Roy S Smith

List of Publications by Year in Descending Order

167 papers	2,062 citations	21 h-index	40 g-index
184 ext. papers	2,647 ext. citations	3.1 avg, IF	5.49 L-index

#	Paper	IF	Citations
167	Physics-informed linear regression is competitive with two Machine Learning methods in residential building MPC. *Applied Energy*, **2022**, 310, 118491	10.7	2
166	Distributed model predictive control of buildings and energy hubs. *Energy and Buildings*, **2022**, 259, 111806	7	1
165	Robust MPC with data-driven demand forecasting for frequency regulation with heat pumps. *Control Engineering Practice*, **2022**, 122, 105101	3.9	0
164	Stochastic Energy Pricing of an Electric Vehicle Parking Lot. *IEEE Transactions on Smart Grid*, **2022**, 1-1	10.7	2
163	Stochasticity in Feedback Loops: Great Expectations and Guaranteed Ruin. *IEEE Control Systems*, **2021**, 41, 28-44	2.9	
162	Electricity in the air: Insights from two decades of advanced control research and experimental flight testing of airborne wind energy systems. *Annual Reviews in Control*, **2021**, 52, 330-330	10.3	16
161	Convex Nonparametric Formulation for Identification of Gradient Flows **2021**, 5, 1097-1102		1
160	Subspace Identification of Linear Time-Periodic Systems With Periodic Inputs **2021**, 5, 145-150		
159	Median, Mean, and Variance Stability of a Process Under Temporally Correlated Stochastic Feedback **2021**, 5, 857-862		
158	Nonlinear System Identification With Prior Knowledge on the Region of Attraction **2021**, 5, 1091-1096		2
157	Experiment design for impulse response identification with signal matrix models. *IFAC-PapersOnLine*, **2021**, 54, 625-630	0.7	0
156	On Low-Rank Hankel Matrix Denoising. *IFAC-PapersOnLine*, **2021**, 54, 198-203	0.7	2
155	Performance-Driven Cascade Controller Tuning With Bayesian Optimization. *IEEE Transactions on Industrial Electronics*, **2021**, 1-1	8.9	7
154	Graph-Theoretic Optimization for Edge Consensus. *IFAC-PapersOnLine*, **2021**, 54, 533-538	0.7	1
153	The balanced mode decomposition algorithm for data-driven LPV low-order models of aeroservoelastic systems. *Aerospace Science and Technology*, **2021**, 115, 106821	4.9	1
152	On Robustness of Kernel-Based Regularized System Identification. *IFAC-PapersOnLine*, **2021**, 54, 749-754	0.7	0
151	A Multiobjective LQR Synthesis Approach to Dual Control for Uncertain Plants **2020**, 4, 952-957		2

150	Improved day ahead heating demand forecasting by online correction methods. *Energy and Buildings*, **2020**, 211, 109821	7	16
149	Parameter Identification for Digital Fabrication: A Gaussian Process Learning Approach. *IFAC-PapersOnLine*, **2020**, 53, 388-393	0.7	1
148	Cascade Control: Data-Driven Tuning Approach Based on Bayesian Optimization. *IFAC-PapersOnLine* , **2020**, 53, 382-387	0.7	4
147	Robust Control of a Lightweight Structure for Digital Fabrication. *IFAC-PapersOnLine*, **2020**, 53, 7424-7430	0.7	1
146	Structured exploration in the finite horizon linear quadratic dual control problem. *IFAC-PapersOnLine*, **2020**, 53, 959-964	0.7	2
145	Robust Adaptive Model Predictive Control with Worst-Case Cost. *IFAC-PapersOnLine*, **2020**, 53, 4222-4227	0.7	
144	Feedback Control Design Maximizing the Region of Attraction of Stochastic Systems Using Polynomial Chaos Expansion. *IFAC-PapersOnLine*, **2020**, 53, 7197-7203	0.7	
143	Frequency regulation with heat pumps using robust MPC with affine policies. *IFAC-PapersOnLine*, **2020**, 53, 13210-13215	0.7	3
142	Linear Time-Periodic System Identification with Grouped Atomic Norm Regularization. *IFAC-PapersOnLine*, **2020**, 53, 1237-1242	0.7	3
141	Regularized System Identification: A Hierarchical Bayesian Approach. *IFAC-PapersOnLine*, **2020**, 53, 406-411	0.7	1
140	Low-Complexity Identification by Sparse Hyperparameter Estimation. *IFAC-PapersOnLine*, **2020**, 53, 412-417	0.7	1
139	Region of attraction analysis of nonlinear stochastic systems using Polynomial Chaos Expansion. *Automatica*, **2020**, 122, 109187	5.7	5
138	Distributed Control Design for Heterogeneous Interconnected Systems. *IEEE Transactions on Automatic Control*, **2020**, 1-1	5.9	0
137	. *IEEE Transactions on Control Systems Technology*, **2020**, 28, 1378-1392	4.8	
136	Controller Tuning by Bayesian Optimization An Application to a Heat Pump **2019**,		6
135	Nonlinear Control of Quadcopters via Approximate Dynamic Programming **2019**,		1
134	Visual control of steering in curve driving. *Journal of Vision*, **2019**, 19, 1	0.4	1
133	Sensitivity analysis of data-driven building energy demand forecasts. *Journal of Physics: Conference Series*, **2019**, 1343, 012062	0.3	1

