Sean N Brennan

List of Publications by Year
in descending order

114 papers	1,161 citations	430874 18 h-index
114 all docs	114 docs citations	114 times ranked

501196 28 g-index
1113 citing authors

#	ARTICLE	IF	CITATIONS
1	Observability and Controllability of Nonlinear Networks: The Role of Symmetry. Physical Review X, 2015, 5, .	8.9	100
2	From user requirements to commonality specifications: an integrated approach to product family design. Research in Engineering Design - Theory, Applications, and Concurrent Engineering, 2012, 23, 141-153.	2.1	74
3	Model-based Prediction of Skid-steer Robot Kinematics Using Online Estimation of Track Instantaneous Centers of Rotation. Journal of Field Robotics, 2014, 31, 455-476.	6.0	63
4	Analytical Prediction of Self-Organized Traffic Jams as a Function of Increasing ACC Penetration. IEEE Transactions on Intelligent Transportation Systems, 2012, 13, 1782-1791.	8.0	52
5	The Illinois Roadway Simulator: a mechatronic testbed for vehicle dynamics and control. IEEE/ASME Transactions on Mechatronics, 2000, 5, 349-359.	5.8	41
6	Scaling of hybrid-electric vehicle powertrain components for Hardware-in-the-loop simulation. Mechatronics, 2009, 19, 1078-1090.	3.3	39
7	Vehicle Localization Using In-Vehicle Pitch Data and Dynamical Models. IEEE Transactions on Intelligent Transportation Systems, 2015, 16, 206-220.	8.0	37
8	Bridging the gap between sensor noise modeling and sensor characterization. Measurement: Journal of the International Measurement Confederation, 2018, 116, 350-366.	5.0	36
9	Terrain-based road vehicle localisation using particle filters. Vehicle System Dynamics, 2011, 49, 1209-1223.	3.7	30
10	Robust Scalable Vehicle Control via Non-Dimensional Vehicle Dynamics. Vehicle System Dynamics, 2001, 36, 255-277.	3.7	26
11	Terrainâ€based vehicle orientation estimation combining vision and inertial measurements. Journal of Field Robotics, 2008, 25, 181-202.	6.0	25
12	Analyzing the influence of median cross-section design on highway safety using vehicle dynamics simulations. Accident Analysis and Prevention, 2010, 42, 1769-1777.	5.7	23
13	RADARODO: Ego-Motion Estimation From Doppler and Spatial Data in RADAR Images. IEEE Transactions on Intelligent Vehicles, 2020, 5, 475-484.	12.7	23
14	Dimensionless robust control with application to vehicles. IEEE Transactions on Control Systems Technology, 2005, 13, 624-630.	5.2	21
15	Terrain-based road vehicle localization on multi-lane highways. , 2009, , .		21
16	Zero-moment point determination of worst-case manoeuvres leading to vehicle wheel lift. Vehicle System Dynamics, 2012, 50, 191-214.	3.7	21
17	Determining Gravimetric Bark Content in Cotton with Machine Vision. Textile Reseach Journal, 1998, 68, 94-104.	2.2	20
18	Fidelity of using scaled vehicles for chassis dynamic studies. Vehicle System Dynamics, 2009, 47, 1401-1437.	3.7	20

