Andrew W Smyth

List of Publications by Year
in descending order

76 papers	3,061 citations	218662 26 h-index	161844 54 g-index
78 all docs	78 docs citations	78 times ranked	1846 citing authors

#	Article	IF	Citations
1	An unscented Kalman filter method for real time input-parameter-state estimation. Mechanical Systems and Signal Processing, 2022, 162, 108026.	8.0	38
2	OBD-Data-Assisted Cost-Based Map-Matching Algorithm for Low-Sampled Telematics Data in Urban Environments. IEEE Transactions on Intelligent Transportation Systems, 2022, 23, 12094-12107.	8.0	5
3	Interpretable Machine Learning for Function Approximation in Structural Health Monitoring. Structural Integrity, 2022, , 369-388.	1.4	1
4	Integration, identification, and assessment of generalized damped systems using an online algorithm. Journal of Sound and Vibration, 2022, 523, 116696.	3.9	10
5	Input–parameter–state estimation of limited information wind–excited systems using a sequential Kalman filter. Structural Control and Health Monitoring, 2022, 29, .	4.0	7
6	A new residual-based Kalman filter for real time input–parameter–state estimation using limited output information. Mechanical Systems and Signal Processing, 2022, 178, 109284.	8.0	6
7	Data–driven models for temperature distribution effects on natural frequencies and thermal prestress modeling. Structural Control and Health Monitoring, 2020, 27, e2489.	4.0	18
8	Sensitivity–based singular value decomposition parametrization and optimal regularization in finite element model updating. Structural Control and Health Monitoring, 2020, 27, e2539.	4.0	12
9	Symmetry properties of natural frequency and mode shape sensitivities in symmetric structures. Mechanical Systems and Signal Processing, 2020, 143, 106797.	8.0	6
10	Finite element model updating using objective-consistent sensitivity-based parameter clustering and Bayesian regularization. Mechanical Systems and Signal Processing, 2019, 114, 328-345.	8.0	32
11	A Data-based Probabilistic Approach for the Generation of Spectra-Compatible Time-History Records. Journal of Earthquake Engineering, 2018, 22, 1365-1391.	2.5	2
12	A marginalized unscented Kalman filter for efficient parameter estimation with applications to finite element models. Computer Methods in Applied Mechanics and Engineering, 2018, 339, 615-643.	6.6	14
13	Experimental validation of the Kalman-type filters for online and real-time state and input estimation. JVC/Journal of Vibration and Control, 2017, 23, 2494-2519.	2.6	102
14	Particle filtering and marginalization for parameter identification in structural systems. Structural Control and Health Monitoring, 2017, 24, e1874.	4.0	24
15	Online Bayesian model assessment using nonlinear filters. Structural Control and Health Monitoring, 2017, 24, e1880.	4.0	20
16	Bayesian model updating of a full-scale finite element model with sensitivity-based clustering. Structural Control and Health Monitoring, 2017, 24, e2004.	4.0	49
17	Model updating of a full-scale FE model with nonlinear constraint equations and sensitivity-based cluster analysis for updating parameters. Mechanical Systems and Signal Processing, 2017, 83, 337-355.	8.0	53
18	Framework of Data Acquisition and Integration for the Detection of Pavement Distress via Multiple Vehicles. Journal of Computing in Civil Engineering, 2017, 31, .	4.7	23

