5.0	34
47	Computing Linear Transformations With Unreliable Components. IEEE Transactions on Information Theory, 2017, 63, 3729-3756.	2.4	34
48	On Best-Response Dynamics in Potential Games. SIAM Journal on Control and Optimization, 2018, 56, 2734-2767.	2.1	33
49	Cyber-physical systems: Dynamic sensor attacks and strong observability. , 2015, , .		32
50	Information flow for security in control systems. , 2016, , .		31
51	Distributed Kalman Filtering With Quantized Sensing State. IEEE Transactions on Signal Processing, 2015, 63, 5180-5193.	5.3	30
52	Using smart devices for system-level management and control in the smart grid: A reinforcement learning framework. , 2012, , .		29
53	The economic end of life of electrochemical energy storage. Applied Energy, 2020, 273, 115151.	10.1	28
54	An Improved Convergence Analysis for Decentralized Online Stochastic Non-Convex Optimization. IEEE Transactions on Signal Processing, 2021, 69, 1842-1858.	5.3	28

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55	Distributed Constrained Recursive Nonlinear Least-Squares Estimation: Algorithms and Asymptotics. IEEE Transactions on Signal and Information Processing Over Networks, 2016, , 1-1.	2.8	24
56	Distributed Sequential Detection for Gaussian Shift-in-Mean Hypothesis Testing. IEEE Transactions on Signal Processing, 2016, 64, 89-103.	5.3	24
57	Resilient Distributed Parameter Estimation With Heterogeneous Data. IEEE Transactions on Signal Processing, 2019, 67, 4918-4933.	5.3	24
58	S-ADDOPT: Decentralized Stochastic First-Order Optimization Over Directed Graphs. , 2021, 5, 953-958.		23
59	Topology for Global Average Consensus. , 2006, , .		22
60	Distributed Average Consensus in Sensor Networks with Random Link Failures and Communication Channel Noise. Conference Record of the Asilomar Conference on Signals, Systems and Computers, 2007, , .	0.0	22
61	Asynchronous distributed approach for DC Optimal Power Flow. , 2015, , .		21
62	Minimum cost constrained input-output and control configuration co-design problem: A structural systems approach. , 2015, , .		21
63	Distributed Inertial Best-Response Dynamics. IEEE Transactions on Automatic Control, 2018, 63, 4294-4300.	5.7	21
64	Smart Inverter for Voltage Regulation: Physical and Market Implementation. IEEE Transactions on Power Systems, 2018, 33, 6181-6192.	6.5	21
65	Revisiting Normalized Gradient Descent: Fast Evasion of Saddle Points. IEEE Transactions on Automatic Control, 2019, 64, 4818-4824.	5.7	19
66	A benders decomposition approach to corrective security constrained OPF with power flow control devices. , 2013, , .		18
67	Role of communication on the convergence rate of fully distributed DC optimal power flow. , 2014, , .		18
68	Asymptotically Efficient Distributed Estimation With Exponential Family Statistics. IEEE Transactions on Information Theory, 2014, 60, 4811-4831.	2.4	18
69	Sensor Placement for Outage Identifiability in Power Distribution Networks. IEEE Transactions on Smart Grid, 2020, 11, 1996-2013.	9.0	18
70	Linear Theory for Self-Localization: Convexity, Barycentric Coordinates, and Cayley’s Menger Determinants. IEEE Access, 2015, 3, 1326-1339.	4.2	17
71	Compressive Sensing-Based Optimal Reactive Power Control of a Multi-Area Power System. IEEE Access, 2017, 5, 23576-23588.	4.2	17
72	Distributed average consensus in sensor networks with quantized inter-sensor communication. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	16