#	Article	IF	Citations
19	Superelevation Design for Sharp Horizontal Curves on Steep Grades. Transportation Research Record, 2014, 2436, 81-91.	1.9	20
20	Superelevation Criteria for Sharp Horizontal Curves on Steep Grades. , 2014, , .		20
21	An Examination of Vehicle Spacing to Reduce Aerodynamic Drag in Truck Platoons. , 2018, , .		19
22	Experimentally Verified Optimal Serpentine Gait and Hyperredundancy of a Rigid-Link Snake Robot. IEEE Transactions on Robotics, 2008, 24, 348-360.	10.3	18
23	Terrain-based road vehicle localization using particle filters. , 2008, , .		18
24	Maximizing Parameter Identifiability of an Equivalent-Circuit Battery Model Using Optimal Periodic Input Shaping. , 2014, , .		18
25	Pitch based vehicle localization using time series subsequence matching with Multi-scale Extrema Features. , 2011, , .		17
26	Robust Extrema Features for Time-Series Data Analysis. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2013, 35, 1464-1479.	13.9	16
27	GPS-Free Terrain-Based Vehicle Tracking Performance as a Function of Inertial Sensor Characteristics. , 2011, , .		15
28	On-line estimation of vehicle motion and power model parameters for skid-steer robot energy use prediction. , 2014, , .		15
29	The use of unicycle robot control strategies for skid-steer robots through the ICR kinematic mapping. , 2014, , .		14
30	Scaling of hybrid electric vehicle powertrain components for hardware-in-the-loop simulation. , 2008, , .		13
31	Highway Evaluation of Terrain-Aided Localization Using Particle Filters. , 2008, , .		12
32	On the required complexity of vehicle dynamic models for use in simulation-based highway design. Journal of Safety Research, 2014, 49, 105.e1-112.	3.6	12
33	Preview Horizon Analysis for Vehicle Rollover Prevention Using the Zero-Moment Point. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2015, 137, .	1.6	12
34	Extending driving simulator capabilities toward Hardware-in-the-Loop testbeds and remote vehicle interfaces. , 2013, , .		11
35	Dynamic Prediction of Vehicle Cluster Distribution in Mixed Traffic: A Statistical Mechanics-Inspired Method. IEEE Transactions on Intelligent Transportation Systems, 2015, 16, 2424-2434.	8.0	11
36	Development of an Open-Source Tractor Driving Simulator for Tractor Stability Tests. Journal of Agricultural Safety and Health, 2016, 22, 227-246.	0.4	11

#	ARTICLE	IF	CITATIONS
37	Energy-based path planning for skid-steer vehicles operating in areas with mixed surface types. , 2016, , .		11
38	Terrain-aware rollover prediction for ground vehicles using the zero-moment point method. , 2010, , .		10
39	Terrain-based vehicle localization from real-time data using dynamical models. , 2012, , .		10
40	Lateral Vehicle State and Environment Estimation Using Temporally Previewed Mapped Lane Features. IEEE Transactions on Intelligent Transportation Systems, 2015, 16, 1601-1608.	8.0	10
41	Simulating vehicle dynamics on both design plans and laser-scanned road geometry to guide highway design policy. Transportation Research Part C: Emerging Technologies, 2015, 50, 28-36.	7.6	10
42	Comparing batteries to generators as power sources for use with mobile robotics. Journal of Power Sources, 2012, 212, 130-138.	7.8	9
43	Real-time identification of vehicle chassis dynamics using a novel reparameterization based on sensitivity invariance. International Journal of Adaptive Control and Signal Processing, 2004, 18, 103-123.	4.1	8
44	A Comparative, Experimental Study of Model Suitability to Describe Vehicle Rollover Dynamics for Control Design. , 2005, , 405.		8
45	MPC-Based Energy Management of a Parallel Hybrid Electric Vehicle Using Terrain Information. , 2015, , .		7
46	Variable-sensitivity road departure warning system based on static, mapped, near-road threats. , 2016, , .		7
47	Energy-Aware Path Planning for Skid-Steer Robots Operating on Hilly Terrain. , 2020, , .		7
48	Improving Lithium-Ion Battery Pack Diagnostics by Optimizing the Internal Allocation of Demand Current for Parameter Identifiability. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2017, 139, .	1.6	6
49	Terrain-Aided Localization Using Feature-Based Particle Filtering. , 2011, , .		5
50	Robust map design by outlier point selection for terrain-based vehicle localization. , 2013, , .		5
51	Characterizing Successful Robotic Insertion and Removal From a Dry Storage Cask Using Peg-Like Jamming and Wedging Analysis. , 2016, , .		5
52	Doppler Velocity Log Placement Effects on Autonomous Underwater Vehicle Navigation Accuracy. , 2018, , .		5
53	Friction detection from stationary steering manoeuvres. Vehicle System Dynamics, 2020, 58, 1736-1765.	3.7	5
54	At what cost? How planned collisions with pedestrians may save lives. Accident Analysis and Prevention, 2020, 141, 105492.	5.7	5

