

Billie Spencer

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

126
papers

3,202
citations

31
h-index

52
g-index

134
ext. papers

4,191
ext. citations

3.7
avg, IF

5.95
L-index

#	Paper	IF	Citations
126	Physics-Based Graphics Models in 3D Synthetic Environments as Autonomous Vision-Based Inspection Testbeds.. <i>Sensors</i> , 2022 , 22,	3.8	5
125	Post-Earthquake Building Evaluation Using UAVs: A BIM-Based Digital Twin Framework.. <i>Sensors</i> , 2022 , 22,	3.8	5
124	Continuous random field representation of stochastic moving loads. <i>Probabilistic Engineering Mechanics</i> , 2022 , 103230	2.6	0
123	Out-of-plane modal property extraction based on multi-level image pyramid reconstruction using stereophotogrammetry. <i>Mechanical Systems and Signal Processing</i> , 2022 , 169, 108786	7.8	1
122	Automated damping identification of long-span bridge using long-term wireless monitoring data with multiple sensor faults. <i>Journal of Civil Structural Health Monitoring</i> , 2022 , 12, 465-479	2.9	0
121	Bayesian inference of dense structural response using vision-based measurements. <i>Engineering Structures</i> , 2022 , 256, 113970	4.7	1
120	Topology optimization of buildings subjected to stochastic wind loads. <i>Probabilistic Engineering Mechanics</i> , 2021 , 64, 103127	2.6	4
119	Optimal design of nonlinear energy sinks for mitigation of seismic response on structural systems. <i>Engineering Structures</i> , 2021 , 232, 111756	4.7	3
118	Viscous inertial mass damper (VIMD) for seismic responses control of the coupled adjacent buildings. <i>Engineering Structures</i> , 2021 , 233, 111876	4.7	5
117	Simultaneous optimization of topology and supplemental damping distribution for buildings subjected to stochastic excitation. <i>Structural Control and Health Monitoring</i> , 2021 , 28, e2737	4.5	3
116	Efficient and high-precision time synchronization for wireless monitoring of civil infrastructure subjected to sudden events. <i>Structural Control and Health Monitoring</i> , 2021 , 28,	4.5	5
115	Homography-based structural displacement measurement for large structures using unmanned aerial vehicles. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2021 , 36, 1114-1128	8.4	15
114	Mapping temperature contours for a long-span steel truss arch bridge based on field monitoring data. <i>Journal of Civil Structural Health Monitoring</i> , 2021 , 11, 725-743	2.9	3
113	A Roadmap for Sustainable Smart Track Wireless Continuous Monitoring of Railway Track Condition. <i>Sustainability</i> , 2021 , 13, 7456	3.6	1
112	Multiaxial Real-Time Hybrid Simulation for Substructuring with Multiple Boundary Points. <i>Journal of Structural Engineering</i> , 2021 , 147, 05021007	3	0
111	Detection of uneven hoisting of a Tainter lock gate: a case study for The Dalles Lock and Dam. <i>Journal of Civil Structural Health Monitoring</i> , 2020 , 10, 557-571	2.9	2
110	Decoupled model-based real-time hybrid simulation with multi-axial load and boundary condition boxes. <i>Engineering Structures</i> , 2020 , 219, 110868	4.7	3

