

# Hui Liu

## List of Publications by Year in descending order

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148  
papers

6,963  
citations

76294

40  
h-index

62565

80  
g-index

156  
all docs

156  
docs citations

156  
times ranked

3714  
citing authors

#	ARTICLE	IF	CITATIONS
1	General Geometry Calibration Using Arbitrary Free-Form Surface in a Vision-Based Robot System. IEEE Transactions on Industrial Electronics, 2022, 69, 5994-6003.	5.2	11
2	Short-term wind speed forecasting using deep reinforcement learning with improved multiple error correction approach. Energy, 2022, 239, 122128.	4.5	27
3	Characteristic and correlation analysis of metro loads. , 2022, , 237-267.		5
4	Metro traffic flow monitoring and passenger guidance. , 2022, , 33-58.		0
5	Monitoring and spatial prediction of multidimensional air pollutants. , 2022, , 171-200.		0
6	A multimodal approach to chaotic renewable energy prediction using meteorological and historical information. Applied Soft Computing Journal, 2022, 118, 108487.	4.1	26
7	Time series feature extraction and analysis of metro loads. , 2022, , 201-236.		0
8	Monitoring and deterministic prediction of station humidity. , 2022, , 107-134.		0
9	Monitoring and probabilistic prediction of station temperature. , 2022, , 135-169.		0
10	Big Data Analysis of Energy Economics in Photovoltaic Power Generation Market. Management for Professionals, 2022, , 117-136.	0.3	0
11	Big Data Analysis of Energy Economics in Coal Market. Management for Professionals, 2022, , 67-94.	0.3	0
12	Global Energy Internet Green and Low-Carbon Energy Economic Innovation. Management for Professionals, 2022, , 233-258.	0.3	0
13	DESA: a novel hybrid decomposing-ensemble and spatiotemporal attention model for PM2.5 forecasting. Environmental Science and Pollution Research, 2022, 29, 54150-54166.	2.7	17
14	Wind power prediction based on outlier correction, ensemble reinforcement learning, and residual correction. Energy, 2022, 250, 123857.	4.5	27
15	Wind speed forecasting using multi-scale feature adaptive extraction ensemble model with error regression correction. Expert Systems With Applications, 2022, 207, 117358.	4.4	19
16	Hourly traffic flow forecasting using a new hybrid modelling method. Journal of Central South University, 2022, 29, 1389-1402.	1.2	3
17	Dual-stage time series analysis on multifeature adaptive frequency domain modeling. International Journal of Intelligent Systems, 2022, 37, 7837-7856.	3.3	1
18	A new PM2.5 forecasting model based on data preprocessing, reinforcement learning and gated recurrent unit network. Atmospheric Pollution Research, 2022, 13, 101475.	1.8	8

