Imme Ebert-Uphoff

List of Publications by Year
in descending order

61 papers	2,619 citations	361045 20 h-index	288905 40 g-index
69 all docs	69 docs citations	69 times ranked	1889 citing authors

#	Article	IF	Citations
1	Machine Learning for the Geosciences: Challenges and Opportunities. IEEE Transactions on Knowledge and Data Engineering, 2019, 31, 1544-1554.	4.0	287
2	Wrench-feasible workspace generation for cable-driven robots. , 2006, 22, 890-902.		205
3	Useful metrics for modular robot motion planning. IEEE Transactions on Automation Science and Engineering, 1997, 13, 531-545.	2.4	199
4	Physically Interpretable Neural Networks for the Geosciences: Applications to Earth System Variability. Journal of Advances in Modeling Earth Systems, 2020, 12, e2019MS002002.	1.3	140
5	Evaluating efficiency of self-reconfiguration in a class of modular robots. Journal of Field Robotics, 1996, 13, 317-338.	0.7	127
6	Causal Discovery for Climate Research Using Graphical Models. Journal of Climate, 2012, 25, 5648-5665.	1.2	126
7	Wrench-based analysis of cable-driven robots. , 2004, , .		83
8	Viewing Forced Climate Patterns Through an AI Lens. Geophysical Research Letters, 2019, 46, 13389-13398.	1.5	78
9	Inverse kinematics of discretely actuated hyper-redundant manipulators using workspace densities. , 0, , .		75
10	Static Balancing of Spatial Parallel Platform Mechanismsâ€"Revisited. Journal of Mechanical Design, Transactions of the ASME, 2000, 122, 43-51.	1.7	75
11	Intelligent systems for geosciences. Communications of the ACM, 2018, 62, 76-84.	3.3	71
12	On the connections between cable-driven robots, parallel manipulators and grasping. , 2004, , .		70
13	Force-feasible workspace analysis for underconstrained, point-mass cable robots. , 2004, , .		67
14	Numerical convolution on the Euclidean group with applications to workspace generation. IEEE Transactions on Automation Science and Engineering, 1998, 14, 123-136.	2.4	60
15	Locally Linearized Dynamic Analysis of Parallel Manipulators and Application of Input Shaping to Reduce Vibrations. Journal of Mechanical Design, Transactions of the ASME, 2004, 126, 156-168.	1.7	56
16	Evaluating lossy data compression on climate simulation data within a large ensemble. Geoscientific Model Development, 2016, 9, 4381-4403.	1.3	56
17	Efficient workspace generation for binary manipulators with many actuators. Journal of Field Robotics, 1995, 12, 383-400.	0.7	54
18	Evaluation, Tuning, and Interpretation of Neural Networks for Working with Images in Meteorological Applications. Bulletin of the American Meteorological Society, 2020, 101, E2149-E2170.	1.7	51

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19	Indicator Patterns of Forced Change Learned by an Artificial Neural Network. Journal of Advances in Modeling Earth Systems, 2020, 12, e2020MS002195.	1.3	47
20	A new type of climate network based on probabilistic graphical models: Results of boreal winter versus summer. Geophysical Research Letters, 2012, 39, .	1.5	46
21	Overarching framework for measuring closeness to singularities of parallel manipulators. , 2005, 21, 1037-1045.		45
22	Tropospheric and Stratospheric Causal Pathways Between the MJO and NAO. Journal of Geophysical Research D: Atmospheres, 2019, 124, 9356-9371.	1.2	44
23	Characteristic tetrahedron of wrench singularities for parallel manipulators with three legs. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2002, 216, 81-93.	1.1	32
24	Measuring "closeness" to singularities for parallel manipulators. , 2004, , .		32
25	Performance Measures For Input Shaping and Command Generation. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2006, 128, 731-736.	0.9	30
26	Development and Interpretation of a Neural-Network-Based Synthetic Radar Reflectivity Estimator Using GOES-R Satellite Observations. Journal of Applied Meteorology and Climatology, 2021, 60, 3-21.	0.6	29
27	Neural network attribution methods for problems in geoscience: A novel synthetic benchmark dataset. , 2022, 1, .		29
28	Application of Workspace Generation Techniques to Determine the Unconstrained Motion of Parallel Manipulators. Journal of Mechanical Design, Transactions of the ASME, 2004, 126, 283-290.	1.7	28
29	Application of the antipodal grasp theorem to cable-driven robots. , 2005, 21, 713-718.		27
30	A stability measure for underconstrained cable-driven robots. , 2004, , .		25
31	Why we need to focus on developing ethical, responsible, and trustworthy artificial intelligence approaches for environmental science. , 2022, 1, .		22
32	Finger sculpting with Digital Clay: 3D shape input and output through a computer-controlled real surface. , 0, , .		21
33	Causal Discovery from Spatio-Temporal Data with Applications to Climate Science. , 2014, , .		19
34	Weakening of atmospheric information flow in a warming climate in the Community Climate System Model. Geophysical Research Letters, 2014, 41, 193-200.	1.5	19
35	A study of links between the Arctic and the midlatitude jet stream using Granger and Pearl causality. Environmetrics, 2019, 30, e2540.	0.6	19
36	Active Acceleration Compensation for Transport Vehicles Carrying Delicate Objects. , 2004, 20, 830-839.		16

