

Shiyan Hu

List of Publications by Year in descending order

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135
papers

2,996
citations

201575

27
h-index

206029

48
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137
all docs

137
docs citations

137
times ranked

2537
citing authors

#	ARTICLE	IF	CITATIONS
1	Uncertainty-Aware Household Appliance Scheduling Considering Dynamic Electricity Pricing in Smart Home. IEEE Transactions on Smart Grid, 2013, 4, 932-941.	6.2	273
2	Resource Management for Improving Soft-Error and Lifetime Reliability of Real-Time MPSoCs. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2019, 38, 2215-2228.	1.9	123
3	A Survey on Edge and Edge-Cloud Computing Assisted Cyber-Physical Systems. IEEE Transactions on Industrial Informatics, 2021, 17, 7806-7819.	7.2	118
4	Security-Critical Energy-Aware Task Scheduling for Heterogeneous Real-Time MPSoCs in IoT. IEEE Transactions on Services Computing, 2020, 13, 745-758.	3.2	110
5	Design Automation of Cyber-Physical Systems: Challenges, Advances, and Opportunities. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2017, 36, 1421-1434.	1.9	107
6	Improving Availability of Multicore Real-Time Systems Suffering Both Permanent and Transient Faults. IEEE Transactions on Computers, 2019, 68, 1785-1801.	2.4	100
7	QoS-Adaptive Approximate Real-Time Computation for Mobility-Aware IoT Lifetime Optimization. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2019, 38, 1799-1810.	1.9	94
8	A survey of optimization techniques for thermal-aware 3D processors. Journal of Systems Architecture, 2019, 97, 397-415.	2.5	89
9	Thermal-aware correlated two-level scheduling of real-time tasks with reduced processor energy on heterogeneous MPSoCs. Journal of Systems Architecture, 2018, 82, 1-11.	2.5	76
10	Exploring Placement of Heterogeneous Edge Servers for Response Time Minimization in Mobile Edge-Cloud Computing. IEEE Transactions on Industrial Informatics, 2021, 17, 494-503.	7.2	74
11	Introduction to Cyber-Physical System Security: A Cross-Layer Perspective. IEEE Transactions on Multi-Scale Computing Systems, 2017, 3, 215-227.	2.5	66
12	Online Generative Adversary Network Based Measurement Recovery in False Data Injection Attacks: A Cyber-Physical Approach. IEEE Transactions on Industrial Informatics, 2020, 16, 2031-2043.	7.2	66
13	A Survey of Deployment Solutions and Optimization Strategies for Hybrid SDN Networks. IEEE Communications Surveys and Tutorials, 2019, 21, 1483-1507.	24.8	63
14	Cyberthreat Analysis and Detection for Energy Theft in Social Networking of Smart Homes. IEEE Transactions on Computational Social Systems, 2015, 2, 148-158.	3.2	61
15	Economical and Balanced Energy Usage in the Smart Home Infrastructure: A Tutorial and New Results. IEEE Transactions on Emerging Topics in Computing, 2015, 3, 556-570.	3.2	59
16	A Dynamic Programming Algorithm for Leveraging Probabilistic Detection of Energy Theft in Smart Home. IEEE Transactions on Emerging Topics in Computing, 2015, 3, 502-513.	3.2	52
17	Fast Algorithms for Slew-Constrained Minimum Cost Buffering. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2007, 26, 2009-2022.	1.9	51
18	Cyber-physical systems: A security perspective. , 2015, , .		50