#	ARTICLE	IF	CITATIONS
73	Distributed learning in large-scale multi-agent games: A modified fictitious play approach. , 2012, , .		16
74	Cyber physical attacks constrained by control objectives. , 2016, , .		16
75	Attack Resilient Distributed Estimation: A Consensus+Innovations Approach. , 2018, , .		16
76	Compressive Sensing and Morphology Singular Entropy-Based Real-Time Secondary Voltage Control of Multiarea Power Systems. IEEE Transactions on Industrial Informatics, 2019, 15, 3796-3807.	11.3	16
77	Power System Dispatch With Marginal Degradation Cost of Battery Storage. IEEE Transactions on Power Systems, 2021, 36, 3552-3562.	6.5	16
78	Recursive Distributed Detection for Composite Hypothesis Testing: Nonlinear Observation Models in Additive Gaussian Noise. IEEE Transactions on Information Theory, 2017, 63, 4797-4828.	2.4	15
79	Distributed Outage Detection in Power Distribution Networks. IEEE Transactions on Smart Grid, 2020, 11, 5124-5137.	9.0	15
80	Fast Decentralized Nonconvex Finite-Sum Optimization with Recursive Variance Reduction. SIAM Journal on Optimization, 2022, 32, 1-28.	2.0	15
81	Convergence analysis of the information matrix in Gaussian Belief Propagation. , 2017, , .		14
82	Optimal Sensor Placement for Topology Identification in Smart Power Grids. , 2019, , .		14
83	Can a noisy encoder be used to communicate reliably?. , 2014, , .		13
84	Fully distributed DC-OPF approach for power flow control. , 2015, , .		13
85	Cyber physical attacks with control objectives and detection constraints. , 2016, , .		12
86	Learning-Based Distributed Detection-Estimation in Sensor Networks With Unknown Sensor Defects. IEEE Transactions on Signal Processing, 2017, 65, 130-145.	5.3	12
87	CIRFE : A Distributed Random Fields Estimator. IEEE Transactions on Signal Processing, 2018, 66, 4980-4995.	5.3	12
88	Minimum number of information gatherers to ensure full observability of a dynamic social network: A structural systems approach. , 2014, , .		11
89	Reputation-Based Ranking Systems and Their Resistance to Bribery. , 2017, , .		11
90	Push-SAGA: A Decentralized Stochastic Algorithm With Variance Reduction Over Directed Graphs. , 2022, 6, 1202-1207.		11

#	ARTICLE	IF	CITATIONS
91	A mixed time-scale algorithm for distributed parameter estimation : Nonlinear observation models and imperfect communication. , 2009, , .		10
92	Fault-tolerant distributed logistic regression using unreliable components. , 2016, , .		10
93	Fault-tolerant parallel linear filtering using compressive sensing. , 2016, , .		10
94	Structurally Observable Distributed Networks of Agents Under Cost and Robustness Constraints. IEEE Transactions on Signal and Information Processing Over Networks, 2018, 4, 236-247.	2.8	10
95	ON GRAPH CONVOLUTION FOR GRAPH CNNs. , 2018, , .		10
96	Selective strong structural minimum-cost resilient co-design for regular descriptor linear systems. Automatica, 2019, 102, 80-85.	5.0	10
97	Distributed linear parameter estimation in sensor networks: Convergence properties. , 2008, , .		9
98	On the behavior of responsive loads in the presence of DFACTS devices. , 2012, , .		9
99	A framework for actuator placement in large scale power systems: Minimal strong structural controllability. , 2013, , .		9
100	Enhanced secondary frequency control via distributed peer-to-peer communication. , 2016, , .		9
101	A fully distributed approach for plug-in electric vehicle charging. , 2016, , .		9
102	Resilient Distributed Field Estimation. SIAM Journal on Control and Optimization, 2020, 58, 1429-1456.	2.1	9
103	Distributed localization and tracking with coordinated and uncoordinated motion models. , 2009, , .		8
104	Distributed estimation in sensor networks with imperfect model information: An adaptive learning-based approach. , 2012, , .		8
105	A model checking framework for linear time invariant switching systems using structural systems analysis. , 2013, , .		8
106	Distributed Quickest Detection in Sensor Networks via Two-Layer Large Deviation Analysis. IEEE Internet of Things Journal, 2018, 5, 930-942.	8.7	8
107	Outage Detection for Distribution Networks Using Limited Number of Power Flow Measurements. Journal of Modern Power Systems and Clean Energy, 2020, 8, 315-324.	5.4	8
108	A Fast Randomized Incremental Gradient Method for Decentralized Nonconvex Optimization. IEEE Transactions on Automatic Control, 2022, 67, 5150-5165.	5.7	8