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19	An enhanced hybrid ensemble deep learning approach for forecasting daily PM2.5. Journal of Central South University, 2022, 29, 2074-2083.	1.2	7
20	A new ensemble spatio-temporal PM2.5 prediction method based on graph attention recursive networks and reinforcement learning. Chaos, Solitons and Fractals, 2022, 162, 112405.	2.5	20
21	A novel ensemble reinforcement learning gated unit model for daily PM2.5 forecasting. Air Quality, Atmosphere and Health, 2021, 14, 443-453.	1.5	10
22	A hybrid neural network model for short-term wind speed forecasting based on decomposition, multi-learner ensemble, and adaptive multiple error corrections. Renewable Energy, 2021, 165, 573-594.	4.3	60
23	Single-point wind forecasting methods based on ensemble modeling. , 2021, , 215-250.		0
24	Description methods of spatial wind along railways. , 2021, , 251-282.		2
25	Single-point wind forecasting methods based on reinforcement learning. , 2021, , 177-214.		4
26	Description of single-point wind time series along railways. , 2021, , 69-136.		0
27	Single-point wind forecasting methods based on deep learning. , 2021, , 137-175.		0
28	A hybrid decomposition-boosting model for short-term multi-step solar radiation forecasting with NARX neural network. Journal of Central South University, 2021, 28, 507-526.	1.2	13
29	A spatial multi-resolution multi-objective data-driven ensemble model for multi-step air quality index forecasting based on real-time decomposition. Computers in Industry, 2021, 125, 103387.	5.7	26
30	A Hybrid Neural Network Model for Marine Dissolved Oxygen Concentrations Time-Series Forecasting Based on Multi-Factor Analysis and a Multi-Model Ensemble. Engineering, 2021, 7, 1751-1765.	3.2	18
31	Intelligent modeling strategies for forecasting air quality time series: A review. Applied Soft Computing Journal, 2021, 102, 106957.	4.1	74
32	Dynamic ensemble wind speed prediction model based on hybrid deep reinforcement learning. Advanced Engineering Informatics, 2021, 48, 101290.	4.0	44
33	AQI time series prediction based on a hybrid data decomposition and echo state networks. Environmental Science and Pollution Research, 2021, 28, 51160-51182.	2.7	14
34	A new hybrid model based on secondary decomposition, reinforcement learning and SRU network for wind turbine gearbox oil temperature forecasting. Measurement: Journal of the International Measurement Confederation, 2021, 178, 109347.	2.5	25
35	Non-intrusive load transient identification based on multivariate LSTM neural network and time series data augmentation. Sustainable Energy, Grids and Networks, 2021, 27, 100490.	2.3	15
36	Hourly PM2.5 concentration multi-step forecasting method based on extreme learning machine, boosting algorithm and error correction model. , 2021, 118, 103221.		20

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37	Unmanned driving intelligent algorithm simulation platform. , 2021, , 297-341.		0
38	Smart Non-intrusive Device Recognition Based on Physical Methods. , 2021, , 45-79.		0
39	Smart Non-intrusive Device Recognition Based on Intelligent Optimization Methods. , 2021, , 169-192.		0
40	Smart Non-intrusive Device Recognition Based on Ensemble Methods. , 2021, , 193-227.		0
41	A novel adaptive ensemble model framework for short-term traffic flow prediction based on model selection and multi-objective optimization. , 2021, , .		0
42	SVM-based image partitioning for vision recognition of AGV guide paths under complex illumination conditions. Robotics and Computer-Integrated Manufacturing, 2020, 61, 101856.	6.1	21
43	Adaptive wavelet transform model for time series data prediction. Soft Computing, 2020, 24, 5877-5884.	2.1	16
44	An improved non-intrusive load disaggregation algorithm and its application. Sustainable Cities and Society, 2020, 53, 101918.	5.1	24
45	A vanishing moment ensemble model for wind speed multi-step prediction with multi-objective base model selection. Applied Energy, 2020, 261, 114367.	5.1	14
46	A hybrid multi-resolution multi-objective ensemble model and its application for forecasting of daily PM2.5 concentrations. Information Sciences, 2020, 516, 266-292.	4.0	50
47	Corrected multi-resolution ensemble model for wind power forecasting with real-time decomposition and Bivariate Kernel density estimation. Energy Conversion and Management, 2020, 203, 112265.	4.4	20
48	Non-intrusive Load Monitoring. , 2020, , .		13
49	A distributed computing framework for wind speed big data forecasting on Apache Spark. Sustainable Energy Technologies and Assessments, 2020, 37, 100582.	1.7	31
50	Prediction of outdoor PM2.5 concentrations based on a three-stage hybrid neural network model. Atmospheric Pollution Research, 2020, 11, 469-481.	1.8	36
51	A review on multi-objective optimization framework in wind energy forecasting techniques and applications. Energy Conversion and Management, 2020, 224, 113324.	4.4	104
52	Data multi-scale decomposition strategies for air pollution forecasting: A comprehensive review. Journal of Cleaner Production, 2020, 277, 124023.	4.6	52
53	Wind speed big data forecasting using time-variant multi-resolution ensemble model with clustering auto-encoder. Applied Energy, 2020, 280, 115975.	5.1	26
54	A novel hybrid ensemble model for hourly PM2.5 forecasting using multiple neural networks: a case study in China. Air Quality, Atmosphere and Health, 2020, 13, 1411-1420.	1.5	16

