

Shalabh Bhatnagar

List of Publications by Year in descending order

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Version: 2024-02-01

149
papers

2,365
citations

361413

20
h-index

289244

40
g-index

154
all docs

154
docs citations

154
times ranked

1480
citing authors

#	ARTICLE	IF	CITATIONS
1	Natural actor-critic algorithms. <i>Automatica</i> , 2009, 45, 2471-2482.	5.0	336
2	Fast gradient-descent methods for temporal-difference learning with linear function approximation. , 2009, , .		199
3	Reinforcement Learning With Function Approximation for Traffic Signal Control. <i>IEEE Transactions on Intelligent Transportation Systems</i> , 2011, 12, 412-421.	8.0	198
4	Memory-Based Deep Reinforcement Learning for Obstacle Avoidance in UAV With Limited Environment Knowledge. <i>IEEE Transactions on Intelligent Transportation Systems</i> , 2021, 22, 107-118.	8.0	122
5	A time aggregation approach to Markov decision processes. <i>Automatica</i> , 2002, 38, 929-943.	5.0	115
6	Two-timescale simultaneous perturbation stochastic approximation using deterministic perturbation sequences. <i>ACM Transactions on Modeling and Computer Simulation</i> , 2003, 13, 180-209.	0.8	70
7	Multi-agent reinforcement learning for traffic signal control. , 2014, , .		55
8	Adaptive multivariate three-timescale stochastic approximation algorithms for simulation based optimization. <i>ACM Transactions on Modeling and Computer Simulation</i> , 2005, 15, 74-107.	0.8	53
9	Reinforcement learning algorithm for non-stationary environments. <i>Applied Intelligence</i> , 2020, 50, 3590-3606.	5.3	51
10	Reinforcement learning with average cost for adaptive control of traffic lights at intersections. , 2011, , .		42
11	Q-Learning Based Energy Management Policies for a Single Sensor Node with Finite Buffer. <i>IEEE Wireless Communications Letters</i> , 2013, 2, 82-85.	5.0	42
12	A two Timescale Stochastic Approximation Scheme for Simulation-Based Parametric Optimization. <i>Probability in the Engineering and Informational Sciences</i> , 1998, 12, 519-531.	0.8	41
13	Two-timescale algorithms for simulation optimization of hidden Markov models. <i>IIE Transactions</i> , 2001, 33, 245-258.	2.1	39
14	Adaptive Newton-based multivariate smoothed functional algorithms for simulation optimization. <i>ACM Transactions on Modeling and Computer Simulation</i> , 2007, 18, 1-35.	0.8	39
15	An actor-critic algorithm with function approximation for discounted cost constrained Markov decision processes. <i>Systems and Control Letters</i> , 2010, 59, 760-766.	2.3	31
16	Multiscale Stochastic Approximation for Parametric Optimization of Hidden Markov Models. <i>Probability in the Engineering and Informational Sciences</i> , 1997, 11, 509-522.	0.8	29
17	Threshold Tuning Using Stochastic Optimization for Graded Signal Control. <i>IEEE Transactions on Vehicular Technology</i> , 2012, 61, 3865-3880.	6.3	28
18	Optimal structured feedback policies for ABR flow control using two-timescale SPSA. <i>IEEE/ACM Transactions on Networking</i> , 2001, 9, 479-491.	3.8	27