109	Detection and localization of rebar in concrete by deep learning using ground penetrating radar. <i>Automation in Construction</i> , 2020 , 118, 103279	9.6	32
108	Toward data anomaly detection for automated structural health monitoring: Exploiting generative adversarial nets and autoencoders. <i>Structural Health Monitoring</i> , 2020 , 147592172092460	4.4	27
107	MaDnet: multi-task semantic segmentation of multiple types of structural materials and damage in images of civil infrastructure. <i>Journal of Civil Structural Health Monitoring</i> , 2020 , 10, 757-773	2.9	23
106	Maintaining Bridge Alignment during Seismic Events: Shear Key Design and Implementation Guidelines. <i>Journal of Bridge Engineering</i> , 2020 , 25, 04020017	2.7	3
105	Dynamic analysis of track nonlinear energy sinks subjected to simple and stochastic excitations. <i>Earthquake Engineering and Structural Dynamics</i> , 2020 , 49, 863-883	4	9
104	Stochastic sensitivity analysis of energy-dissipating structures with nonlinear viscous dampers by efficient equivalent linearization technique based on explicit time-domain method. <i>Probabilistic Engineering Mechanics</i> , 2020 , 61, 103080	2.6	8
103	Deep Bayesian neural networks for damage quantification in miter gates of navigation locks. <i>Structural Health Monitoring</i> , 2020 , 19, 1391-1420	4.4	9
102	Multi-objective design and performance investigation of a high-rise building with track nonlinear energy sinks. <i>Structural Design of Tall and Special Buildings</i> , 2020 , 29, e1692	1.8	10
101	Vision-based automated bridge component recognition with high-level scene consistency. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2020 , 35, 465-482	8.4	32
100	Simulating offset blast loads experimentally using shake-table-generated ground motions: Method development and validation. <i>Structural Control and Health Monitoring</i> , 2020 , 27, e2480	4.5	
99	Modified model-based control of shake tables for online acceleration tracking. <i>Earthquake Engineering and Structural Dynamics</i> , 2020 , 49, 1721-1737	4	8
98	Efficient development of vision-based dense three-dimensional displacement measurement algorithms using physics-based graphics models. <i>Structural Health Monitoring</i> , 2020 , 147592172093952	4.4	6
97	Topology optimization of buildings subjected to stochastic base excitation. <i>Engineering Structures</i> , 2020 , 223, 111111	4.7	7
96	Vision-Based Monitoring of Post-Tensioned Diagonals on Miter Lock Gate. <i>Journal of Structural Engineering</i> , 2020 , 146, 04020209	3	3
95	Development of Synchronized High-Sensitivity Wireless Accelerometer for Structural Health Monitoring. <i>Sensors</i> , 2020 , 20,	3.8	10
94	Autonomous end-to-end wireless monitoring system for railroad bridges. <i>Advances in Bridge Engineering</i> , 2020 , 1,	1.1	4
93	Stochastic Analysis of Rolling Resistance Energy Dissipation for a Tractor-Trailer Model. <i>Transportation Research Record</i> , 2019 , 2673, 593-603	1.7	7
92	Optimization of damped outrigger systems subject to stochastic excitation. <i>Engineering Structures</i> , 2019 , 191, 280-291	4.7	24

91	Hybrid Polarimetric GPR Calibration and Elongated Object Orientation Estimation. <i>IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing</i> , 2019 , 12, 2080-2087	4.7	22
90	Sensor fault management techniques for wireless smart sensor networks in structural health monitoring. <i>Structural Control and Health Monitoring</i> , 2019 , 26, e2362	4.5	15
89	Multiscale Random Fields-Based Damage Modeling and Analysis of Concrete Structures. <i>Journal of Engineering Mechanics - ASCE</i> , 2019 , 145, 04019045	2.4	4
88	Advances in Computer Vision-Based Civil Infrastructure Inspection and Monitoring. <i>Engineering</i> , 2019 , 5, 199-222	9.7	251
87	Experimental Investigation of Beam-Column Joints with Cast Steel Stiffeners for Progressive Collapse Prevention. <i>Journal of Structural Engineering</i> , 2019 , 145, 04019020	3	7
86	Development and full-scale validation of high-fidelity data acquisition on a next-generation wireless smart sensor platform. <i>Advances in Structural Engineering</i> , 2019 , 22, 3512-3533	1.9	18
85	Analysis of the Seismic Vulnerability of Buildings in the Lushan Ms7.0 Earthquake in the Sichuan Province of China. <i>Journal of Earthquake Engineering</i> , 2019 , 1-29	1.8	2
84	Topology optimization framework for structures subjected to stationary stochastic dynamic loads. <i>Structural and Multidisciplinary Optimization</i> , 2019 , 59, 813-833	3.6	25
83	Stochastic optimisation of buckling restrained braced frames under seismic loading. <i>Structure and Infrastructure Engineering</i> , 2018 , 14, 1386-1401	2.9	11
82	Multi-level damage identification of a bridge structure: a combined numerical and experimental investigation. <i>Engineering Structures</i> , 2018 , 156, 53-67	4.7	16
81	ANFIS based quadrotor drone altitude control implementation on Raspberry Pi platform. <i>Analog Integrated Circuits and Signal Processing</i> , 2018 , 95, 435-445	1.2	9
80	Automated damage detection in miter gates of navigation locks. <i>Structural Control and Health Monitoring</i> , 2018 , 25, e2053	4.5	16
79	Design criteria for dissipative devices in coupled oscillators under seismic excitation. <i>Structural Control and Health Monitoring</i> , 2018 , 25, e2167	4.5	9
78	Shake Table Tests of Tall-Pier Bridges to Evaluate Seismic Performance. <i>Journal of Bridge Engineering</i> , 2018 , 23, 04018058	2.7	35
77	A novel distribution regression approach for data loss compensation in structural health monitoring. <i>Structural Health Monitoring</i> , 2018 , 17, 1473-1490	4.4	20
76	Structural Displacement Measurement Using an Unmanned Aerial System. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2018 , 33, 183-192	8.4	92
75	Sudden Event Monitoring of Civil Infrastructure Using Demand-Based Wireless Smart Sensors. <i>Sensors</i> , 2018 , 18,	3.8	18
74	Development of a High-Sensitivity Wireless Accelerometer for Structural Health Monitoring. <i>Sensors</i> , 2018 , 18,	3.8	39