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55	PM2.5 concentrations forecasting using a new multi-objective feature selection and ensemble framework. Atmospheric Pollution Research, 2020, 11, 1187-1198.	1.8	20
56	Wind speed forecasting using a new multi-factor fusion and multi-resolution ensemble model with real-time decomposition and adaptive error correction. Energy Conversion and Management, 2020, 217, 112995.	4.4	47
57	Multi-step wind speed forecasting model based on wavelet matching analysis and hybrid optimization framework. Sustainable Energy Technologies and Assessments, 2020, 40, 100745.	1.7	13
58	Smart Cities: Big Data Prediction Methods and Applications. , 2020, , .		6
59	A New Model Using Multiple Feature Clustering and Neural Networks for Forecasting Hourly PM2.5 Concentrations, and Its Applications in China. Engineering, 2020, 6, 944-956.	3.2	37
60	Medium-term wind power forecasting based on multi-resolution multi-learner ensemble and adaptive model selection. Energy Conversion and Management, 2020, 206, 112492.	4.4	53
61	A hybrid model for river water level forecasting: Cases of Xiangjiang River and Yuanjiang River, China. Journal of Hydrology, 2020, 587, 124934.	2.3	24
62	A novel axle temperature forecasting method based on decomposition, reinforcement learning optimization and neural network. Advanced Engineering Informatics, 2020, 44, 101089.	4.0	34
63	Spatial ensemble prediction of hourly PM2.5 concentrations around Beijing railway station in China. Air Quality, Atmosphere and Health, 2020, 13, 563-573.	1.5	11
64	An improved deep learning model for predicting stock market price time series. , 2020, 102, 102741.		74
65	A novel hybrid model for multi-step daily AQI forecasting driven by air pollution big data. Air Quality, Atmosphere and Health, 2020, 13, 197-207.	1.5	23
66	A new hybrid ensemble deep reinforcement learning model for wind speed short term forecasting. Energy, 2020, 202, 117794.	4.5	113
67	Spatial air quality index prediction model based on decomposition, adaptive boosting, and three-stage feature selection: A case study in China. Journal of Cleaner Production, 2020, 265, 121777.	4.6	41
68	Prediction Models of Urban Air Quality in Smart Environment. , 2020, , 227-260.		0
69	Prediction Model of Urban Environmental Noise in Smart Environment. , 2020, , 289-314.		1
70	Characteristics and Analysis of Urban Traffic Flow in Smart Traffic Systems. , 2020, , 125-158.		1
71	Prediction Models of Traffic Flow Driven Based on Multi-Dimensional Data in Smart Traffic Systems. , 2020, , 195-223.		0
72	Prediction Models of Energy Consumption in Smart Urban Buildings. , 2020, , 89-121.		1