#	ARTICLE	IF	CITATIONS
19	A Simultaneous Perturbation Stochastic Approximation-Based Actor-Critic Algorithm for Markov Decision Processes. <i>IEEE Transactions on Automatic Control</i> , 2004, 49, 592-598.	5.7	25
20	An efficient ad recommendation system for TV programs. <i>Multimedia Systems</i> , 2008, 14, 73-87.	4.7	25
21	Adaptive mean queue size and its rate of change: queue management with random dropping. <i>Telecommunication Systems</i> , 2017, 65, 281-295.	2.5	25
22	An Online Actor-Critic Algorithm with Function Approximation for Constrained Markov Decision Processes. <i>Journal of Optimization Theory and Applications</i> , 2012, 153, 688-708.	1.5	23
23	Nonextensive triangle equality and other properties of Tsallis relative-entropy minimization. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2006, 361, 124-138.	2.6	21
24	Partition based pattern synthesis technique with efficient algorithms for nearest neighbor classification. <i>Pattern Recognition Letters</i> , 2006, 27, 1714-1724.	4.2	20
25	New algorithms of the Q-learning type. <i>Automatica</i> , 2008, 44, 1111-1119.	5.0	20
26	Fusion of multiple approximate nearest neighbor classifiers for fast and efficient classification. <i>Information Fusion</i> , 2004, 5, 239-250.	19.1	19
27	Overlap pattern synthesis with an efficient nearest neighbor classifier. <i>Pattern Recognition</i> , 2005, 38, 1187-1195.	8.1	18
28	Stochastic approximation algorithms for constrained optimization via simulation. <i>ACM Transactions on Modeling and Computer Simulation</i> , 2011, 21, 1-22.	0.8	18
29	Energy Sharing for Multiple Sensor Nodes With Finite Buffers. <i>IEEE Transactions on Communications</i> , 2015, 63, 1811-1823.	7.8	18
30	A stability criterion for two timescale stochastic approximation schemes. <i>Automatica</i> , 2017, 79, 108-114.	5.0	18
31	Adaptive System Optimization Using Random Directions Stochastic Approximation. <i>IEEE Transactions on Automatic Control</i> , 2017, 62, 2223-2238.	5.7	17
32	Simulation-Based Optimization Algorithms for Finite-Horizon Markov Decision Processes. <i>Simulation</i> , 2008, 84, 577-600.	1.8	16
33	A Generalization of the Borkar-Meyn Theorem for Stochastic Recursive Inclusions. <i>Mathematics of Operations Research</i> , 2017, 42, 648-661.	1.3	16
34	Learning Active Spine Behaviors for Dynamic and Efficient Locomotion in Quadruped Robots. , 2019, , .		16
35	A Discrete Parameter Stochastic Approximation Algorithm for Simulation Optimization. <i>Simulation</i> , 2005, 81, 757-772.	1.8	14
36	Actor-critic algorithms for hierarchical Markov decision processes. <i>Automatica</i> , 2006, 42, 637-644.	5.0	14

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37	Decentralized learning for traffic signal control. , 2015, , .		14
38	Analysis of Gradient Descent Methods With Nondiminishing Bounded Errors. IEEE Transactions on Automatic Control, 2018, 63, 1465-1471.	5.7	14
39	The Borkarâ€œMeyn theorem for asynchronous stochastic approximations. Systems and Control Letters, 2011, 60, 472-478.	2.3	13
40	Novel Sensor Scheduling Scheme for Intruder Tracking in Energy Efficient Sensor Networks. IEEE Wireless Communications Letters, 2018, 7, 712-715.	5.0	13
41	Two Time-Scale Stochastic Approximation with Controlled Markov Noise and Off-Policy Temporal-Difference Learning. Mathematics of Operations Research, 2018, 43, 130-151.	1.3	13
42	A stochastic approximation approach to active queue management. Telecommunication Systems, 2018, 68, 89-104.	2.5	13
43	Stochastic Algorithms for Discrete Parameter Simulation Optimization. IEEE Transactions on Automation Science and Engineering, 2011, 8, 780-793.	5.2	12
44	Reinforcement Learning Based Algorithms for Average Cost Markov Decision Processes. Discrete Event Dynamic Systems: Theory and Applications, 2007, 17, 23-52.	1.5	11
45	Scalable Performance Tuning of Hadoop MapReduce: A Noisy Gradient Approach. , 2017, , .		11
46	Stability of Stochastic Approximations With â€œControlled Markovâ€œNoise and Temporal Difference Learning. IEEE Transactions on Automatic Control, 2019, 64, 2614-2620.	5.7	11
47	Realizing Learned Quadruped Locomotion Behaviors through Kinematic Motion Primitives. , 2019, , .		11
48	Robust optimization of Random Early Detection. Telecommunication Systems, 2006, 33, 291-316.	2.5	10
49	A probabilistic constrained nonlinear optimization framework to optimize RED parameters. Performance Evaluation, 2009, 66, 81-104.	1.2	10
50	An online prediction algorithm for reinforcement learning with linear function approximation using cross entropy method. Machine Learning, 2018, 107, 1385-1429.	5.4	10
51	Ant Colony Optimization Algorithms for Shortest Path Problems. Lecture Notes in Computer Science, 2009, , 37-44.	1.3	10
52	Optimal Threshold Policies for Admission Control in Communication Networks via Discrete Parameter Stochastic Approximation. Telecommunication Systems, 2005, 29, 9-31.	2.5	9
53	A proof of convergence of the B-RED and P-RED algorithms for random early detection. IEEE Communications Letters, 2009, 13, 809-811.	4.1	9
54	An efficient algorithm for scheduling in bluetooth piconets and scatternets. Wireless Networks, 2010, 16, 1799-1816.	3.0	9