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19	Preventive Maintenance for Advanced Metering Infrastructure Against Malware Propagation. IEEE Transactions on Smart Grid, 2016, 7, 1314-1328.	6.2	49
20	Developing User Perceived Value Based Pricing Models for Cloud Markets. IEEE Transactions on Parallel and Distributed Systems, 2018, 29, 2742-2756.	4.0	47
21	Leveraging Strategic Detection Techniques for Smart Home Pricing Cyberattacks. IEEE Transactions on Dependable and Secure Computing, 2016, 13, 220-235.	3.7	46
22	Throughput-Conscious Energy Allocation and Reliability-Aware Task Assignment for Renewable Powered In-Situ Server Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2022, 41, 516-529.	1.9	41
23	TriboMotion: A Self-Powered Triboelectric Motion Sensor in Wearable Internet of Things for Human Activity Recognition and Energy Harvesting. IEEE Internet of Things Journal, 2018, 5, 4441-4453.	5.5	40
24	Affinity-Driven Modeling and Scheduling for Makespan Optimization in Heterogeneous Multiprocessor Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2019, 38, 1189-1202.	1.9	37
25	Strategic FRTU Deployment Considering Cybersecurity in Secondary Distribution Network. IEEE Transactions on Smart Grid, 2013, 4, 1264-1274.	6.2	36
26	Exploring Renewable-Adaptive Computation Offloading for Hierarchical QoS Optimization in Fog Computing. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 2095-2108.	1.9	35
27	Game-Theoretic Market-Driven Smart Home Scheduling Considering Energy Balancing. IEEE Systems Journal, 2017, 11, 910-921.	2.9	33
28	DRHEFT: Deadline-Constrained Reliability-Aware HEFT Algorithm for Real-Time Heterogeneous MPSoC Systems. IEEE Transactions on Reliability, 2022, 71, 178-189.	3.5	32
29	Fast interconnect synthesis with layer assignment. , 2008, , .		30
30	Reliability-Driven Energy-Efficient Task Scheduling for Multiprocessor Real-Time Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2011, 30, 1569-1573.	1.9	28
31	Customer Perceived Value- and Risk-Aware Multiserver Configuration for Profit Maximization. IEEE Transactions on Parallel and Distributed Systems, 2020, 31, 1074-1088.	4.0	28
32	A Kaiser Window-Based S-Transform for Time-Frequency Analysis of Power Quality Signals. IEEE Transactions on Industrial Informatics, 2022, 18, 965-975.	7.2	27
33	Efficient Federated Learning for Cloud-Based AIoT Applications. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 2211-2223.	1.9	26
34	Two-Layer Game Theoretic Microgrid Capacity Optimization Considering Uncertainty of Renewable Energy. IEEE Systems Journal, 2021, 15, 4260-4271.	2.9	25
35	Detecting Dynamic Attacks in Smart Grids Using Reservoir Computing: A Spiking Delayed Feedback Reservoir Based Approach. IEEE Transactions on Emerging Topics in Computational Intelligence, 2020, 4, 253-264.	3.4	24
36	Dynamic programming based game theoretic algorithm for economical multi-user smart home scheduling. , 2014, , .		23

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37	The Hierarchical Smart Home Cyberattack Detection Considering Power Overloading and Frequency Disturbance. IEEE Transactions on Industrial Informatics, 2016, 12, 1973-1983.	7.2	23
38	Combating Coordinated Pricing Cyberattack and Energy Theft in Smart Home Cyber-Physical Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2018, 37, 573-586.	1.9	23
39	Vulnerability assessment and defense technology for smart home cybersecurity considering pricing cyberattacks. , 2014, , .		22
40	Design Automation for Interwell Connectivity Estimation in Petroleum Cyber-Physical Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2017, 36, 255-264.	1.9	22
41	Gate Sizing for Cell-Library-Based Designs. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2009, 28, 818-825.	1.9	21
42	CEVP: Cross Entropy based Virtual Machine Placement for Energy Optimization in Clouds. Journal of Supercomputing, 2016, 72, 3194-3209.	2.4	21
43	Lorenz Chaotic System-Based Carbon Nanotube Physical Unclonable Functions. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2018, 37, 1408-1421.	1.9	21
44	A Computing Perspective on Smart City [Guest Editorial]. IEEE Transactions on Computers, 2016, 65, 1337-1338.	2.4	19
45	Pattern sensitive placement for manufacturability. , 2007, , .		18
46	Polynomial time approximation schemes for minimum disk cover problems. Journal of Combinatorial Optimization, 2010, 20, 399-412.	0.8	18
47	Multiscale Variation-Aware Techniques for High-Performance Digital Microfluidic Lab-on-a-Chip Component Placement. IEEE Transactions on Nanobioscience, 2011, 10, 51-58.	2.2	18
48	Renewable Energy Pricing Driven Scheduling in Distributed Smart Community Systems. IEEE Transactions on Parallel and Distributed Systems, 2017, 28, 1445-1456.	4.0	18
49	Uncertainty-Aware Flight Scheduling for Airport Throughput and Flight Delay Optimization. IEEE Transactions on Aerospace and Electronic Systems, 2020, 56, 853-862.	2.6	18
50	Adaptive Multimode Process Monitoring Based on Mode-Matching and Similarity-Preserving Dictionary Learning. IEEE Transactions on Cybernetics, 2023, 53, 3974-3987.	6.2	18
51	A Discrete Curvature Estimation Based Low-Distortion Adaptive Savitzky-Golay Filter for ECG Denoising. Sensors, 2019, 19, 1617.	2.1	17
52	Digital Twinning Based Adaptive Development Environment for Automotive Cyber-Physical Systems. IEEE Transactions on Industrial Informatics, 2022, 18, 1387-1396.	7.2	17
53	Power grid analysis with hierarchical support graphs. , 2011, , .		16
54	Sharp Corner/Edge Recognition in Domestic Environments Using RGB-D Camera Systems. IEEE Transactions on Circuits and Systems II: Express Briefs, 2015, 62, 987-991.	2.2	16