#	ARTICLE	IF	CITATIONS
55	Improvements in terrain-based road vehicle localization by initializing an Unscented Kalman Filter using Particle Filters. , 2010, , .		4
56	Observability of neuronal network motifs. , 2012, 2012, .		4
57	Extending driving simulator capabilities toward Hardware-in-the-Loop testbeds and remote vehicle interfaces. , 2013, , .		4
58	Low-order modeling of vehicle impacts upon boulders embedded in cohesionless soil. International Journal of Impact Engineering, 2015, 75, 88-99.	5.0	4
59	Modeling and friction estimation for automotive steering torque at very low speeds. Vehicle System Dynamics, 2021, 59, 458-484.	3.7	4
60	Editorial: Special Issue on Control Applications in Automotive Engineering. IEEE Transactions on Control Systems Technology, 2007, 15, 403-405.	5.2	3
61	Optimally robust extrema filters for time series data. , 2012, , .		3
62	GPS-free terrain-based vehicle tracking on road networks. , 2012, , .		3
63	Statistical mechanics-inspired framework for studying the effects of mixed traffic flows on highway congestion. , 2014, , .		3
64	Open-loop vehicle collision avoidance and rollover prevention using previewed Zero-Moment Point. , 2014, , .		3
65	Vehicle road departure detection using anomalies in dynamics. , 2016, , .		3
66	Fast Allan Variance (FAVAR) and Dynamic Fast Allan Variance (D-FAVAR) Algorithms for both Regularly and Irregularly Sampled Data. IFAC-PapersOnLine, 2021, 54, 26-31.	0.9	3
67	Cooperative Exchange-Based Platooning Using Predicted Fuel-Optimal Operation of Heavy-Duty Vehicles. IEEE Transactions on Intelligent Transportation Systems, 2022, 23, 17312-17324.	8.0	3
68	A low-order dynamic model of a tracked robot inclusive of non-linear slip. International Journal of Heavy Vehicle Systems, 2008, 15, 327.	0.2	2
69	Determination of Minimum State Preview Time to Prevent Vehicle Rollover. , 2013, , .		2
70	Improving SOC accuracy using collective estimation for Lithium Ion battery cells in series. , 2014, , .		2
71	Identification of locally influential agents in self-organizing multi-agent systems. , 2015, , .		2
72	Effects of symmetry on the structural controllability of neural networks: A perspective. , 2016, 2016, 5785-5790.		2

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73	A ROS-Simulink Real-Time Communication Bridge Using UDP With a Driver-in-the-Loop Application. , 2016, , .		2
74	Mechanical Performance Analysis of ULTEM 9085 in a Heated, Irradiated Environment. , 2018, , .		2
75	Negative Obstacle Detection Using LiDAR Sensors for a Robotic Wheelchair. , 2018, , .		2
76	Lessons Learned From Matching Experimental Data to Low-Order Models of Vehicle Behavior. , 2007, , .		2
77	Allan Variance-based Granulation Technique for Large Temporal Databases. , 2021, , .		2
78	ROS Integration of External Vehicle Motion Simulations with an AIMSUN Traffic Simulator as a Tool to Assess CAV Impacts on Traffic. IFAC-PapersOnLine, 2021, 54, 870-875.	0.9	2
79	Onâ€line estimation of power model parameters for skidâ€steer robots with applications in mission energy use prediction. Journal of Field Robotics, 2022, 39, 763-782.	6.0	2
80	Utilization of Vehicle Dynamic Simulations as Predictors of Highway Safety. , 2007, , 157.		1
81	Design and development of a family of explosive ordnance disposal (EOD) robots. , 2008, , .		1
82	Model-Based Vehicle State Estimation Using Previewed Road Geometry and Noisy Sensors. , 2012, , .		1
83	Simulation, Design, and Verification of an Electrified Bicycle Energy Model. , 2012, , .		1
84	Investigation of the effect of continuously variable transmissions on ground robot powertrain efficiency. , 2012, , .		1
85	Global and local frameworks for vehicle state estimation using temporally previewed mapped lane features. , 2013, , .		1
86	Global and local frameworks for vehicle state estimation using temporally previewed mapped lane features. , 2013, , .		1
87	Robust data map design using chance constrained optimization. , 2014, , .		1
88	Indoor Mapping and Localization for a Smart Wheelchair Using Measurements of Ambient Magnetic Fields. , 2015, , .		1
89	Nuclear Storage Cask Inspection Robotics As a Case Study in System Design Challenges. , 2018, , .		1
90	Extracting Geometric Road Centerline and Lane Edges from Single-Scan LiDAR Intensity Using Optimally Filtered Extrema Features. , 2018, , .		1