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55	A Convex Analytic Framework for Ergodic Control of Semi-Markov Processes. Mathematics of Operations Research, 1995, 20, 923-936.	1.3	8
56	Smoothed Functional Algorithms for Stochastic Optimization Using q -Gaussian Distributions. ACM Transactions on Modeling and Computer Simulation, 2014, 24, 1-26.	0.8	8
57	Stochastic recursive inclusions with non-additive iterate-dependent Markov noise. Stochastics, 2018, 90, 330-363.	1.1	8
58	Design, Development and Experimental Realization of A Quadrupedal Research Platform: Stoch. , 2019, , .		8
59	Stochastic Recursive Inclusions in Two Timescales with Nonadditive Iterate-Dependent Markov Noise. Mathematics of Operations Research, 2020, 45, 1405-1444.	1.3	8
60	Novel First Order Bayesian Optimization with an Application to Reinforcement Learning. Applied Intelligence, 2021, 51, 1565-1579.	5.3	8
61	A novel Q-learning algorithm with function approximation for constrained Markov decision processes. , 2012, , .		7
62	Gradient-Based Adaptive Stochastic Search for Simulation Optimization Over Continuous Space. INFORMS Journal on Computing, 2018, 30, 154-167.	1.7	7
63	Efficient Adaptive Resource Provisioning for Cloud Applications using Reinforcement Learning. , 2019, , .		7
64	Successive Over-Relaxation Q -Learning. , 2020, 4, 55-60.		7
65	On measure-theoretic aspects of nonextensive entropy functionals and corresponding maximum entropy prescriptions. Physica A: Statistical Mechanics and Its Applications, 2007, 384, 758-774.	2.6	6
66	Optimal parameter trajectory estimation in parameterized SDEs. ACM Transactions on Modeling and Computer Simulation, 2009, 19, 1-27.	0.8	6
67	Stochastic Optimization for Adaptive Labor Staffing in Service Systems. Lecture Notes in Computer Science, 2011, , 487-494.	1.3	6
68	q -Gaussian based Smoothed Functional algorithms for stochastic optimization. , 2012, , .		6
69	Discrete parameter simulation optimization algorithms with applications to admission control with dependent service times. , 2007, , .		5
70	Gelfandâ€Yaglomâ€Perez theorem for generalized relative entropy functionals. Information Sciences, 2007, 177, 5707-5714.	6.9	5
71	An extension of Wickâ€™s theorem. Statistics and Probability Letters, 2008, 78, 2404-2407.	0.7	5
72	Optimal multi-layered congestion based pricing schemes for enhanced QoS. Computer Networks, 2012, 56, 1249-1262.	5.1	5

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73	Adaptive Smoothed Functional Algorithms for Optimal Staffing Levels in Service Systems. <i>Service Science</i> , 2013, 5, 29-55.	1.3	5
74	Feature Search in the Grassmanian in Online Reinforcement Learning. <i>IEEE Journal on Selected Topics in Signal Processing</i> , 2013, 7, 746-758.	10.8	5
75	Two timescale convergent Q-learning for sleep-scheduling in wireless sensor networks. <i>Wireless Networks</i> , 2014, 20, 2589-2604.	3.0	5
76	Simultaneous Perturbation Newton Algorithms for Simulation Optimization. <i>Journal of Optimization Theory and Applications</i> , 2015, 164, 621-643.	1.5	5
77	A randomized algorithm for continuous optimization. , 2016, , .		5
78	Stochastic recursive inclusion in two timescales with an application to the Lagrangian dual problem. <i>Stochastics</i> , 2016, 88, 1173-1187.	1.1	5
79	Actor-Critic Algorithms with Online Feature Adaptation. <i>ACM Transactions on Modeling and Computer Simulation</i> , 2016, 26, 1-26.	0.8	5
80	A Linearly Relaxed Approximate Linear Program for Markov Decision Processes. <i>IEEE Transactions on Automatic Control</i> , 2018, 63, 1185-1191.	5.7	5
81	Trajectory based Deep Policy Search for Quadrupedal Walking. , 2019, , .		5
82	General-sum stochastic games: Verifiability conditions for Nash equilibria. <i>Automatica</i> , 2012, 48, 2923-2930.	5.0	4
83	A simulation-based algorithm for optimal pricing policy under demand uncertainty. <i>International Transactions in Operational Research</i> , 2014, 21, 737-760.	2.7	4
84	Simulation optimization via gradient-based stochastic search. , 2014, , .		4
85	Multiscale Q-learning with linear function approximation. <i>Discrete Event Dynamic Systems: Theory and Applications</i> , 2016, 26, 477-509.	1.5	4
86	Random Directions Stochastic Approximation With Deterministic Perturbations. <i>IEEE Transactions on Automatic Control</i> , 2020, 65, 2450-2465.	5.7	4
87	Analysis of Stochastic Approximation Schemes With Set-Valued Maps in the Absence of a Stability Guarantee and Their Stabilization. <i>IEEE Transactions on Automatic Control</i> , 2020, 65, 1100-1115.	5.7	4
88	Asynchronous Stochastic Approximations With Asymptotically Biased Errors and Deep Multiagent Learning. <i>IEEE Transactions on Automatic Control</i> , 2021, 66, 3969-3983.	5.7	4
89	A Reinforcement Learning Based Algorithm for Finite Horizon Markov Decision Processes. , 2006, , .		3
90	Link route pricing for enhanced QoS. , 2007, , .		3

