Peter E Caines

List of Publications by Year
in descending order

97 papers	3,150 citations	643344 15 h-index	340414 39 g-index
97 all docs	97 docs citations	97 times ranked	1060 citing authors

#	Article	IF	Citations
1	A class of hybrid LQG mean field games with state-invariant switching and stopping strategies. Automatica, 2022, 141, 110244.	3.0	2
2	On the Hybrid Minimum Principle: The Hamiltonian and Adjoint Boundary Conditions. IEEE Transactions on Automatic Control, 2021, 66, 1246-1253.	3.6	9
3	$epsilon$-Nash Equilibria for Major–Minor LQG Mean Field Games With Partial Observations of All Agents. IEEE Transactions on Automatic Control, 2021, 66, 2778-2786.	3.6	11
4	On bounded solutions of linear SDEs driven by convergent system matrix processes with Hurwitz limits. Stochastics, 2021, 93, 857-867.	0.6	0
5	Linear quadratic graphon field games. Communications in Information and Systems, 2021, 21, 341-369.	0.3	9
6	Subspace Decomposition for Graphon LQR: Applications to VLSNs of Harmonic Oscillators. IEEE Transactions on Control of Network Systems, 2021, 8, 576-586.	2.4	5
7	Graphon Mean Field Games and Their Equations. SIAM Journal on Control and Optimization, 2021, 59, 4373-4399.	1.1	22
8	Large Scale Systems and SIR Models: A Featured Graphon Approach. , 2021, , .		2
9	LQG Graphon Mean Field Games: Graphon Invariant Subspaces. , 2021, , .		10
10	The density evolution of the killed McKean–Vlasov process. Stochastics, 2020, 92, 642-657.	0.6	1
11	Graphon Control of Large-Scale Networks of Linear Systems. IEEE Transactions on Automatic Control, 2020, 65, 4090-4105.	3.6	40
12	Convex analysis for LQG systems with applications to major–minor LQG mean–field game systems. Systems and Control Letters, 2020, 142, 104734.	1.3	15
13	Mean Field Games with Partial Observation. SIAM Journal on Control and Optimization, 2019, 57, 2064-2091.	1.1	11
14	Belief Estimation by Agents in Major Minor LQG Mean Field Games. , 2019, , .		5
15	Graphon Mean Field Games and the GMFG Equations: Îμ-Nash Equilibria. , 2019, , .		19
16	Spectral Representations of Graphons in Very Large Network Systems Control. , 2019, , .		13
17	Optimal and Approximate Solutions to Linear Quadratic Regulation of a Class of Graphon Dynamical Systems. , 2019, , .		7
18	Stability of Receding Horizon Control with Smooth Value Functions. , 2018, , .		0

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19	Graphon Mean Field Games and the GMFG Equations. , 2018, , .		32
20	Graphon Linear Quadratic Regulation of Large-scale Networks of Linear Systems. , 2018, , .		11
21	Mean Field Game Systems with Common and Latent Processes. , 2018, , .		3
22	Mean Field Games. , 2018, , 345-372.		13
23	A Mean Field Game Computational Methodology for Decentralized Cellular Network Optimization. IEEE Transactions on Control Systems Technology, 2017, 25, 563-576.	3.2	26
24	On the Relation Between the Minimum Principle and Dynamic Programming for Classical and Hybrid Control Systems. IEEE Transactions on Automatic Control, 2017, 62, 4347-4362.	3.6	29
25	In-Block Controllability of Affine Systems on Polytopes. IEEE Transactions on Automatic Control, 2017, 62, 2950-2957.	3.6	7
26	$epsilon$-Nash Equilibria for Partially Observed LQG Mean Field Games With a Major Player. IEEE Transactions on Automatic Control, 2017, 62, 3225-3234.	3.6	32
27	Hybrid optimal control of an electric vehicle with a dual-planetary transmission. Nonlinear Analysis: Hybrid Systems, 2017, 25, 263-282.	2.1	17
28	An optimal execution problem in finance targeting the market trading speed: An MFG formulation. , 2017, , .		5
29	The control of arbitrary size networks of linear systems via graphon limits: An initial investigation. , 2017, , .		17
30	A mean field game â€" Hybrid systems approach to optimal execution problems in finance with stopping times. , 2017, , .		11
31	Mean Field Games. , 2017, , 1-28.		51
32	The Execution Problem in Finance with Major and Minor Traders: A Mean Field Game Formulation. Annals of the International Society of Dynamic Games, 2017, , 107-130.	0.3	5
33	On the stochastic Minimum Principle for hybrid systems. , 2016, , .		9
34	Mean Field Game Theory with a Partially Observed Major Agent. SIAM Journal on Control and Optimization, 2016, 54, 3174-3224.	1.1	36
35	On the Relation between the Hybrid Minimum Principle and Hybrid Dynamic Programming: a Linear Quadratic Example. IFAC-PapersOnLine, 2015, 48, 169-174.	0.5	5
36	Epsilon controllability of nonlinear systems on polytopes. , 2015, , .		9