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37	Causal discovery in the geosciencesâ€"Using synthetic data to learn how to interpret results. Computers and Geosciences, 2017, 99, 50-60.	2.0	16
38	Applying machine learning methods to detect convection using Geostationary Operational Environmental Satellite-16 (GOES-16) advanced baseline imager (ABI) data. Atmospheric Measurement Techniques, 2021, 14, 2699-2716.	1.2	16
39	Preparing for the next century: the state of mechatronics education. IEEE/ASME Transactions on Mechatronics, 2000, 5, 226-227.	3.7	13
40	Bridging sustainability science, earth science, and data science through interdisciplinary education. Sustainability Science, 2020, 15, 647-661.	2.5	13
41	Using deep learning to emulate and accelerate a radiative-transfer model. Journal of Atmospheric and Oceanic Technology, 2021, , .	0.5	13
42	Practical considerations for the static balancing of mechanisms of parallel architecture. Proceedings of the Institution of Mechanical Engineers, Part K: Journal of Multi-body Dynamics, 2002, 216, 73-85.	0.5	12
43	Discretely Actuated Manipulator Workspace Generation by Closed Form Convolution. Journal of Mechanical Design, Transactions of the ASME, 1998, 120, 245-251.	1.7	11
44	Using Deep Learning to Nowcast the Spatial Coverage of Convection from Himawari-8 Satellite Data. Monthly Weather Review, 2021, 149, 3897-3921.	0.5	11
45	Motion planning for active acceleration compensation. , 0, , .		10
46	Strengthened Causal Connections Between the MJO and the North Atlantic With Climate Warming. Geophysical Research Letters, 2021, 48, e2020GL091168.	1.5	9
47	Thoughtfully Using Artificial Intelligence in Earth Science. Eos, 2019, 100, .	0.1	9
48	Disturbance robustness measures for underconstrained cable-driven robots. , 0, , .		8
49	Investigation of the deficiencies of parallel manipulators in singular configurations through the Jacobian nullspace. , 0, , .		7
50	Introducing parallel manipulators through laboratory experiments. IEEE Robotics and Automation Magazine, 2003, 10, 13-19.	2.2	7
51	Detection of Forced Change Within Combined Climate Fields Using Explainable Neural Networks. Journal of Advances in Modeling Earth Systems, 2022, 14, .	1.3	6
52	Discretely actuated manipulator workspace generation using numerical convolution on the Euclidean group. , 0, , .		5
53	New Exploratory Tools for Extremal Dependence: $$chi $$ Networks and Annual Extremal Networks. Journal of Agricultural, Biological, and Environmental Statistics, 2019, 24, 484-501.	0.7	5
54	A Causality-Based View of the Interaction between Synoptic- and Planetary-Scale Atmospheric Disturbances. Journals of the Atmospheric Sciences, 2020, 77, 925-941.	0.6	5

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55	Explainable Artificial Intelligence inÂMeteorology andÂClimate Science: Model Fine-Tuning, Calibrating Trust andÂLearning New Science. Lecture Notes in Computer Science, 2022, , 315-339.	1.0	5
56	Identifying Physical Interactions from Climate Data: Challenges and Opportunities. Computing in Science and Engineering, 2015, 17, 27-34.	1.2	4
57	Discretely Actuated Manipulator Workspace Generation by Closed-Form Convolution. , 1996, , .		4
58	Low Cloud Detection in Multilayer Scenes Using Satellite Imagery with Machine Learning Methods. Journal of Atmospheric and Oceanic Technology, 2022, 39, 319-334.	0.5	4
59	Dynamic modeling of a class of spatial statically-balanced parallel platform mechanisms. , 0, , .		3
60	Three Steps to Successful Collaboration with Data Scientists. Eos, 2017, , .	0.1	3
61	High-Dimensional Dependency Structure Learning for Physical Processes. , 2017, , .		0