Vijay Sekhar Chellaboina

List of Publications by Year
in descending order

97 papers	3,649 citations	270111 25 h-index	274796 44 g-index
99 all docs	99 docs citations	99 times ranked	2070 citing authors

#	ARTICLE	IF	CITATIONS
1	Dynamic Dissipativity Theory for Stability of Time-Delay Systems. Advances in Delays and Dynamics, 2019, , 33-47.	0.4	0
2	Model-Free Optimal Control: A Critical Analysis. Lecture Notes in Computer Science, 2017, , 215-222.	1.0	0
3	optimal semistable control for linear dynamical systems: An LMI approach. Journal of the Franklin Institute, 2011, 348, 2898-2910.	1.9	25
4	Limit cycle stability analysis and adaptive control of a multi-compartment model for a pressure-limited respirator and lung mechanics system. International Journal of Control, 2010, 83, 940-955.	1.2	14
5	Heat flow, work energy, chemical reactions, and thermodynamics: a dynamical systems perspective. , 2010, , .		2
6	Nonnegative and Compartmental Dynamical Systems. , 2010, , .		283
7	Discrete-time, minimum-variance hedging of European contingent claims. , 2009, , .		3
8	Discrete-time optimal hedging for multi-asset path-dependent European contingent claims. , 2009, , .		0
9	ℓ_2 suboptimal estimation and control for nonnegative dynamical systems. Optimal Control Applications and Methods, 2009, 30, 27-45.	1.3	3
10	Modeling and analysis of mass-action kinetics. IEEE Control Systems, 2009, 29, 60-78.	1.0	167
11	Time-reversal symmetry, Poincaré recurrence, irreversibility, and the entropic arrow of time: From mechanics to system thermodynamics. Nonlinear Analysis: Real World Applications, 2008, 9, 250-271.	0.9	14
12	Controller synthesis with guaranteed closed-loop phase constraints. Automatica, 2008, 44, 3211-3214.	3.0	6
13	On system state equipartitioning and semistability in network dynamical systems with arbitrary time-delays. Systems and Control Letters, 2008, 57, 670-679.	1.3	18
14	The structured phase margin for robust stability analysis of linear systems with phase and time delay uncertainties. International Journal of Control, 2008, 81, 1298-1310.	1.2	5
15	Direct adaptive control for a mutli-compartmental model of a pressure-limited respirator and lung mechanics system. , 2008, , .		1
16	Limit Cycle Stability Analysis of a Multi-Compartment Model for a Pressure-Limited Respirator and Lung Mechanics System. Proceedings of the American Control Conference, 2007, , .	0.0	5
17	H2 Suboptimal Estimation and Control for Nonnegative Dynamical Systems. Proceedings of the American Control Conference, 2007, , .	0.0	0
18	Time-Domain Sufficient Conditions for Stability Analysis of Linear Neutral Time-Delay Systems. Proceedings of the American Control Conference, 2007, , .	0.0	1

#	ARTICLE	IF	CITATIONS
19	Energy- and Entropy-Based Stabilization for Lossless Dynamical Systems via Hybrid Controllers. IEEE Transactions on Automatic Control, 2007, 52, 1604-1614.	3.6	43
20	Controller synthesis with guaranteed closed-loop phase constraints. , 2007, , .		1
21	H<inf>2</inf> optimal semistable control for linear dynamical systems: An LMI approach. , 2007, , .		11
22	Adaptive Input Estimation Methods for Improving the Bandwidth of Microgyroscopes. IEEE Sensors Journal, 2007, 7, 562-567.	2.4	13
23	Hybrid decentralized maximum entropy control for large-scale dynamical systems. Nonlinear Analysis: Hybrid Systems, 2007, 1, 244-263.	2.1	12
24	Direct Adaptive Control of Nonnegative and Compartmental Dynamical Systems with Time Delay. , 2007, , 291-316.		2
25	Optimal Dynamic Assignment for Low Earth Orbit Satellite Constellations. , 2006, , .		0
26	On System State Equipartitioning and Semistability in Network Dynamical Systems with Arbitrary Time-Delays. , 2006, , .		5
27	Impulsive and Hybrid Dynamical Systems. , 2006, , .		427
28	Thermodynamic modeling, energy equipartition, and nonconservation of entropy for discrete-time dynamical systems. Advances in Difference Equations, 2005, 2005, 248040.	3.5	17
29	Optimal disturbance rejection control for nonlinear impulsive dynamical systems. Nonlinear Analysis: Theory, Methods & Applications, 2005, 62, 1466-1489.	0.6	13
30	Stability and dissipativity theory for nonnegative dynamical systems: a unified analysis framework for biological and physiological systems. Nonlinear Analysis: Real World Applications, 2005, 6, 35-65.	0.9	161
31	Hybrid adaptive control for non-linear uncertain impulsive dynamical systems. International Journal of Adaptive Control and Signal Processing, 2005, 19, 445-469.	2.3	10
32	A dissipative dynamical systems approach to stability analysis of time delay systems. International Journal of Robust and Nonlinear Control, 2005, 15, 25-33.	2.1	18
33	Adaptive Control of Mammillary Drug Delivery Systems with Actuator Amplitude Constraints and System Time Delays. European Journal of Control, 2005, 11, 586-600.	1.6	20
34	PDE modeling and control of a flexible two-link manipulator. IEEE Transactions on Control Systems Technology, 2005, 13, 301-312.	3.2	79
35	Neural Network Adaptive Control for Nonlinear Nonnegative Dynamical Systems. IEEE Transactions on Neural Networks, 2005, 16, 399-413.	4.8	31
36	Vector dissipativity theory for large-scale impulsive dynamical systems. Mathematical Problems in Engineering, 2004, 2004, 225-262.	0.6	9