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55	Small-signal stability and robustness analysis for microgrids under time-constrained DoS attacks and a mitigation adaptive secondary control method. <i>Science China Information Sciences</i> , 2022, 65, 1.	2.7	16
56	A fully polynomial time approximation scheme for timing driven minimum cost buffer insertion. , 2009, , .		14
57	Smart Home Cyberattack Detection Framework for Sponsor Incentive Attacks. <i>IEEE Transactions on Smart Grid</i> , 2019, 10, 1916-1927.	6.2	13
58	Physical-Level Synthesis for Digital Lab-On-a-Chip Considering Variation, Contamination, and Defect. <i>IEEE Transactions on Nanobioscience</i> , 2014, 13, 3-11.	2.2	12
59	Stochastic scheduling for variation-aware virtual machine placement in a cloud computing CPS. <i>Future Generation Computer Systems</i> , 2020, 105, 779-788.	4.9	12
60	Stochastic Workload Scheduling for Uncoordinated Datacenter Clouds with Multiple QoS Constraints. <i>IEEE Transactions on Cloud Computing</i> , 2020, 8, 1284-1295.	3.1	12
61	Security-Aware Obfuscated Priority Assignment for CAN FD Messages in Real-Time Parallel Automotive Applications. <i>IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems</i> , 2020, 39, 4413-4425.	1.9	12
62	Reliability and Confidentiality Co-Verification for Parallel Applications in Distributed Systems. <i>IEEE Transactions on Parallel and Distributed Systems</i> , 2021, 32, 1353-1368.	4.0	12
63	A faster approximation scheme for timing driven minimum cost layer assignment. , 2009, , .		12
64	Hierarchical Cross-Entropy Optimization for Fast On-Chip Decap Budgeting. <i>IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems</i> , 2011, 30, 1610-1620.	1.9	11
65	A Fully Polynomial-Time Approximation Scheme for Timing-Constrained Minimum Cost Layer Assignment. <i>IEEE Transactions on Circuits and Systems II: Express Briefs</i> , 2009, 56, 580-584.	2.2	10
66	Design Automation for Cyber-Physical Systems [Scanning the Issue]. <i>Proceedings of the IEEE</i> , 2018, 106, 1479-1483.	16.4	10
67	Gain Scheduled Torque Compensation of PMSG-Based Wind Turbine for Frequency Regulation in an Isolated Grid. <i>Energies</i> , 2018, 11, 1623.	1.6	10
68	IPANM: Incentive Public Auditing Scheme for Non-Manager Groups in Clouds. <i>IEEE Transactions on Dependable and Secure Computing</i> , 2020, , 1-1.	3.7	10
69	Impact assessment of net metering on smart home cyberattack detection. , 2015, , .		9
70	Energy Theft Detection in Multi-Tenant Data Centers with Digital Protective Relay Deployment. <i>IEEE Transactions on Sustainable Computing</i> , 2018, 3, 16-29.	2.2	9
71	Improved S-Transform for Time-Frequency Analysis for Power Quality Disturbances. <i>IEEE Transactions on Power Delivery</i> , 2022, 37, 2942-2952.	2.9	9
72	FedLight: Federated Reinforcement Learning for Autonomous Multi-Intersection Traffic Signal Control. , 2021, , .		9