132	Power System Upgrade Planning with On-load Tap-changing Transformers, Switchable Topology and Operating Policies **2019**,		1
131	Kernel-Based Identification of Positive Systems **2019**,		2
130	Price arbitrage using variable-efficiency energy storage. *Journal of Physics: Conference Series*, **2019**, 1343, 012060	0.3	2
129	Machine learning-based modeling and controller tuning of a heat pump. *Journal of Physics: Conference Series*, **2019**, 1343, 012065	0.3	1
128	Exergy-based model predictive control for design and control of a seasonal thermal energy storage system. *Journal of Physics: Conference Series*, **2019**, 1343, 012066	0.3	3
127	Incomplete recovery of cerebral blood flow dynamics in sufficiently treated high blood pressure. *Journal of Hypertension*, **2019**, 37, 372-379	1.9	9
126	The Power of Diversity: Data-Driven Robust Predictive Control for Energy-Efficient Buildings and Districts. *IEEE Transactions on Control Systems Technology*, **2019**, 27, 132-145	4.8	17
125	Mutually Quadratically Invariant Information Structures in Two-Team Stochastic Dynamic Games. *IEEE Transactions on Automatic Control*, **2018**, 63, 2256-2263	5.9	3
124	Visual Motion Tracking and Sensor Fusion for Kite Power Systems. *Green Energy and Technology*, **2018**, 413-438	0.6	2
123	. *IEEE Transactions on Power Systems*, **2018**, 33, 363-372	7	8
122	Iterative Learning Control for the Radio Frequency Subsystems of a Free-Electron Laser. *IEEE Transactions on Control Systems Technology*, **2018**, 26, 1567-1577	4.8	2
121	Modeling, Identification, Estimation and Adaptation for the Control of Power-Generating Kites. *IFAC-PapersOnLine*, **2018**, 51, 981-989	0.7	1
120	Stability Verification for Periodic Trajectories of Autonomous Kite Power Systems **2018**,		3
119	Active control of a rod-net formwork system prototype. *Automation in Construction*, **2018**, 96, 128-140	9.6	13
118	Scalable Controller Synthesis for Heterogeneous Interconnected Systems Applicable to an Overlapping Control Framework **2018**,		1
117	Globally Optimal AC Power System Upgrade Planning under Operational Policy Constraints **2018**,		1
116	A Projected Gradient and Constraint Linearization Method for Nonlinear Model Predictive Control. *SIAM Journal on Control and Optimization*, **2018**, 56, 1968-1999	1.9	6
115	Pumping Cycle Kite Power with Twings. *Green Energy and Technology*, **2018**, 603-621	0.6	4