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37	Lyapunov function proof of Poincaré's theorem. International Journal of Systems Science, 2004, 35, 287-292.	3.7	2
38	Fixed Order Positive Real Control Using Genetic Algorithms. , 2004, , 743.		0
39	On Nonoscillation and Monotonicity of Solutions of Nonnegative and Compartmental Dynamical Systems. IEEE Transactions on Biomedical Engineering, 2004, 51, 408-414.	2.5	7
40	Optimal fixed-structure control for linear non-negative dynamical systems. International Journal of Robust and Nonlinear Control, 2004, 14, 487-511.	2.1	12
41	Stability theory for nonnegative and compartmental dynamical systems with time delay. Systems and Control Letters, 2004, 51, 355-361.	1.3	254
42	Vector dissipativity theory and stability of feedback interconnections for large-scale non-linear dynamical systems. International Journal of Control, 2004, 77, 907-919.	1.2	37
43	Dissipativity Theory for Nonnegative and Compartmental Dynamical Systems With Time Delay. IEEE Transactions on Automatic Control, 2004, 49, 747-751.	3.6	54
44	Vector dissipativity theory for discrete-time large-scale nonlinear dynamical systems. Advances in Difference Equations, 2004, 2004, 612830.	3.5	13
45	On monotonicity of solutions of discrete-time nonnegative and compartmental dynamical systems. Advances in Difference Equations, 2004, 2004, 532048.	3.5	0
46	Linear controller analysis and design for systems with input hystereses nonlinearities. Journal of the Franklin Institute, 2003, 340, 371-390.	1.9	9
47	Energy-based control for hybrid port-controlled Hamiltonian systems. Automatica, 2003, 39, 1425-1435.	3.0	36
48	Direct adaptive control for nonlinear matrix second-order dynamical systems with state-dependent uncertainty. Systems and Control Letters, 2003, 48, 53-67.	1.3	6
49	An invariance principle for nonlinear hybrid and impulsive dynamical systems. Nonlinear Analysis: Theory, Methods & Applications, 2003, 53, 527-550.	0.6	89
50	Robust adaptive control for nonlinear uncertain systems. Automatica, 2003, 39, 551-556.	3.0	62
51	Limit cycle analysis of the verge and foliot clock escapement using impulsive differential equations and Poincaré maps. International Journal of Control, 2003, 76, 1685-1698.	1.2	36
52	Stability and dissipativity theory for discrete-time non-negative and compartmental dynamical systems. International Journal of Control, 2003, 76, 1845-1861.	1.2	44
53	Exponentially dissipative nonlinear dynamical systems: a nonlinear extension of strict positive realness. Mathematical Problems in Engineering, 2003, 2003, 25-45.	0.6	41
54	Stability margins of discrete-time nonlinear-non-quadratic optimal regulators. International Journal of Systems Science, 2002, 33, 577-584.	3.7	15

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55	A unification between partial stability and stability theory for time-varying systems. IEEE Control Systems, 2002, 22, 66-75.	1.0	80
56	Hybrid nonnegative and computational dynamical systems. Mathematical Problems in Engineering, 2002, 8, 493-515.	0.6	19
57	Non-linear impulsive dynamical systems. Part I: Stability and dissipativity. International Journal of Control, 2001, 74, 1631-1658.	1.2	107
58	Nonlinear system stabilization via hierarchical switching control. IEEE Transactions on Automatic Control, 2001, 46, 17-28.	3.6	81
59	Dissipativity theory and stability of feedback interconnections for hybrid dynamical systems. Mathematical Problems in Engineering, 2001, 7, 299-335.	0.6	44
60	Non-linear impulsive dynamical systems. Part II: Stability of feedback interconnections and optimality. International Journal of Control, 2001, 74, 1659-1677.	1.2	53
61	Nonlinear control of Hammerstein systems with passive nonlinear dynamics. IEEE Transactions on Automatic Control, 2001, 46, 1630-1634.	3.6	33
62	Inverse optimal adaptive control for non-linear uncertain systems with exogenous disturbances. International Journal of Adaptive Control and Signal Processing, 2000, 14, 1-38.	2.3	10
63	Robust fixed-structure controller synthesis using the implicit small-gain bound. Journal of the Franklin Institute, 2000, 337, 85-96.	1.9	3
64	Stability margins of nonlinear optimal regulators with nonquadratic performance criteria involving cross-weighting terms. Systems and Control Letters, 2000, 39, 71-78.	1.3	10
65	Optimal nonlinearâ€"nonquadratic feedback control for nonlinear discrete-time systems with and disturbances. Nonlinear Analysis: Theory, Methods & Applications, 2000, 41, 287-312.	0.6	8
66	Induced Convolution Operator Norms of Linear Dynamical Systems. Mathematics of Control, Signals, and Systems, 2000, 13, 216-239.	1.4	38
67	Nonlinear robust hierarchical control for nonlinear uncertain systems. Mathematical Problems in Engineering, 2000, 5, 499-542.	0.6	2
68	Resetting Virtual Absorbers for Vibration Control. JVC/Journal of Vibration and Control, 2000, 6, 61-83.	1.5	59
69	Optimal non-linear robust control for non-linear uncertain systems. International Journal of Control, 2000, 73, 329-342.	1.2	32
70	Fixed-order dynamic compensation for linear systems with actuator amplitude and rate saturation constraints. International Journal of Control, 2000, 73, 1087-1103.	1.2	13
71	Finite settling time control of the double integrator using a virtual trap-door absorber. IEEE Transactions on Automatic Control, 2000, 45, 776-780.	3.6	12
72	Robust stabilization of axial flow compressors with uncertain pressure-flow maps. IEEE Transactions on Control Systems Technology, 2000, 8, 466-473.	3.2	10