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19	Review of Nonlinear Filtering for SHM with an Exploration of Novel Higher-Order Kalman Filtering Algorithms for Uncertainty Quantification. Journal of Engineering Mechanics - ASCE, 2017, 143, 04017128.	2.9	18
20	On the Performance of Online Parameter Estimation Algorithms in Systems with Various Identifiability Properties. Frontiers in Built Environment, 2017, 3, .	2.3	10
21	Implementation of Parametric Methods forÂthe Treatment of Uncertainties in Online Identification. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2016, , 51-87.	0.6	2
22	Combining optimization methods with response spectra curve-fitting toward improved damping ratio estimation. Mechanical Systems and Signal Processing, 2016, 80, 189-205.	8.0	2
23	Vibration Mitigation and Monitoring: A Case Study of Construction in a Museum. Journal of the American Institute for Conservation, 2016, 55, 32-55.	0.5	9
24	Online Noise Identification for Joint State and Parameter Estimation of Nonlinear Systems. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2016, 2, .	1.7	28
25	Monocular Computer Vision Method for the Experimental Study of Three-Dimensional Rocking Motion. Journal of Engineering Mechanics - ASCE, 2016, 142, .	2.9	16
26	Exploration of the Impacts of Driving Frequencies on Damping Estimates. Journal of Engineering Mechanics - ASCE, 2015, 141, .	2.9	13
27	Road surface condition monitoring via multiple sensor-equipped vehicles. , 2015, , .		9
28	On the observability and identifiability of nonlinear structural and mechanical systems. Structural Control and Health Monitoring, 2015, 22, 574-593.	4.0	70
29	Nonlinear System Identification: Particle-Based Methods. , 2015, , 1677-1692.		0
30	On the application of blind source separation for damping estimation of bridges under traffic loading. Journal of Sound and Vibration, 2014, 333, 7333-7351.	3.9	15
31	Nonlinear System Identification: Particle-Based Methods. , 2014, , 1-18.		3
32	An investigation of the effects of traffic induced local dynamics on global damping estimates using operational modal analysis. Mechanical Systems and Signal Processing, 2013, 41, 433-453.	8.0	23
33	Three-Dimensional Dynamics of a Rigid Body with Wheels on a Moving Base. Journal of Engineering Mechanics - ASCE, 2013, 139, 496-511.	2.9	13
34	Special Issue on Dynamics and Analysis of Large-Scale Structures. Journal of Engineering Mechanics - ASCE, 2013, 139, 677-677.	2.9	0
35	Particle filter scheme with mutation for the estimation of time-invariant parameters in structural health monitoring applications. Structural Control and Health Monitoring, 2013, 20, 1081-1095.	4.0	76
36	Robust Modeling of the Rocking Problem. Journal of Engineering Mechanics - ASCE, 2012, 138, 247-262.	2.9	61

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37	Modeling of the 3D rocking problem. International Journal of Non-Linear Mechanics, 2012, 47, 85-98.	2.6	55
38	Rapid evaluation and damage assessment of instrumented highway bridges. Earthquake Engineering and Structural Dynamics, 2012, 41, 755-774.	4.4	26
39	Toward constructive methods for sigmoidal neural networks - function approximation in engineering mechanics applications. , 2011, , .		5
40	Experimental application and enhancement of the XFEMâ€"GA algorithm for the detection of flaws in structures. Computers and Structures, 2011, 89, 556-570.	4.4	85
41	Detection and quantification of flaws in structures by the extended finite element method and genetic algorithms. International Journal for Numerical Methods in Engineering, 2010, 82, 303-328.	2.8	77
42	Experimental application of on-line parametric identification for nonlinear hysteretic systems with model uncertainty. Structural Safety, 2010, 32, 326-337.	5.3	123
43	Field Damage Survey of New Orleans Homes in the Aftermath of Hurricane Katrina. Natural Hazards Review, 2010, 11, 7-18.	1.5	13
44	Comparison of switching control algorithms effective in restricting the switching in the neighborhood of the origin. Smart Materials and Structures, 2010, 19, 065003.	3.5	1
45	The unscented Kalman filter and particle filter methods for nonlinear structural system identification with non-collocated heterogeneous sensing. Structural Control and Health Monitoring, 2009, 16, 99-123.	4.0	342
46	A probabilistic approach for the construction of regional earthquake response spectra. Probabilistic Engineering Mechanics, 2009, 24, 511-526.	2.7	1
47	Failures Associated with the 2004 Mindulle Typhoon in Taiwan. Geotechnical and Geological Engineering, 2008, 26, 79-90.	1.7	8
48	Real-time parameter estimation for degrading and pinching hysteretic models. International Journal of Non-Linear Mechanics, 2008, 43, 822-833.	2.6	68
49	Load Response on a Large Suspension Bridge during the NYC Marathon Revealed by GPS and Accelerometers. Seismological Research Letters, 2008, 79, 12-19.	1.9	31
50	Adaptive Parametric Identification Scheme for a Class of Nondeteriorating and Deteriorating Nonlinear Hysteretic Behavior. Journal of Engineering Mechanics - ASCE, 2008, 134, 482-494.	2.9	10
51	Neural Network Initialization with Prototypes - Function Approximation in Engineering Mechanics Applications. Neural Networks (IJCNN), International Joint Conference on, 2007, , .	0.0	11
52	Generalized Masing Approach to Modeling Hysteretic Deteriorating Behavior. Journal of Engineering Mechanics - ASCE, 2007, 133, 495-505.	2.9	15
53	A robust online parametric identification method for non-deteriorating and deteriorating distributed element models with viscous damping. International Journal of Non-Linear Mechanics, 2007, 42, 1194-1203.	2.6	0
54	Application of the unscented Kalman filter for real-time nonlinear structural system identification. Structural Control and Health Monitoring, 2007, 14, 971-990.	4.0	244