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73	Hybrid Trigonometric Differential Evolution for Optimizing Harmonic Distribution. , 0, , .		8
74	Guest Editorial Special Section on Building Automation, Smart Homes, and Communities. IEEE Transactions on Industrial Informatics, 2014, 10, 676-679.	7.2	8
75	Offshore oil spill monitoring and detection: Improving risk management for offshore petroleum cyber-physical systems: (Invited paper). , 2017, , .		8
76	Energy-efficient ECG compression in wearable body sensor network by leveraging empirical mode decomposition. , 2018, , .		8
77	A Collaborative and Sustainable Edge-Cloud Architecture for Object Tracking with Convolutional Siamese Networks. IEEE Transactions on Sustainable Computing, 2021, 6, 144-154.	2.2	8
78	Harmonic elimination for constrained optimal PWM. , 0, , .		7
79	CATALYST: Planning Layer Directives for Effective Design Closure. , 2013, , .		7
80	Smart Home Scheduling for Cost Reduction and Its Implementation on FPGA. Journal of Circuits, Systems and Computers, 2015, 24, 1550044.	1.0	7
81	Analysis of production data manipulation attacks in petroleum cyber-physical systems. , 2016, , .		7
82	Outlier Detection for Process Monitoring in Industrial Cyber-Physical Systems. IEEE Transactions on Automation Science and Engineering, 2022, 19, 2487-2498.	3.4	7
83	ADAPTIVE FAULT-TOLERANT TASK SCHEDULING FOR REAL-TIME ENERGY HARVESTING SYSTEMS. Journal of Circuits, Systems and Computers, 2012, 21, 1250004.	1.0	6
84	Cloud Computing for VLSI Floorplanning Considering Peak Temperature Reduction. IEEE Transactions on Emerging Topics in Computing, 2015, 3, 534-543.	3.2	6
85	Distributed Generation Placement for Power Distribution Networks. Journal of Circuits, Systems and Computers, 2015, 24, 1550009.	1.0	6
86	Placement optimization of cyber-physical digital microfluidic biochips. , 2016, , .		6
87	Leveraging carbon nanotube technologies in developing Physically Unclonable Function for cyber-physical system authentication. , 2016, , .		6
88	Game Theoretic Feedback Control for Reliability Enhancement of EtherCAT-Based Networked Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2019, 38, 1599-1610.	1.9	6
89	Document Image Watermarking Based on Weight-Invariant Partition Using Support Vector Machine. Lecture Notes in Computer Science, 2004, , 546-554.	1.0	6
90	Pattern Sensitive Placement Perturbation for Manufacturability. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2010, 18, 1002-1006.	2.1	5

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91	Risk Assessment and Development Cost Optimization in Software Defined Vehicles. IEEE Transactions on Intelligent Transportation Systems, 2021, 22, 3675-3686.	4.7	5
92	Leveraging Spatial Correlation for Sensor Drift Calibration in Smart Building. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 1273-1286.	1.9	5
93	An Interconnect Reliability-Driven Routing Technique For Electromigration Failure Avoidance. IEEE Transactions on Dependable and Secure Computing, 2010, , .	3.7	4
94	Approximation scheme for restricted discrete gate sizing targeting delay minimization. Journal of Combinatorial Optimization, 2011, 21, 497-510.	0.8	4
95	ECG Signal Compression for Low-power Sensor Nodes Using Sparse Frequency Spectrum Features. , 2018, , .		4
96	Economical and balanced production in smart Petroleum Cyber-Physical System. Future Generation Computer Systems, 2019, 95, 364-371.	4.9	4
97	Queueing Theoretic Approach for Performance-Aware Modeling of Sustainable SDN Control Planes. IEEE Transactions on Sustainable Computing, 2020, 5, 121-133.	2.2	4
98	Cyber-Physical Systems: An Overview. , 2020, , 1-11.		4
99	LIAS: A Lightweight Incentive Authentication Scheme for Forensic Services in IoT. IEEE Transactions on Automation Science and Engineering, 2023, 20, 805-820.	3.4	4
100	Utilizing Redundancy for Timing Critical Interconnect. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2007, 15, 1067-1080.	2.1	3
101	THE POWER DISTRIBUTION NETWORK EXPANSION PLANNING BASED ON STACKELBERG MINIMUM WEIGHT K-STAR GAME. Journal of Circuits, Systems and Computers, 2013, 22, 1350041.	1.0	3
102	Unified Stationary and Nonstationary Data Representation for Process Monitoring in IIoT. IEEE Transactions on Instrumentation and Measurement, 2022, 71, 1-12.	2.4	3
103	Buffering Single-Walled Carbon Nanotubes Bundle Interconnects for Timing Optimization. , 2014, , .		2
104	Timing-driven placement for carbon nanotube circuits. , 2015, , .		2
105	Cyber-physical integration in programmable microfluidic biochips. , 2015, , .		2
106	Guest Editorial: Hardware/Software Cross-Layer Technologies for Trustworthy and Secure Computing. IEEE Transactions on Multi-Scale Computing Systems, 2016, 2, 144-145.	2.5	2
107	Buffering Carbon Nanotube Interconnects Considering Inductive Effects. Journal of Circuits, Systems and Computers, 2016, 25, 1650093.	1.0	2
108	IEEE Transactions on Sustainable Computing: Guest Editorial on Special Issue on Sustainable Cyber-Physical Systems. IEEE Transactions on Sustainable Computing, 2018, 3, 58-59.	2.2	2