73	Simultaneous Estimation of Rebar Diameter and Cover Thickness by a GPR-EMI Dual Sensor. <i>Sensors</i> , 2018 , 18,	3.8	26
72	Monitoring of chloride-induced corrosion in steel rebars. <i>Corrosion Engineering Science and Technology</i> , 2018 , 53, 601-610	1.7	4
71	Reference-free structural dynamic displacement estimation method. <i>Structural Control and Health Monitoring</i> , 2018 , 25, e2209	4.5	15
70	Consequence-based management of railroad bridge networks. <i>Structure and Infrastructure Engineering</i> , 2017 , 13, 273-286	2.9	15
69	Railroad bridge monitoring using wireless smart sensors. <i>Structural Control and Health Monitoring</i> , 2017 , 24, e1863	4.5	47
68	Inertial mass damper for mitigating cable vibration. <i>Structural Control and Health Monitoring</i> , 2017 , 24, e1986	4.5	62
67	Experimental Study on Passive Negative Stiffness Damper for Cable Vibration Mitigation. <i>Journal of Engineering Mechanics - ASCE</i> , 2017 , 143, 04017070	2.4	54
66	Performance-based optimization of nonlinear structures subject to stochastic dynamic loading. <i>Engineering Structures</i> , 2017 , 134, 334-345	4.7	20
65	Stochastic Analysis of Energy Dissipation of a Half-Car Model on Nondeformable Rough Pavement. <i>Journal of Transportation Engineering Part B: Pavements</i> , 2017 , 143, 04017016	1.4	11
64	Optimization of Structures Subject to Stochastic Dynamic Loading. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2017 , 32, 657-673	8.4	42
63	Model-based framework for multi-axial real-time hybrid simulation testing. <i>Earthquake Engineering and Engineering Vibration</i> , 2017 , 16, 671-691	2	28
62	New Stochastic Approach of Vehicle Energy Dissipation on Nondeformable Rough Pavements. <i>Journal of Engineering Mechanics - ASCE</i> , 2017 , 143, 04016118	2.4	12
61	Response attenuation in a large-scale structure subjected to blast excitation utilizing a system of essentially nonlinear vibration absorbers. <i>Journal of Sound and Vibration</i> , 2017 , 389, 52-72	3.9	44
60	Cross-Correlation-Based Structural System Identification Using Unmanned Aerial Vehicles. <i>Sensors</i> , 2017 , 17,	3.8	43
59	Recent advances in wireless smart sensors for multi-scale monitoring and control of civil infrastructure. <i>Journal of Civil Structural Health Monitoring</i> , 2016 , 6, 17-41	2.9	49
58	Improving Situational Awareness of the As-Is Building Conditions through Multi-Modal Sensing and Analytics Using Thermal Camera-Equipped Smartphones 2016 ,		1
57	Probabilistic Assessment of High-Throughput Wireless Sensor Networks. <i>Sensors</i> , 2016 , 16,	3.8	3
56	Numerical and experimental study of the performance of a single-sided vibro-impact track nonlinear energy sink. <i>Earthquake Engineering and Structural Dynamics</i> , 2016 , 45, 635-652	4	28