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55	Multi-rate Kalman filtering for the data fusion of displacement and acceleration response measurements in dynamic system monitoring. Mechanical Systems and Signal Processing, 2007, 21, 706-723.	8.0	288
56	Impediments to recovery in New Orleans' Upper and Lower Ninth Ward: one year after Hurricane Katrina. Disasters, 2007, 31, 311-335.	2.2	96
57	Multirate Kalman filtering for the data fusion of displacement and acceleration measurements. , 2006, , .		4
58	A parametric identification scheme for non-deteriorating and deteriorating non-linear hysteretic behaviour. Structural Control and Health Monitoring, 2006, 13, 108-131.	4.0	9
59	New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. I: Formulation. Journal of Engineering Mechanics - ASCE, 2006, 132, 1290-1300.	2.9	26
60	Energy Capacity Criterion for the Design of Columns against Collapse. Journal of Engineering Mechanics - ASCE, 2006, 132, 594-599.	2.9	11
61	New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. II: Applications. Journal of Engineering Mechanics - ASCE, 2006, 132, 1301-1312.	2.9	15
62	A new approach to designing multilayer feedforward neural networks for modeling nonlinear restoring forces. , 2005, , .		1
63	Mapping polynomial fitting into feedforward neural networks for modeling nonlinear dynamic systems and beyond. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 4481-4505.	6.6	39
64	A General Data-Based Approach for Developing Reduced-Order Models of Nonlinear MDOF Systems. Nonlinear Dynamics, 2005, 39, 95-112.	5.2	40
65	Probabilistic Benefit-Cost Analysis for Earthquake Damage Mitigation: Evaluating Measures for Apartment Houses in Turkey. Earthquake Spectra, 2004, 20, 171-203.	3.1	107
66	A Re-Configurable Test Apparatus for Complex Nonlinear Dynamic Systems. Nonlinear Dynamics, 2004, 36, 181-201.	5.2	6
67	The robustness of an efficient probabilistic data-based tool for simulating the non-stationary response of non-linear systems. International Journal of Non-Linear Mechanics, 2004, 39, 1453-1461.	2.6	1
68	Identification of the state equation in complex non-linear systems. International Journal of Non-Linear Mechanics, 2004, 39, 1111-1127.	2.6	78
69	Analysis and modification of Volterra/Wiener neural networks for the adaptive identification of non-linear hysteretic dynamic systems. Journal of Sound and Vibration, 2004, 275, 693-718.	3.9	53
70	System identification of the Vincent Thomas suspension bridge using earthquake records. Earthquake Engineering and Structural Dynamics, 2003, 32, 339-367.	4.4	76
71	More transparent neural network approach for modeling nonlinear hysteretic systems. , 2003, , .		2
72	Use of Orthogonal Decomposition of Data-Based Excitation Processes for Nonstationary Response of Nonlinear Systems. Solid Mechanics and Its Applications, 2003, , 363-373.	0.2	0

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73	Nonstationary response of nonlinear systems using equivalent linearization with a compact analytical form of the excitation process. Probabilistic Engineering Mechanics, 2002, 17, 97-108.	2.7	20
74	Development of adaptive modeling techniques for non-linear hysteretic systems. International Journal of Non-Linear Mechanics, 2002, 37, 1435-1451.	2.6	161
75	On-line identification of non-linear hysteretic structural systems using a variable trace approach. Earthquake Engineering and Structural Dynamics, 2001, 30, 1279-1303.	4.4	121
76	PARAMETRIC AND NONPARAMETRIC ADAPTIVE IDENTIFICATION OF NONLINEAR STRUCTURAL SYSTEMS. , 2001, , .		0