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109	Higher dimensional consensus algorithms in sensor networks. , 2009, , .		7
110	A functional approach to assessing flexible ramping products' impact on electricity market. , 2015, , .		7
111	Distributed cooperative charging for plug-in electric vehicles: A consensus+innovations approach. , 2016, , .		7
112	Single Sample Fictitious Play. IEEE Transactions on Automatic Control, 2017, 62, 6026-6031.	5.7	7
113	Resilient Distributed Estimation: Exponential Convergence Under Sensor Attacks. , 2018, , .		7
114	Moderate Deviations of a Random Riccati Equation. IEEE Transactions on Automatic Control, 2012, 57, 2250-2265.	5.7	6
115	Guest Editorial The Theory of Complex Systems With Applications to Smart Grid Operations. IEEE Transactions on Smart Grid, 2016, 7, 1949-1950.	9.0	6
116	Fully distributed corrective security constrained optimal power flow. , 2017, , .		6
117	Distributed voltage regulation in distribution power grids: Utilizing the photovoltaics inverters. , 2017, , .		6
118	Decentralized Zeroth-Order Constrained Stochastic Optimization Algorithms: Frankâ€™Wolfe and Variants With Applications to Black-Box Adversarial Attacks. Proceedings of the IEEE, 2020, 108, 1890-1905.	21.3	6
119	Optimal cost actuator/sensor placement for large scale linear time-invariant systems: A structured systems approach. , 2013, , .		5
120	Multilevel distributed approach for DC Optimal Power Flow. , 2015, , .		5
121	On the design of phase locked loop oscillatory neural networks: Mitigation of transmission delay effects. , 2016, , .		5
122	Rate Distortion for Lossy In-Network Linear Function Computation and Consensus: Distortion Accumulation and Sequential Reverse Water-Filling. IEEE Transactions on Information Theory, 2017, 63, 5179-5206.	2.4	5
123	Distributed Gradient Descent: Nonconvergence to Saddle Points and the Stable-Manifold Theorem. , 2019, , .		5
124	Promises of Fully Distributed Optimization for IoT-Based Smart City Infrastructures. Advances in Intelligent Systems and Computing, 2020, , 15-35.	0.6	5
125	A coordination-free distributed algorithm for simple assignment problems using randomized actions. , 2011, , .		4
126	Graph Codes for Distributed Instant Message Collection in an Arbitrary Noisy Broadcast Network. IEEE Transactions on Information Theory, 2017, , 1-1.	2.4	4

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127	Convergence analysis of belief propagation for pairwise linear Gaussian models. , 2017, , .		4
128	NON-ASYMPTOTIC RATES FOR COMMUNICATION EFFICIENT DISTRIBUTED ZEROth ORDER STRONGLY CONVEX OPTIMIZATION. , 2018, , .		4
129	Control of Parametric Games. , 2019, , .		4
130	Distributed Gradient Flow: Nonsmoothness, Nonconvexity, and Saddle Point Evasion. IEEE Transactions on Automatic Control, 2022, 67, 3949-3964.	5.7	4
131	Dynamic Median Consensus Over Random Networks. , 2021, , .		4
132	A linear iterative algorithm for distributed sensor localization. , 2008, , .		3
133	Distributed sequential detection for Gaussian binary hypothesis testing: Heterogeneous networks. , 2014, , .		3
134	A computationally efficient implementation of fictitious play in a distributed setting. , 2015, , .		3
135	Distributed Bayesian quickest change detection in sensor networks via large deviation analysis. , 2016, , .		3
136	Risk-limiting economic dispatch for electricity markets with flexible ramping products. , 2017, , .		3
137	Fast Temporal Path Localization on Graphs via Multiscale Viterbi Decoding. IEEE Transactions on Signal Processing, 2018, 66, 5588-5603.	5.3	3
138	Annealing for Distributed Global Optimization. , 2019, , .		3
139	A random dynamical systems approach to filtering in large-scale networks. , 2010, , .		2
140	LMP-based real time pricing for optimal capacity planning with maximal wind power integration. , 2012, , .		2
141	Mean-centric equilibrium: An equilibrium concept for learning in large-scale games. , 2013, , .		2
142	Information dissipation in noiseless lossy in-network function computation. , 2015, , .		2
143	Computing linear transforms with unreliable components. , 2016, , .		2
144	Distributed recursive composite hypothesis testing: Imperfect communication. , 2016, , .		2