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73	Multi-objective data-ensemble wind speed forecasting model with stacked sparse autoencoder and adaptive decomposition-based error correction. <i>Applied Energy</i> , 2019, 254, 113686.	5.1	79
74	Elman neural network optimized by firefly algorithm for forecasting China's carbon dioxide emissions. <i>Systems Science and Control Engineering</i> , 2019, 7, 8-15.	1.8	8
75	Hybrid Position Forecasting Method for Mobile Robot Transportation in Smart Indoor Environment. , 2019, , .		2
76	Sensitivity Analysis of Cost Elements in Rail Transit System Using EO-FNN. , 2019, , .		0
77	Wind speed forecasting models based on data decomposition, feature selection and group method of data handling network. <i>Measurement: Journal of the International Measurement Confederation</i> , 2019, 148, 106971.	2.5	51
78	A novel two-stage deep learning wind speed forecasting method with adaptive multiple error corrections and bivariate Dirichlet process mixture model. <i>Energy Conversion and Management</i> , 2019, 199, 111975.	4.4	32
79	Big Data Forecasting Model of Indoor Positions for Mobile Robot Navigation Based on Apache Spark Platform. , 2019, , .		3
80	An evolution-dependent multi-objective ensemble model of vanishing moment with adversarial auto-encoder for short-term wind speed forecasting in Xinjiang wind farm, China. <i>Energy Conversion and Management</i> , 2019, 198, 111914.	4.4	21
81	Data processing strategies in wind energy forecasting models and applications: A comprehensive review. <i>Applied Energy</i> , 2019, 249, 392-408.	5.1	228
82	A hybrid model for appliance classification based on time series features. <i>Energy and Buildings</i> , 2019, 196, 112-123.	3.1	40
83	Multi-floor laboratory transportation technologies based on intelligent mobile robots. <i>Transportation Safety and Environment</i> , 2019, 1, 37-53.	1.1	4
84	Smart wind speed deep learning based multi-step forecasting model using singular spectrum analysis, convolutional Gated Recurrent Unit network and Support Vector Regression. <i>Renewable Energy</i> , 2019, 143, 842-854.	4.3	141
85	Air PM2.5 concentration multi-step forecasting using a new hybrid modeling method: Comparing cases for four cities in China. <i>Atmospheric Pollution Research</i> , 2019, 10, 1588-1600.	1.8	69
86	Deterministic wind energy forecasting: A review of intelligent predictors and auxiliary methods. <i>Energy Conversion and Management</i> , 2019, 195, 328-345.	4.4	208
87	A hybrid framework for forecasting PM2.5 concentrations using multi-step deterministic and probabilistic strategy. <i>Air Quality, Atmosphere and Health</i> , 2019, 12, 785-795.	1.5	32
88	Improved pollution forecasting hybrid algorithms based on the ensemble method. <i>Applied Mathematical Modelling</i> , 2019, 73, 473-486.	2.2	37
89	An intelligent hybrid model for air pollutant concentrations forecasting: Case of Beijing in China. <i>Sustainable Cities and Society</i> , 2019, 47, 101471.	5.1	58
90	Transportation robot battery power forecasting based on bidirectional deep-learning method. <i>Transportation Safety and Environment</i> , 2019, 1, 205-211.	1.1	4