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73	Multiobjective L1/Hˆž Controller Design for Systems with Frequency and Time Domain Constraints. European Journal of Control, 2000, 6, 170-183.	1.6	1
74	Multimode Control of Axial Compressors via Stability-Based Switching Controllers. Journal of Propulsion and Power, 1999, 15, 364-367.	1.3	3
75	Generalized Lyapunov and invariant set theorems for nonlinear dynamical systems. Systems and Control Letters, 1999, 38, 289-295.	1.3	24
76	Nonlinear controllers for nonlinear systems with input nonlinearities. Journal of the Franklin Institute, 1999, 336, 649-664.	1.9	7
77	Nonlinear robust disturbance rejection controllers for rotating stall and surge in axial flow compressors. IEEE Transactions on Control Systems Technology, 1999, 7, 391-398.	3.2	13
78	Optimal discrete-time control for non-linear cascade systems. Journal of the Franklin Institute, 1998, 335, 827-839.	1.9	41
79	Robust nonlinear feedback control for uncertain linear systems with nonquadratic performance criteria. Systems and Control Letters, 1998, 33, 327-338.	1.3	16
80	Structured matrix norms for robust stability and performance with block-structured uncertainty. International Journal of Control, 1998, 71, 535-557.	1.2	8
81	Mixed-norm H2/L1 controller synthesis via fixed-order dynamic compensation: A Riccati equation approach. International Journal of Control, 1998, 71, 35-59.	1.2	17
82	Frequency-domain performance bounds for uncertain structures with sensor and actuator dynamics. International Journal of Control, 1997, 66, 381-392.	1.2	0
83	Optimal nonlinear disturbance rejection control for nonlinear cascade systems. International Journal of Control, 1997, 68, 997-1018.	1.2	5
84	Robust nonlinear-nonquadratic feedback control via parameterdependent Lyapunov functions. International Journal of Control, 1997, 66, 843-861.	1.2	11
85	An implicit small gain condition and an upper bound for the real structured singular value. Systems and Control Letters, 1997, 29, 197-205.	1.3	9
86	Structured matrix norms for real and complex block-structured uncertainty. Automatica, 1997, 33, 995-997.	3.0	4
87	Discrete-time nonlinear analysis and feedback control with nonquadratic performance criteria. Journal of the Franklin Institute, 1996, 333, 849-860.	1.9	12
88	Real-Î¼ bounds based on fixed shapes in the Nyquist plane: Parabolas, hyperbolas, cissoids, nephroids, and octomorphs. Systems and Control Letters, 1996, 27, 55-66.	1.3	1
89	Frequency domain performance bounds for uncertain positive real systems. Journal of Guidance, Control, and Dynamics, 1996, 19, 398-406.	1.6	2
90	Generalized mixed-Î¼ bounds for real and complex multiple-block uncertainty with internal matrix structure. International Journal of Control, 1996, 64, 789-806.	1.2	32

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91	Is the Frobenius matrix norm induced?. IEEE Transactions on Automatic Control, 1995, 40, 2137-2139.	3.6	10
92	Neural network adaptive control for discrete-time nonlinear nonnegative dynamical systems. , 0, , .		3
93	Large-scale nonlinear dynamical systems: a vector dissipative systems approach. , 0, , .		3
94	Thermodynamic Stabilization via Energy Dissipating Hybrid Controllers. , 0, , .		8
95	Dynamic Dissipativity Theory for Stability of Nonlinear Feedback Dynamical Systems. , 0, , .		2
96	Time-Reversal Symmetry, Poincaré Recurrence, Irreversibility, and the Entropic Arrow of Time: From Mechanics to System Thermodynamics. , 0, , .		1
97	Frequency Domain Sufficient Conditions for Stability Analysis of Linear Neutral Time-Delay Systems. , 0, , .		1