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91	An Optimized SDE Model for Slotted Aloha. IEEE Transactions on Communications, 2011, 59, 1502-1508.	7.8	3
92	Monte-Carlo estimation of time-dependent statistical characteristics of random dynamical systems. Applied Mathematical Modelling, 2011, 35, 3063-3079.	4.2	3
93	Quasi-Newton smoothed functional algorithms for unconstrained and constrained simulation optimization. Computational Optimization and Applications, 2017, 66, 533-556.	1.6	3
94	Deep Reinforcement Learning with Successive Over-Relaxation and its Application in Autoscaling Cloud Resources. , 2020, , .		3
95	Generalized Speedy Q-Learning. , 2020, 4, 524-529.		3
96	Stochastic Approximation With Iterate-Dependent Markov Noise Under Verifiable Conditions in Compact State Space With the Stability of Iterates Not Ensured. IEEE Transactions on Automatic Control, 2021, 66, 5941-5954.	5.7	3
97	An Efficient and Optimized Bluetooth Scheduling Algorithm for Piconets. , 2007, , 19-30.		3
98	Analyzing Approximate Value Iteration Algorithms. Mathematics of Operations Research, 2022, 47, 2138-2159.	1.3	3
99	SPSA Algorithms with Measurement Reuse. , 2006, , .		2
100	Parametrized Actor-Critic Algorithms for Finite-Horizon MDPs. Proceedings of the American Control Conference, 2007, , .	0.0	2
101	SPSA based feature relevance estimation for video retrieval. , 2008, , .		2
102	Optimized Policies for the Retransmission Probabilities in Slotted Aloha. Simulation, 2010, 86, 247-261.	1.8	2
103	Approximate Dynamic Programming with (min; +) linear function approximation for Markov decision processes. , 2014, , .		2
104	Newton-based stochastic optimization using $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si25.gif" display="inline" overflow="scroll" \rangle \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ -Gaussian smoothed functional algorithms. Automatica, 2014, 50, 2606-2614.	5.0	2
105	Adaptive sleep-wake control using reinforcement learning in sensor networks. , 2014, , .		2
106	A constrained optimization perspective on actor-critic algorithms and application to network routing. Systems and Control Letters, 2016, 92, 46-51.	2.3	2
107	An incremental off-policy search in a model-free Markov decision process using a single sample path. Machine Learning, 2018, 107, 969-1011.	5.4	2
108	Learning Stable Manoeuvres in Quadruped Robots from Expert Demonstrations. , 2020, , .		2