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37	&#x03B5;-Nash equilibria for a partially observed mean field game with major player. , 2015, , .		8
38	Stability of composite thermodynamic systems with interconnection constraints. IET Control Theory and Applications, 2015, 9, 1629-1636.	1.2	12
39	On the generation of conditional densities in nonlinear filtering for McKean-Vlasov systems. , 2015, , .		0
40	On the minimum principle and dynamic programming for hybrid systems with low dimensional switching manifolds. , 2015, , .		6
41	εµ-Nash equilibria for partially observed LQG mean field games with major agent: Partial observations by all agents. , 2015, , .		9
42	Time Optimal Hybrid Minimum Principle and the Gear Changing Problem for Electric Vehicles. IFAC-PapersOnLine, 2015, 48, 187-192.	0.5	13
43	An estimation based allocation rule with super-linear regret and finite lock-on time for time-dependent multi-armed bandit processes. , 2015, , .		0
44	Hierarchical control of piecewise affine hybrid systems. , 2014, , .		8
45	On the relation between the Minimum Principle and Dynamic Programming for Hybrid systems. , 2014, , .		14
46	In-block controllability of affine systems on polytopes. , 2014, , .		12
47	The gear selection problem for electric vehicles: An optimal control formulation. , 2014, , .		5
48	Relaxed in-block controllability of affine systems on polytopes. , 2014, , .		5
49	Computational investigations of decentralized cellular network optimization via mean field control. , 2014, , .		4
50	Mean field games with partially observed major player and stochastic mean field. , 2014, , .		14
51	A Mean Field Game Synthesis of Initial Mean Consensus Problems: A Continuum Approach for Non-Gaussian Behavior$ $. IEEE Transactions on Automatic Control, 2014, 59, 449-455.	3.6	10
52	Preface: DGAA 2nd Special Issue on Mean Field Games. Dynamic Games and Applications, 2014, 4, 107-109.	1.1	4
53	Mean Field Estimation for Partially Observed LQG Systems with Major and Minor Agents. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 8705-8709.	0.4	18
54	On the Minimum Principle and Dynamic Programming for Hybrid Systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 9629-9634.	0.4	13

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55	$epsilon$-Nash Mean Field Game Theory for Nonlinear Stochastic Dynamical Systems with Major and Minor Agents. SIAM Journal on Control and Optimization, 2013, 51, 3302-3331.	1.1	138
56	On the Optimal Control of Impulsive Hybrid Systems on Riemannian Manifolds. SIAM Journal on Control and Optimization, 2013, 51, 3127-3153.	1.1	29
57	Preface: DGAA Special Issue on Mean Field Games. Dynamic Games and Applications, 2013, 3, 443-445.	1.1	10
58	Optimal Control for Hybrid Systems With Partitioned State Space. IEEE Transactions on Automatic Control, 2013, 58, 2131-2136.	3.6	15
59	On the optimal control of hybrid systems on Lie groups and the exponential gradient HMP algorithm. , 2013, , .		4
60	The Hybrid Minimum Principle in the presence of switching costs. , 2013, , .		15
61	On an extension of the Hybrid Minimum Principle to systems on Lie groups. , 2012, , .		0
62	Newton-Geodesic HMP algorithms for the optimization of hybrid systems and the geometric properties of hybrid value functions. , 2012, , .		0
63	Emergence of coalitions in mean field stochastic systems. , 2012, , .		1
64	Large scale real-time bidding in the smart grid: A mean field framework. , 2012, , .		15
65	On the stability of interconnected thermodynamic systems with heat and work exchange. , 2012, , .		1
66	Gradient geodesic and Newton geodesic HMP algorithms for the optimization of hybrid systems. Annual Reviews in Control, 2011, 35, 187-198.	4.4	15
67	Stability of interconnected thermodynamic systems. , 2011, , .		10
68	An evolution mean field equation system of initial mean consensus behaviour: A stability analysis. , 2011, , .		0
69	A solution to the initial mean consensus problem via a continuum based Mean Field control approach. , 2011, , .		5
70	Mean Field (NCE) stochastic control: Populations of major and egoist-altruist agents. , 2011, , .		3
71	Analysis of Quantized Double Auctions with Application to Competitive Electricity Markets. Infor, 2010, 48, 239-250.	0.5	10
72	Social dynamics in mean field LQG control: Egoistic and altruistic agents. , 2010, , .		7