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91	Change Propagation During Protoyping: A Case Study of a Robotic Inspection System for Dry Nuclear Waste Storage Casks. , 2018, , .		1
92	Motion Estimation From Doppler and Spatial Data in SONAR Images. IEEE Journal of Oceanic Engineering, 2021, 46, 665-674.	3.8	1
93	Discriminating Spatial Intent From Noisy Joystick Signals for Wheelchair Path Planning and Guidance. , 2018, , .		1
94	An Instantaneous Center of Rotation-Based Extended Kalman Filter Approach for the On-Line Estimation of Wheelchair Tire Slip. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2019, 141, .	1.6	1
95	Diesel Engine Characterization and Performance Scaling via Brake Specific Fuel Consumption Map Dimensional Analysis. , 2019, , .		1
96	VEHICLE STATE ESTIMATION USING VISION AND INERTIAL MEASUREMENTS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 63-70.	0.4	0
97	Reduction in the Number of Gain-Scheduling Parameters Using Dimensional Transformation. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2008, 130, .	1.6	0
98	A failure rate analysis of complex vehicles. International Journal of Heavy Vehicle Systems, 2010, 17, 76.	0.2	0
99	From User Requirements to Commonality Specifications: An Integrated Approach to Product Family Design. , 2010, , .		0
100	Monitoring delayed systems using the Smith Predictor. , 2012, , .		0
101	Differential Diagnostics for Lithium Ion Battery Cells Connected in Series. , 2014, , .		0
102	Temporal preview estimation for design of a low cost lane-following system using a forward-facing monocular camera. , 2014, , .		0
103	Multi-attribute data dynamics discontinuity identification: A probabilistic approach using linear modeling. , 2014, , .		0
104	Vehicle Rollover Prevention Using the Zero-Moment Point in an LQR Output Regulator. , 2015, , .		0
105	State of Charge Estimation for an Electric Wheelchair Using a Fuel Gauge Model. , 2016, , .		0
106	On-Line Estimation of Wheelchair Tire Slip Utilizing an Instantaneous Center of Rotation Extended Kalman Filter. , 2016, , .		0
107	Region of Attraction for a Vehicle Pose Estimator Utilizing Monocular Vision and Lane Marker Maps. , 2016, , .		0
108	Ego-Motion Estimate Corruption Due to Violations of the Range Flow Constraint. , 2018, , .		0

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109	Dimensionless Sensitivity Methods to Identify Vehicle Cornering Stiffness From Yaw Rate Measurements. , 2003, , .		0
110	Simplifying Robust Control Designs of Parametric Uncertain Systems Using Dimensional Transformations. , 2005, , .		0
111	Pattern Matching of In-Vehicle Acceleration Time Series Data. , 2012, , .		0
112	Statistical Determination of Decision-Making Regions for Branching Paths: An Algorithm With a Wheelchair Assistance Application. ASME Letters in Dynamic Systems and Control, 2021, 1, .	0.7	0
113	Increasing Efficiency of Grid Free Path Planning by Bounding the Search Region*. , 2020, , .		0
114	Defining the Operational Cost of En-Route Platoon Formation Scenarios. , 2021, , .		0