55	Experimental study of track nonlinear energy sinks for dynamic response reduction. <i>Engineering Structures</i> , 2015 , 94, 9-15	4.7	46
54	Adaptive position tracking control of electro-hydraulic six-degree-of-freedom driving simulator subject to perturbation. <i>Simulation</i> , 2015 , 91, 265-275	1.2	9
53	Multiple Degrees of Freedom Positioning Correction for Hybrid Simulation. <i>Journal of Earthquake Engineering</i> , 2015 , 19, 277-296	1.8	9
52	Track Nonlinear Energy Sink for Rapid Response Reduction in Building Structures. <i>Journal of Engineering Mechanics - ASCE</i> , 2015 , 141, 04014104	2.4	37
51	Adaptive model-based tracking control for real-time hybrid simulation. <i>Bulletin of Earthquake Engineering</i> , 2015 , 13, 1633-1653	3.7	21
50	System identification of a historic swing truss bridge using a wireless sensor network employing orientation correction. <i>Structural Control and Health Monitoring</i> , 2015 , 22, 255-272	4.5	25
49	Model-based multi-metric control of uniaxial shake tables. <i>Earthquake Engineering and Structural Dynamics</i> , 2014 , 43, 681-699	4	42
48	Direct performance-based design with 200kN MR dampers using multi-objective cost effective optimization for steel MRFs. <i>Engineering Structures</i> , 2014 , 71, 60-72	4.7	21
47	A phased approach to enable hybrid simulation of complex structures. <i>Earthquake Engineering and Engineering Vibration</i> , 2014 , 13, 63-77	2	4
46	Fuzzy Analytic Hierarchy Process Synthetic Evaluation Models for the Health Monitoring of Shield Tunnels. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2014 , 29, 676-688	8.4	48
45	Large-scale experimental evaluation and numerical simulation of a system of nonlinear energy sinks for seismic mitigation. <i>Engineering Structures</i> , 2014 , 77, 34-48	4.7	60
44	Design, simulation, and large-scale testing of an innovative vibration mitigation device employing essentially nonlinear elastomeric springs. <i>Earthquake Engineering and Structural Dynamics</i> , 2014 , 43, 1829-1851 ²⁸	4	28
43	Parametric time-domain identification of multiple-input systems using decoupled output signals. <i>Earthquake Engineering and Structural Dynamics</i> , 2014 , 43, 1307-1324	4	8
42	Multiaxial active isolation for seismic protection of buildings. <i>Structural Control and Health Monitoring</i> , 2014 , 21, 484-502	4.5	8
41	Nature of seismic control force in acceleration feedback. <i>Structural Control and Health Monitoring</i> , 2013 , 20, 789-803	4.5	9
40	TinyOS-based real-time wireless data acquisition framework for structural health monitoring and control. <i>Structural Control and Health Monitoring</i> , 2013 , 20, 1007-1020	4.5	52
39	Hybrid system identification for high-performance structural control. <i>Engineering Structures</i> , 2013 , 56, 443-456	4.7	4
38	Feasibility of displacement monitoring using low-cost GPS receivers. <i>Structural Control and Health Monitoring</i> , 2013 , 20, 1240-1254	4.5	39

37	Bayesian Updating of Fragility Functions Using Hybrid Simulation. <i>Journal of Structural Engineering</i> , 2013 , 139, 1160-1171	3	20
36	Numerical and experimental investigation of a highly effective single-sided vibro-impact non-linear energy sink for shock mitigation. <i>International Journal of Non-Linear Mechanics</i> , 2013 , 52, 96-109	2.8	103
35	Corrosion Estimation of a Historic Truss Bridge Using Model Updating. <i>Journal of Bridge Engineering</i> , 2013 , 18, 678-689	2.7	26
34	Model-Based Feedforward-Feedback Actuator Control for Real-Time Hybrid Simulation. <i>Journal of Structural Engineering</i> , 2013 , 139, 1205-1214	3	57
33	Model-Based Multiactuator Control for Real-Time Hybrid Simulation. <i>Journal of Engineering Mechanics - ASCE</i> , 2013 , 139, 219-228	2.4	41
32	Erratum for Bridge Seismic Retrofit Program Planning to Maximize Postearthquake Transportation Network Capacity by Liang Chang, Fan Peng, Yanfeng Ouyang, Amr S. Elnashai, and Billie F. Spencer Jr.. <i>Journal of Infrastructure Systems</i> , 2013 , 19, 506-506	2.9	
31	Passive damping enhancement of a two-degree-of-freedom system through a strongly nonlinear two-degree-of-freedom attachment. <i>Journal of Sound and Vibration</i> , 2012 , 331, 5393-5407	3.9	66
30	Bridge Seismic Retrofit Program Planning to Maximize Postearthquake Transportation Network Capacity. <i>Journal of Infrastructure Systems</i> , 2012 , 18, 75-88	2.9	62
29	Full-Scale Experimental Validation of High-Fidelity Wireless Measurement on a Historic Truss Bridge. <i>Advances in Structural Engineering</i> , 2011 , 14, 93-101	1.9	11
28	Enabling framework for structural health monitoring using smart sensors. <i>Structural Control and Health Monitoring</i> , 2011 , 18, 574-587	4.5	40
27	Sensitivity-Based External Calibration of Multiaxial Loading System. <i>Journal of Engineering Mechanics - ASCE</i> , 2010 , 136, 189-198	2.4	5
26	Damper placement for seismic control of super-long-span suspension bridges based on the first-order optimization method. <i>Science China Technological Sciences</i> , 2010 , 53, 2008-2014	3.5	19
25	Active base isolation of buildings subjected to seismic excitations. <i>Earthquake Engineering and Structural Dynamics</i> , 2010 , 39, 1493-1512	4	30
24	Automated decentralized modal analysis using smart sensors. <i>Structural Control and Health Monitoring</i> , 2010 , 17, 872-894	4.5	40
23	A mixed H2/H _∞ based semiactive control for vibration mitigation in flexible structures 2009 ,		1
22	Semiactive Backstepping Control for Vibration Reduction in a Structure with Magnetorheological Damper Subject to Seismic Motions. <i>Journal of Intelligent Material Systems and Structures</i> , 2009 , 20, 2037-2053	2.3	20
21	Virtual laboratory for experimental structural dynamics. <i>Computer Applications in Engineering Education</i> , 2009 , 17, 80-88	1.6	12
20	Real-time hybrid testing of semiactive control strategies for vibration reduction in a structure with MR damper. <i>Structural Control and Health Monitoring</i> , 2009 , 17, n/a-n/a	4.5	23