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73	Optimality of adaption based Mean Field control laws in leader-follower stochastic collective dynamics. , 2010, , .		3
74	Gradient-geodesic HMP algorithms for the optimization of Hybrid systems based on the geometry of switching manifolds. , 2010, , .		15
75	Synthesis of Cucker-Smale type flocking via Mean Field stochastic control theory: Nash equilibria. , 2010, , .		7
76	An algorithm for discrete state sequence and trajectory optimization for hybrid systems with partitioned state space. , 2010, , .		13
77	The minimum principle for hybrid systems with partitioned state space and unspecified discrete state sequence. , 2010, , .		15
78	Control of Admission and Routing in Loss Networks: Hybrid Dynamic Programming Equations. IEEE Transactions on Automatic Control, 2010, 55, 350-366.	3.6	6
79	The NCE (Mean Field) Principle With Locality Dependent Cost Interactions. IEEE Transactions on Automatic Control, 2010, 55, 2799-2805.	3.6	66
80	A verification theorem for hybrid optimal control problem. , 2009, , .		7
81	Equilibria and convergence of auctions on networks. , 2009, , .		4
82	Correction to "On the Hybrid Optimal Control Problem: Theory and Algorithms". IEEE Transactions on Automatic Control, 2009, 54, 1440-1440.	3.6	11
83	Probabilistic analysis of the rapid convergence of a class of progressive second price auctions. , 2008, , .		5
84	A locality generalization of the NCE (Mean Field) principle: Agent specific cost interactions. , 2008, , .		6
85	Analysis of a class of decentralized decision processes: Quantized progressive second price auctions. , 2007, , .		7
86	A Hybrid Bellman Equation for systems with regional dynamics. , 2007, , .		19
87	Distributed control of loss network systems: Independent subnetwork behaviour in infinite networks. , 2007, , .		3
88	Large-Population Cost-Coupled LQG Problems With Nonuniform Agents: Individual-Mass Behavior and Decentralized ε-Nash Equilibria. IEEE Transactions on Automatic Control, 2007, 52, 1560-1571.	3.6	773
89	On Relationships Between Weierstrass-Erdmannn Corner Condition, Snell's Law and the Hybrid Minimum Principle. , 2007, , .		8
90	A Stochastic Approximation Approach to the Power-Control Problem. IEEE Transactions on Communications, 2007, 55, 878-886.	4.9	6

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91	On the Hybrid Optimal Control Problem: Theory and Algorithms. IEEE Transactions on Automatic Control, 2007, 52, 1587-1603.	3.6	269
92	An Invariance Principle in Large Population Stochastic Dynamic Games. Journal of Systems Science and Complexity, 2007, 20, 162-172.	1.6	66
93	A Hybrid Bellman Equation for Bimodal Systems. , 2007, , 656-659.		22
94	Stochastic Control of Network Systems I: NETCAD State Space Structure & Dynamics. , 2006, , .		7
95	Nash Certainty Equivalence in Large Population Stochastic Dynamic Games: Connections with the Physics of Interacting Particle Systems. , 2006, , .		56
96	Large population stochastic dynamic games: closed-loop McKean-Vlasov systems and the Nash certainty equivalence principle. Communications in Information and Systems, 2006, 6, 221-252.	0.3	821
97	Hierarchical hybrid systems: Geometry, controllability and applications to air traffic control *. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1999, 32, 2158-2163.	0.4	3