114	Model Predictive Approaches for Active Surge Control in Centrifugal Compressors. *IEEE Transactions on Control Systems Technology*, **2017**, 25, 1947-1960	4.8	20
113	Predictive Control of Autonomous Kites in Tow Test Experiments **2017**, 1, 110-115		14
112	A Data-Driven Stochastic Optimization Approach to the Seasonal Storage Energy Management **2017**, 1, 394-399		10
111	Adaptive Control of Low-Level Radio Frequency Signals Based on In-Phase and Quadrature Components. *IEEE Transactions on Nuclear Science*, **2017**, 64, 1023-1028	1.7	
110	Automated classification and identification procedure for prediction of energy consumption in multi-mode buildings. *Energy Procedia*, **2017**, 122, 1021-1026	2.3	3
109	Parameter Identification of the KUKA LBR iiwa Robot Including Constraints on Physical Feasibility. *IFAC-PapersOnLine*, **2017**, 50, 6863-6868	0.7	20
108	A Framework for Distributed Control Based on Overlapping Estimation for Cooperative Tasks. *IFAC-PapersOnLine*, **2017**, 50, 14296-14301	0.7	2
107	Robust Adaptive Model Predictive Building Climate Control. *IFAC-PapersOnLine*, **2017**, 50, 1871-1876	0.7	18
106	. *IEEE Control Systems*, **2017**, 37, 30-51	2.9	6
105	Fixed Mode Elimination by Minimum Communication Within an Estimator-Based Framework for Distributed Control **2017**, 1, 346-351		5
104	Optimal Control of Gains in a Linear Accelerator: A Supervisory Method for Vector-Sum Control. *IEEE Transactions on Control Systems Technology*, **2017**, 25, 1800-1806	4.8	
103	State Estimation for Kite Power Systems with Delayed Sensor Measurements * *This research was supported by the Swiss National Science Foundation (Synergia) No. 141836 and the Swiss Commission for Technology and Innovation (CTI). *IFAC-PapersOnLine*, **2017**, 50, 11959-11964	0.7	2
102	Scalability through Decentralization: A Robust Control Approach for the Energy Management of a Building Community. *IFAC-PapersOnLine*, **2017**, 50, 14314-14319	0.7	3
101	Predictive Guidance Control for Autonomous Kites with Input Delay. *IFAC-PapersOnLine*, **2017**, 50, 13276-13281	0.7	3
100	Low-complexity first-order constraint linearization methods for efficient nonlinear MPC **2017**,		1
99	Two methods for the identification of uncertain parameters of an architectural cable net geometry **2016**,		4
98	An Iterative Learning Control Approach for Radio Frequency Pulse Compressor Amplitude and Phase Modulation. *IEEE Transactions on Nuclear Science*, **2016**, 63, 842-848	1.7	1
97	Optimal Radio-Frequency Power Distribution in a Linear Accelerator Using Beam Energy Measurements. *IEEE Transactions on Nuclear Science*, **2016**, 63, 777-782	1.7	

96	Model Predictive Climate Control of a Swiss Office Building: Implementation, Results, and CostBenefit Analysis. *IEEE Transactions on Control Systems Technology*, **2016**, 24, 1-12	4.8	160
95	A Convex Characterization of Robust Stability for Positive and Positively Dominated Linear Systems. *IEEE Transactions on Automatic Control*, **2016**, 61, 1965-1971	5.9	24
94	A variant to Sequential Quadratic Programming for nonlinear Model Predictive Control **2016**,		6
93	Convex reformulation of a robust optimal control problem for a class of positive systems **2016**,		2
92	Sequential quadratic programming for the control of an architectural cable net geometry **2016**,		4
91	Time-Delayed Feedback Control of Electron Beam Energy Using ${H} _{infty }$ -Optimal Fractional Delay. *IEEE Transactions on Control Systems Technology*, **2016**, 24, 2176-2181	4.8	
90	Covert Misappropriation of Networked Control Systems: Presenting a Feedback Structure. *IEEE Control Systems*, **2015**, 35, 82-92	2.9	113
89	Optimization algorithms for nuclear norm based subspace identification with uniformly spaced frequency domain data **2015**,		1
88	Model-based identification and control of the velocity vector orientation for autonomous kites **2015**,		12
87	Active Surge control of electrically driven centrifugal compressors **2015**,		2
86	Model-based flight path planning and tracking for tethered wings **2015**,		10
85	Time-domain Subspace Identification Algorithms using Nuclear Norm Minimisation. *IFAC-PapersOnLine*, **2015**, 48, 903-908	0.7	1
84	Circuit generation for efficient projection onto polyhedral sets in first-order methods **2015**,		2
83	Robust stability of a class of interconnected nonlinear positive systems **2015**,		6
82	A stochastic optimization approach to cooperative building energy management via an energy hub **2015**,		16
81	Quadratic two-team games **2015**,		1
80	MPC based supervisory control design for a Free Electron Laser **2015**,		3
79	Range-inertial estimation for airborne wind energy **2015**,		5