19	Autonomous decentralized structural health monitoring using smart sensors. <i>Structural Control and Health Monitoring</i> , 2009 , 16, n/a-n/a	4.5	9
18	MAEviz: Bridging the Time-from-Discovery Gap between Seismic Research and Decision Making 2008 ,		1
17	Overview and Applications of Maeviz-Hazturk 2007. <i>Journal of Earthquake Engineering</i> , 2008 , 12, 100-108.8		25
16	Damage detection in ambient vibration using proportional flexibility matrix with incomplete measured DOFs. <i>Structural Control and Health Monitoring</i> , 2007 , 14, 186-196	4.5	43
15	SENSOR DEVELOPMENT USING BERKELEY MOTE PLATFORM. <i>Journal of Earthquake Engineering</i> , 2006 , 10, 289-309	1.8	22
14	RATIONAL POLYNOMIAL APPROXIMATION MODELLING FOR ANALYSIS OF STRUCTURES WITH VE DAMPERS. <i>Journal of Earthquake Engineering</i> , 2006 , 10, 97-125	1.8	8
13	Distributed computing strategy for structural health monitoring. <i>Structural Control and Health Monitoring</i> , 2006 , 13, 488-507	4.5	75
12	Java-powered virtual laboratories for earthquake engineering education. <i>Computer Applications in Engineering Education</i> , 2005 , 13, 200-212	1.6	20
11	Control of Wind-Induced Nonlinear Oscillations in Suspended Cables. <i>Nonlinear Dynamics</i> , 2004 , 37, 341-355		26
10	A two-step identification technique for semiactive control systems. <i>Structural Control and Health Monitoring</i> , 2004 , 11, 273-289	4.5	12
9	Smart sensing technology: opportunities and challenges. <i>Structural Control and Health Monitoring</i> , 2004 , 11, 349-368	4.5	345
8	Hybrid seismic protection of cable-stayed bridges. <i>Earthquake Engineering and Structural Dynamics</i> , 2004 , 33, 795-820	4	16
7	Dynamic Modeling of Large-Scale Magnetorheological Damper Systems for Civil Engineering Applications. <i>Journal of Engineering Mechanics - ASCE</i> , 2004 , 130, 1107-1114	2.4	152
6	Shock isolation using smart damping. <i>Structural Control and Health Monitoring</i> , 2002 , 9, 135-152		1
5	Predictive model for fatigue life in parallel-wire stay cables considering corrosion variability. <i>Structure and Infrastructure Engineering</i> , 1-14	2.9	0
4	Fatigue life updating of embedded miter gate anchorages of navigation locks using full-scale laboratory testing. <i>Structure and Infrastructure Engineering</i> , 1-17	2.9	0
3	Real-time hybrid testing for efficiency assessment of magnetorheological dampers to mitigate train-induced vibrations in bridges. <i>International Journal of Rail Transportation</i> , 1-20	2.1	1
2	Fatigue life evaluation model for high-strength steel wire considering different levels of corrosion. <i>Structure and Infrastructure Engineering</i> , 1-11	2.9	2

- 1 Investigation on the mapping for temperature-induced responses of a long-span steel truss arch bridge. *Structure and Infrastructure Engineering*,1-18 2.9 0