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91	Household Appliance Identification Based on a Novel Load Signature Processing Framework. , 2019, , .		0
92	Smart wind speed forecasting approach using various boosting algorithms, big multi-step forecasting strategy. Renewable Energy, 2019, 135, 540-553.	4.3	91
93	Wind speed prediction model using singular spectrum analysis, empirical mode decomposition and convolutional support vector machine. Energy Conversion and Management, 2019, 180, 196-205.	4.4	176
94	Grey relational analysis, principal component analysis and forecasting of carbon emissions based on long short-term memory in China. Journal of Cleaner Production, 2019, 209, 415-423.	4.6	194
95	Application of ELM in Key Impact Factors Identification of Rail Transit System Cost. , 2019, , .		0
96	An experimental investigation of three new hybrid wind speed forecasting models using multi-decomposing strategy and ELM algorithm. Renewable Energy, 2018, 123, 694-705.	4.3	120
97	Smart wind speed forecasting using EWT decomposition, GWO evolutionary optimization, RELM learning and IEWT reconstruction. Energy Conversion and Management, 2018, 161, 266-283.	4.4	95
98	Smart multi-step deep learning model for wind speed forecasting based on variational mode decomposition, singular spectrum analysis, LSTM network and ELM. Energy Conversion and Management, 2018, 159, 54-64.	4.4	342
99	Smart deep learning based wind speed prediction model using wavelet packet decomposition, convolutional neural network and convolutional long short term memory network. Energy Conversion and Management, 2018, 166, 120-131.	4.4	239
100	Big multi-step wind speed forecasting model based on secondary decomposition, ensemble method and error correction algorithm. Energy Conversion and Management, 2018, 156, 525-541.	4.4	109
101	Wind speed forecasting method based on deep learning strategy using empirical wavelet transform, long short term memory neural network and Elman neural network. Energy Conversion and Management, 2018, 156, 498-514.	4.4	363
102	Comparison of two new intelligent wind speed forecasting approaches based on Wavelet Packet Decomposition, Complete Ensemble Empirical Mode Decomposition with Adaptive Noise and Artificial Neural Networks. Energy Conversion and Management, 2018, 155, 188-200.	4.4	117
103	Influence of the geometry of equal-transect oblique tunnel portal on compression wave and micro-pressure wave generated by high-speed trains entering tunnels. Journal of Wind Engineering and Industrial Aerodynamics, 2018, 178, 1-17.	1.7	45
104	A novel ensemble model of different mother wavelets for wind speed multi-step forecasting. Applied Energy, 2018, 228, 1783-1800.	5.1	63
105	Multi-step wind speed forecasting using EWT decomposition, LSTM principal computing, RELM subordinate computing and IEWT reconstruction. Energy Conversion and Management, 2018, 167, 203-219.	4.4	138
106	Wind speed forecasting method using wavelet, extreme learning machine and outlier correction algorithm. Energy Conversion and Management, 2017, 151, 709-722.	4.4	86
107	Influence of tunnel aerodynamic effects by slope of equal-transect ring oblique tunnel portal. Journal of Wind Engineering and Industrial Aerodynamics, 2017, 169, 106-116.	1.7	35
108	Grasping and Placing Operation for Labware Transportation in Life Science Laboratories using Mobile Robots. Advances in Science, Technology and Engineering Systems, 2017, 2, 1227-1237.	0.4	4

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109	Human Robot Interaction for Hybrid Collision Avoidance System for Indoor Mobile Robots. Advances in Science, Technology and Engineering Systems, 2017, 2, 650-657.	0.4	5
110	Recognition and Position Estimation for Multiple Labware Transportation Using Kinect V2 and Mobile Robots. Advances in Science, Technology and Engineering Systems, 2017, 2, 1218-1226.	0.4	0
111	A Secure Automated Elevator Management System and Pressure Sensor based Floor Estimation for Indoor Mobile Robot Transportation. Advances in Science, Technology and Engineering Systems, 2017, 2, 1599-1608.	0.4	1
112	A New Robust Method for Mobile Robot Multifloor Navigation in Distributed Life Science Laboratories. Journal of Control Science and Engineering, 2016, 2016, 1-17.	0.8	14
113	A backbone-floyd hybrid path planning method for mobile robot transportation in multi-floor life science laboratories. , 2016, , .		6
114	An identification and localization approach of different labware for mobile robot transportation in life science laboratories. , 2016, , .		4
115	Interactive collision avoidance system for indoor mobile robots based on human-robot interaction. , 2016, , .		6
116	Human-Mobile Robot Interaction in laboratories using Kinect Sensor and ELM based face feature recognition. , 2016, , .		4
117	A robust method for elevator operation in semi-outdoor environment for mobile robot transportation system in life science laboratories. , 2016, , .		14
118	Intelligent arm manipulation system in life science labs using H2O mobile robot and Kinect sensor. , 2016, , .		5
119	A Highly Flexible, Automated System Providing Reliable Sample Preparation in Element- and Structure-Specific Measurements. Journal of the Association for Laboratory Automation, 2016, 21, 682-692.	2.8	15
120	Kinematic Analysis of 6-DOF Arms for H2O Mobile Robots and Labware Manipulation for Transportation in Life Science Labs. Journal of Automation, Mobile Robotics and Intelligent Systems, 2016, 10, 40-52.	0.4	5
121	Human face orientation recognition for intelligent mobile robot collision avoidance in laboratory environments using feature detection and LVQ neural networks. , 2015, , .		5
122	New localization strategy for mobile robot transportation in life science automation using StarGazer sensor, time series modeling and Kalman filter processing. , 2015, , .		5
123	Four wind speed multi-step forecasting models using extreme learning machines and signal decomposing algorithms. Energy Conversion and Management, 2015, 100, 16-22.	4.4	120
124	Multi-floor navigation method for mobile robot transportation based on StarGazer sensors in life science automation. , 2015, , .		7
125	Improving the navigation of indoor mobile robots using Kalman filter. , 2015, , .		4
126	Comparison of four Adaboost algorithm based artificial neural networks in wind speed predictions. Energy Conversion and Management, 2015, 92, 67-81.	4.4	144