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145	Fast path localization on graphs via multiscale Viterbi decoding. , 2017, , .		2
146	Distributed convergence verification for Gaussian belief propagation. , 2017, , .		2
147	Distributed empirical risk minimization over directed graphs. , 2019, , .		2
148	Resistive-Aware Linear Approximations for Solving the Optimal Power Flow Problem for Distribution Networks. , 2019, , .		2
149	Regular potential games. Games and Economic Behavior, 2020, 124, 432-453.	0.8	2
150	A Decentralized Variance-Reduced Method for Stochastic Optimization Over Directed Graphs. , 2021, , .		2
151	Distributed sensor localization using barycentric coordinates. , 2009, , .		1
152	Sample path large deviations for the randomly sampled continuous-discrete Kalman filter. , 2010, , .		1
153	On a consistent procedure for distributed recursive nonlinear least-squares estimation. , 2013, , .		1
154	On asynchronous implementations of fictitious play for distributed learning. , 2015, , .		1
155	Distributed generalized likelihood ratio tests: Fundamental limits and tradeoffs. , 2016, , .		1
156	Distributed sequence prediction: A consensus+innovations approach. , 2016, , .		1
157	Dist-Hedge: A partial information setting based distributed non-stochastic sequence prediction algorithm. , 2017, , .		1
158	Best-Response Dynamics in Continuous Potential Games: Non-Convergence to Saddle Points. , 2018, , .		1
159	Large Deviations for Products of Non-I.i.d. Stochastic Matrices with Application to Distributed Detection. , 2018, , .		1
160	Game Theoretic Learning. , 2018, , 209-235.		1
161	Learning Transition Statistics in Networks of Interacting Agents. , 2019, , .		1
162	Resilient Distributed Recovery of Large Fields. , 2020, , .		1

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163	Cascading verification initiated by switching attacks through compromised digital relays. IET Smart Grid, 0, , .	2.2	1
164	Resilient decentralized optimization in multi-agent networks with data injection attack. , 2021, , .		1
165	Large deviations for many server networks with long range dependent and batch arrivals. , 2008, , .		0
166	Asymptotic noise analysis of high dimensional consensus. , 2009, , .		0
167	Designing the parameters of high dimensional consensus: Multi-objective optimization and pareto-optimality. , 2010, , .		0
168	Sensor placement for real-time dynamic state estimation in power systems: Structural systems approach. , 2014, , .		0
169	Game-theoretic learning in a distributed-information setting: Distributed convergence to mean-centric equilibria. , 2014, , .		0
170	Strong convergence to mixed equilibria in fictitious play. , 2014, , .		0
171	Adaptive social networks: Strong attractors and emergence and downfall of leaders. , 2016, , .		0
172	Queue-based broadcast gossip algorithm for consensus. , 2016, , .		0
173	Learning pure-strategy Nash equilibria in networked multi-agent systems with uncertainty. , 2016, , .		0
174	Thermodynamic limit of interacting particle systems over dynamical networks. , 2016, , .		0
175	Computationally efficient learning in large-scale games: Sampled fictitious play revisited. , 2016, , .		0
176	Real-time Singular Value Decomposition based Load Frequency Control of Multi-area Power System. , 2018, , .		0
177	Secure Analytics and Resilient Inference for the Internet of Things. , 2019, , .		0