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109	Big Data for Cyber-Physical Systems. IEEE Transactions on Big Data, 2020, 6, 606-608.	4.4	2
110	An Exploratory Investigation into Image-Data-Driven Deep Learning for Stability Analysis of Geosystems. Geotechnical and Geological Engineering, 0, , 1.	0.8	2
111	Quantum Neural Network for Image Watermarking. Lecture Notes in Computer Science, 2004, , 669-674.	1.0	2
112	A comparative study on neural network-based prediction of smart community energy consumption. , 2017, , .		2
113	A New Document Watermarking Algorithm Based on Hybrid Multi-scale Ant Colony System. Lecture Notes in Computer Science, 2004, , 440-448.	1.0	2
114	EBL Overlapping Aware Stencil Planning for MCC System. ACM Transactions on Design Automation of Electronic Systems, 2016, 21, 1-24.	1.9	2
115	Optimizing Surplus Harmonics Distribution in PWM. Lecture Notes in Computer Science, 2004, , 366-375.	1.0	1
116	A New Fast Slew Buffering Algorithm Without Input Slew Assumptions. , 2007, , .		1
117	Unified adaptivity optimization of clock and logic signals. IEEE/ACM International Conference on Computer-Aided Design, Digest of Technical Papers, 2007, , .	0.0	1
118	A linear time algorithm for max-min length triangulation of a convex polygon. Information Processing Letters, 2007, 101, 203-208.	0.4	1
119	A polynomial time approximation scheme for timing constrained minimum cost layer assignment. , 2008, , .		1
120	An almost four-approximation algorithm for maximum weight triangulation. Journal of Combinatorial Optimization, 2010, 19, 31-42.	0.8	1
121	The fast optimal voltage partitioning algorithm for peak power density minimization. , 2010, , .		1
122	DISCRETE WAVELET TRANSFORM BASED CIRCUIT LAYOUT FINGERPRINTING USING CHAOTIC SYSTEM. Journal of Circuits, Systems and Computers, 2012, 21, 1250049.	1.0	1
123	A linear time approximation scheme for computing geometric maximum k-star. Journal of Global Optimization, 2013, 55, 849-855.	1.1	1
124	Variation-Aware Layer Assignment With Hierarchical Stochastic Optimization on a Multicore Platform. IEEE Transactions on Emerging Topics in Computing, 2014, 2, 488-500.	3.2	1
125	Guest Editorial Leveraging Design Automation Techniques for Cyber-Physical System Design. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2016, 35, 697-698.	1.9	1
126	Stochastic Buffering for Bundled SWCNT Interconnects Considering Unidimensional Fabrication Variation. IEEE Transactions on Emerging Topics in Computing, 2019, 7, 585-595.	3.2	1

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127	Augmented Cross-Entropy-Based Joint Temperature Optimization of Real-Time 3-D MPSoC Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 1987-1999.	1.9	1
128	Software and hardware co-design for sustainable cyber-physical systems. Software - Practice and Experience, 2021, 51, 2105-2107.	2.5	1
129	Trusted Anonymous Authentication For Vehicular Cyber-Physical Systems. , 2020, , .		1
130	Steiner network construction for timing critical nets. Proceedings - Design Automation Conference, 2006, , .	0.0	0
131	Fast algorithms for slew constrained minimum cost buffering. Proceedings - Design Automation Conference, 2006, , .	0.0	0
132	A fast general slew constrained minimum cost buffering algorithm. Microelectronics Journal, 2009, 40, 1482-1486.	1.1	0
133	A new asymmetric inclusion region for minimum weight triangulation. Journal of Global Optimization, 2010, 46, 63-73.	1.1	0
134	A transceiver-aware routing framework for on-chip nanophotonic integration. , 2010, , .		0
135	The approximation scheme for peak power driven voltage partitioning. , 2011, , .		0