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127	New wind speed forecasting approaches using fast ensemble empirical model decomposition, genetic algorithm, Mind Evolutionary Algorithm and Artificial Neural Networks. Renewable Energy, 2015, 83, 1066-1075.	4.3	139
128	An EMD-recursive ARIMA method to predict wind speed for railway strong wind warning system. Journal of Wind Engineering and Industrial Aerodynamics, 2015, 141, 27-38.	1.7	119
129	Wind speed forecasting approach using secondary decomposition algorithm and Elman neural networks. Applied Energy, 2015, 157, 183-194.	5.1	240
130	Arm grasping for mobile robot transportation using Kinect sensor and kinematic analysis. , 2015, , .		7
131	Comparison of new hybrid FEEMD-MLP, FEEMD-ANFIS, Wavelet Packet-MLP and Wavelet Packet-ANFIS for wind speed predictions. Energy Conversion and Management, 2015, 89, 1-11.	4.4	127
132	Mobile robotic transportation in laboratory automation: Multi-robot control, robot-door integration and robot-human interaction. , 2014, , .		8
133	A new approach to battery power tracking and predicting for mobile robot transportation using wavelet decomposition and ANFIS networks. , 2014, , .		4
134	A Fast Approach to Arm Blind Grasping and Placing for Mobile Robot Transportation in Laboratories. International Journal of Advanced Robotic Systems, 2014, 11, 43.	1.3	10
135	A fast method for mobile robot transportation in life science automation. , 2013, , .		9
136	An application of charging management for mobile robot transportation in laboratory environments. , 2013, , .		9
137	A new method for mobile robot arm blind grasping using ultrasonic sensors and Artificial Neural Networks. , 2013, , .		9
138	Forecasting models for wind speed using wavelet, wavelet packet, time series and Artificial Neural Networks. Applied Energy, 2013, 107, 191-208.	5.1	293
139	An experimental investigation of two Wavelet-MLP hybrid frameworks for wind speed prediction using GA and PSO optimization. International Journal of Electrical Power and Energy Systems, 2013, 52, 161-173.	3.3	83
140	Mobile Robot for Life Science Automation. International Journal of Advanced Robotic Systems, 2013, 10, 288.	1.3	29
141	A floyd-genetic algorithm based path planning system for mobile robots in laboratory automation. , 2012, , .		9
142	A Floyd-Dijkstra hybrid application for mobile robot path planning in life science automation. , 2012, , .		12
143	A hybrid model for wind speed prediction using empirical mode decomposition and artificial neural networks. Renewable Energy, 2012, 48, 545-556.	4.3	248
144	Comparison of two new ARIMA-ANN and ARIMA-Kalman hybrid methods for wind speed prediction. Applied Energy, 2012, 98, 415-424.	5.1	332

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145	A common wireless remote control system for mobile robots in laboratory. , 2012, , .		20
146	Structure realization method for collapse threshold of plastic deformation in train collision condition. Central South University, 2011, 18, 244-249.	0.5	14
147	A hybrid statistical method to predict wind speed and wind power. Renewable Energy, 2010, 35, 1857-1861.	4.3	217
148	Short-term forecasting optimization algorithms for wind speed along Qinghai-Tibet railway based on different intelligent modeling theories. Central South University, 2009, 16, 690-696.	0.5	8