78	An adaptive iterative learning control scheme for reducing CO2 emission in gasoline engines **2015**,		2
77	Model Predictive Control approaches for centrifugal compression systems **2015**,		1
76	Comparison of the efficiency of different magnetization strategies for a variable speed induction machine drive **2015**,		1
75	Adaptive receding horizon control for constrained MIMO systems. *Automatica*, **2014**, 50, 3019-3029	5.7	80
74	BRCM Matlab Toolbox: Model generation for model predictive building control **2014**,		46
73	Frequency Domain Subspace Identification Using Nuclear Norm Minimization and Hankel Matrix Realizations. *IEEE Transactions on Automatic Control*, **2014**, 59, 2886-2896	5.9	37
72	Frequency-Domain Identification of a Ventilated Room for Model Based Control. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2014**, 47, 593-598		1
71	Convex characterization of robust stability analysis and control synthesis for positive linear systems **2014**,		7
70	Identification of magnetic characteristics of induction motors based on the Jiles-Atherton model **2014**,		4
69	Towards a standardized building assessment for demand response **2013**,		20
68	Adaptive model predictive control for constrained MIMO systems. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 39-44		0
67	Adaptive model predictive control for constrained linear systems **2013**,		8
66	Semi-automated modular modeling of buildings for model predictive control **2012**,		23
65	**2012**,		19
64	A Decoupled Feedback Structure for Covertly Appropriating Networked Control Systems. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2011**, 44, 90-95		91
63	Modeling of tethered satellite formations using graph theory. *Acta Astronautica*, **2011**, 69, 470-479	2.9	8
62	Design of distributed decentralized estimators for formations with fixed and stochastic communication topologies. *Automatica*, **2009**, 45, 2491-2501	5.7	44
61	Changing lanes: inertial cues and explicit path information facilitate steering performance when visual feedback is removed. *Experimental Brain Research*, **2007**, 178, 141-50	2.3	20

60	Distributed Estimator Design for a Formation with Markovian Communication Topology. *Proceedings of the American Control Conference*, **2007**,	1.2	3
59	Distributed estimation, communication and control for deep space formations. *IET Control Theory and Applications*, **2007**, 1, 445-451	2.5	32
58	Design of a Distributed Decentralized Estimator for a Formation with Fixed Communication Topology. *Proceedings of the American Control Conference*, **2007**,	1.2	3
57	**2007**,		2
56	. *IEEE Transactions on Automatic Control*, **2007**, 52, 1404-1414	5.9	93
55	Classical, Robust and LPV Control of a Magnetic-bearing Experiment **2007**, 277-325		2
54	Simultaneous measurement of steering performance and perceived heading on a curving path. *ACM Transactions on Applied Perception*, **2006**, 3, 83-94	1.4	4
53	A distributed parallel estimation architecture for cooperative vehicle formation control **2006**,		15
52	Visual control of action without retinal optic flow. *Psychological Science*, **2006**, 17, 214-21	7.9	15
51	PARALLEL ESTIMATORS AND COMMUNICATION IN SPACECRAFT FORMATIONS. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2005**, 38, 91-96		
50	Control of Deep-Space Formation-Flying Spacecraft; Relative Sensing and Switched Information. *Journal of Guidance, Control, and Dynamics*, **2005**, 28, 106-114	2.1	76
49	Robust model predictive control of constrained linear systems **2004**,		18
48	Adaptive Air Charge Estimation for Turbocharged Diesel Engines Without Exhaust Gas Recirculation. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2004**, 126, 633-643	1.6	11
47	Pressure and temperature-based adaptive observer of air charge for turbocharged diesel engines. *International Journal of Robust and Nonlinear Control*, **2004**, 14, 543-560	3.6	16
46	A nonlinear functional approach to LFT model validation. *Systems and Control Letters*, **2002**, 47, 1-11	2.4	13
45	Control topologies for deep space formation flying spacecraft **2002**,		26
44	Magnetic Bearing Measurement Configurations and Associated Robustness and Performance Limitations. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2002**, 124, 589-598	1.6	22
43	NONLINEAR FUNCTIONAL CHARACTERIZATIONS OF UNCERTAINTY IN MODEL VALIDATION. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2002**, 35, 151-156		