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109	On tight bounds for function approximation error in risk-sensitive reinforcement learning. Systems and Control Letters, 2021, 150, 104899.	2.3	2
110	Fuzzy Clustering Based Ad Recommendation for TV Programs. , 2007, , 175-184.		2
111	Smoothed Functional and Quasi-Newton Algorithms for Routing in Multi-stage Queueing Network with Constraints. Lecture Notes in Computer Science, 2011, , 175-186.	1.3	2
112	A Stochastic Approximation Algorithm for Quantile Estimation. Lecture Notes in Computer Science, 2015, , 311-319.	1.3	2
113	Properties of Kullback-Leibler cross-entropy minimization in nonextensive framework. , 2005, , .		1
114	An efficient and optimized bluetooth scheduling algorithm for scatternets. , 2008, , .		1
115	An actor critic algorithm based on Grassmanian search. , 2014, , .		1
116	Simultaneous perturbation methods for adaptive labor staffing in service systems. Simulation, 2015, 91, 432-455.	1.8	1
117	Necessary and sufficient conditions for optimality in constrained general sum stochastic games. Systems and Control Letters, 2015, 85, 8-15.	2.3	1
118	Multi-armed bandits based on a variant of Simulated Annealing. Indian Journal of Pure and Applied Mathematics, 2016, 47, 195-212.	0.5	1
119	A unified decision making framework for supply and demand management in microgrid networks. , 2018, , .		1
120	Auto-scaling Resources for Cloud Applications using Reinforcement learning. , 2019, , .		1
121	Learning-Based Resource Allocation in Industrial IoT Systems. , 2020, , .		1
122	Generalized Second-Order Value Iteration in Markov Decision Processes. IEEE Transactions on Automatic Control, 2022, 67, 4241-4247.	5.7	1
123	An Optimal Weighted-Average Congestion Based Pricing Scheme for Enhanced QoS. , 2007, , 135-145.		1
124	Two Timescale SPSA Algorithms for Rate-Based ABR Flow Control. Kluwer International Series in Engineering and Computer Science, 2000, , 367-378.	0.2	1
125	Stochastic Game Frameworks for Efficient Energy Management in Microgrid Networks. , 2020, , .		1
126	A Generalized Minimax Q-learning Algorithm for Two-Player Zero-Sum Stochastic Games. IEEE Transactions on Automatic Control, 2022, , 1-1.	5.7	1

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127	Robust Traffic Signal Timing Control using Multiagent Twin Delayed Deep Deterministic Policy Gradients. , 2022, , .		1
128	An optimal fuel-injection policy for performance enhancement in internal combustion engines. Sadhana - Academy Proceedings in Engineering Sciences, 1997, 22, 545-552.	1.3	0
129	<title>Rate-based ABR flow control using two timescale SPSA</title>. , 1999, , .		0
130	Two-timescale algorithms for simulation optimization of hidden Markov models. IIE Transactions, 2001, 33, 245-258.	2.1	0
131	A Four-Timescale Algorithm for Constrained Stochastic Optimization of RED. , 2006, , .		0
132	Network flow-control using asynchronous stochastic approximation. , 2007, , .		0
133	Solving MDPs using Two-timescale Simulated Annealing with Multiplicative Weights. Proceedings of the American Control Conference, 2007, , .	0.0	0
134	LMS-2: Towards an algorithm that is as cheap as LMS and almost as efficient as RLS. , 2009, , .		0
135	Improved Hessian estimation for adaptive random directions stochastic approximation. , 2016, , .		0
136	Scalable focussed entity resolution. , 2016, , .		0
137	An Incremental Fast Policy Search Using a Single Sample Path. Lecture Notes in Computer Science, 2017, , 3-10.	1.3	0
138	A model based search method for prediction in model-free Markov decision process. , 2017, , .		0
139	Bounds for off-policy prediction in reinforcement learning. , 2017, , .		0
140	Generalized Deterministic Perturbations For Stochastic Gradient Search. , 2018, , .		0
141	An Adaptive Sampling Algorithm for Policy Evaluation. , 2019, , .		0
142	An Online Sample-Based Method for Mode Estimation Using ODE Analysis of Stochastic Approximation Algorithms. , 2019, 3, 697-702.		0
143	Efficient Budget Allocation and Task Assignment in Crowdsourcing. , 2019, , .		0
144	Stochastic Approximation Trackers for Model-Based Search. , 2019, , .		0

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145	An Incremental Algorithm for Estimating Extreme Quantiles. , 2019, , .		0
146	An Adaptive and Incremental Approach to Quantile Estimation. , 2019, , .		0
147	Predictive and Prescriptive Analytics for Performance Optimization: Framework and a Case Study on a Large-Scale Enterprise System. , 2019, , .		0
148	Hierarchical Average Reward Policy Gradient Algorithms (Student Abstract). Proceedings of the AAAI Conference on Artificial Intelligence, 2020, 34, 13777-13778.	4.9	0
149	Dynamic Mirror Descent based Model Predictive Control for Accelerating Robot Learning. , 2022, , .		0