42	Inherent limitations and control design for camless engine idle speed dynamics. *International Journal of Robust and Nonlinear Control*, **2001**, 11, 1023-1042	3.6	2
41	Control of a III-V MOCVD process using ultraviolet absorption and ultrasonic concentration monitoring. *IEEE Transactions on Control Systems Technology*, **2001**, 9, 728-740	4.8	6
40	Fundamental limits in robustness and performance for unstable, underactuated systems. *IEEE Transactions on Automatic Control*, **2001**, 46, 1265-1268	5.9	6
39	Maneuverability and smoke emission constraints in marine diesel propulsion. *Control Engineering Practice*, **2000**, 8, 1023-1031	3.9	14
38	Aeromaneuvering in the Martian Atmosphere: Simulation-Based Analyses. *Journal of Spacecraft and Rockets*, **2000**, 37, 139-142	1.5	7
37	Robust parametrically varying attitude controller designs for the X-33 vehicle **2000**,		21
36	Modeling and validation of nonlinear feedback systems **1999**, 87-101		4
35	Correction to "Optimal control of perturbed linear static systems". *IEEE Transactions on Automatic Control*, **1999**, 44, 1900-1901	5.9	
34	Closed-Loop Identification of Flexible Structures: An Experimental Example. *Journal of Guidance, Control, and Dynamics*, **1998**, 21, 435-440	2.1	7
33	A generalization of the structured singular value and its application to model validation. *IEEE Transactions on Automatic Control*, **1998**, 43, 901-907	5.9	36
32	Emissions and Performance Tradeoffs for Advanced Marine Diesel Propulsion. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **1998**, 31, 35-40		2
31	Model validation for dynamically uncertain systems. *Mathematical Modelling of Systems*, **1997**, 3, 43-58		22
30	Capturing Nonlinearities with Perturbation Models. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **1997**, 30, 107-112		1
29	Control-Oriented Model Validation. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **1997**, 30, 433-440		
28	A study of the gap between the structured singular value and its convex upper bound for low-rank matrices. *IEEE Transactions on Automatic Control*, **1997**, 42, 1176-1179	5.9	2
27	A continuous-time extension condition. *IEEE Transactions on Automatic Control*, **1996**, 41, 738-742	5.9	4
26	Continuous-time control model validation using finite experimental data. *IEEE Transactions on Automatic Control*, **1996**, 41, 1094-1105	5.9	36
25	Modeling and Control of a Metalorganic Chemical Vapor Deposition Process for III-V Compound Semiconductor Epitaxy. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **1996**, 29, 719-724		

24	Parameter Estimation in an Uncertain Model Framework. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **1996**, 29, 4057-4062		
23	The Stability Analysis of Sampled-Data Systems with Averaging Samplers and Time Delays. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **1996**, 29, 4132-4137		
22	Sampled-data model validation: An algorithm and experimental application. *International Journal of Robust and Nonlinear Control*, **1996**, 6, 1065-1078	3.6	9
21	Control of III epitaxy in a metalorganic chemical vapor deposition process: impact of source flow control on composition and thickness. *Journal of Crystal Growth*, **1996**, 167, 8-16	1.6	10
20	Optimal control of perturbed linear static systems. *IEEE Transactions on Automatic Control*, **1996**, 41, 579-584	5.9	10
19	Power methods for calculating eigenvalues and eigenvectors of spectral operators on Hilbert spaces. *International Journal of Control*, **1995**, 62, 1117-1128	1.5	4
18	. *IEEE Transactions on Automatic Control*, **1995**, 40, 1063-1066	5.9	14
17	. *IEEE Transactions on Microwave Theory and Techniques*, **1995**, 43, 2214-2221	4.1	3
16	Model validation for robust control: an experimental process control application. *Automatica*, **1995**, 31, 1637-1647	5.7	19
15	. *IEEE Transactions on Control Systems Technology*, **1994**, 2, 101-109	4.8	58
14	. *IEEE Transactions on Automatic Control*, **1994**, 39, 1904-1909	5.9	13
13	An informal review of model validation **1994**, 51-59		5
12	Experimentally Based Calculation of Robust Control Perturbation Models. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **1994**, 27, 521-526		
11	. *IEEE Transactions on Automatic Control*, **1992**, 37, 942-952	5.9	245
10	Calculating Finite-Dimensional Approximations of Infinite-Dimensional Linear Systems **1992**,		3
9	Model validation and parameter identification for systems in H and l1 **1992**,		6
8	Damping and Structural Control of the JPL Phase 0 Testbed Structure. *Journal of Intelligent Material Systems and Structures*, **1991**, 2, 281-300	2.3	15
7	**1991**,		13

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6	Towards a Methodology for Robust Parameter Identification **1990**,	14
5	Model Invalidation: A Connection between Robust Control and Identification **1989**,	23
4	The Two Tank Experiment: A Benchmark Control Problem **1988**,	7
3	Model validation for nonlinear feedback systems	5
2	Solving large structured semidefinite programs using an inexact spectral bundle method	5
1		0