

Shreyas Sen

List of Publications by Year in descending order

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121
papers

2,151
citations

331670

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345221

36
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129
all docs

129
docs citations

129
times ranked

1509
citing authors

#	ARTICLE	IF	CITATIONS
1	RF-PUF: Enhancing IoT Security Through Authentication of Wireless Nodes Using In-Situ Machine Learning. IEEE Internet of Things Journal, 2019, 6, 388-398.	8.7	173
2	EM-Wave Biosensors: A Review of RF, Microwave, mm-Wave and Optical Sensing. Sensors, 2019, 19, 1013.	3.8	129
3	Bio-Physical Modeling, Characterization, and Optimization of Electro-Quasistatic Human Body Communication. IEEE Transactions on Biomedical Engineering, 2019, 66, 1791-1802.	4.2	74
4	X-DeepSCA. , 2019, , .		66
5	Flexible submental sensor patch with remote monitoring controls for management of oropharyngeal swallowing disorders. Science Advances, 2019, 5, eaay3210.	10.3	61
6	ASNI: Attenuated Signature Noise Injection for Low-Overhead Power Side-Channel Attack Immunity. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 3300-3311.	5.4	56
7	Enabling Covert Body Area Network using Electro-Quasistatic Human Body Communication. Scientific Reports, 2019, 9, 4160.	3.3	56
8	Invited - Context-aware energy-efficient communication for IoT sensor nodes. , 2016, , .		49
9	BodyWire: A 6.3-pJ/b 30-Mb/s \sim 30-dB SIR-Tolerant Broadband Interference-Robust Human Body Communication Transceiver Using Time Domain Interference Rejection. IEEE Journal of Solid-State Circuits, 2019, 54, 2892-2906.	5.4	49
10	A 4 \times 32 Gb/s Bidirectional Link With 3-Tap FFE/6-Tap DFE and Collaborative CDR in 22 nm CMOS. IEEE Journal of Solid-State Circuits, 2014, 49, 3079-3090.	5.4	46
11	High efficiency power side-channel attack immunity using noise injection in attenuated signature domain. , 2017, , .		46
12	Wearable health monitoring using capacitive voltage-mode Human Body Communication. , 2017, 2017, 1-4.		45
13	Context-Aware Intelligence in Resource-Constrained IoT Nodes: Opportunities and Challenges. IEEE Design and Test, 2019, 36, 7-40.	1.2	45
14	Switched-Mode-Control Based Hybrid LDO for Fine-Grain Power Management of Digital Load Circuits. IEEE Journal of Solid-State Circuits, 2018, 53, 569-581.	5.4	42
15	Practical Approaches Toward Deep-Learning-Based Cross-Device Power Side-Channel Attack. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 2720-2733.	3.1	39
16	Self-Optimizing IoT Wireless Video Sensor Node With In-Situ Data Analytics and Context-Driven Energy-Aware Real-Time Adaptation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2017, 64, 2470-2480.	5.4	37
17	A Power-Scalable Channel-Adaptive Wireless Receiver Based on Built-In Orthogonally Tunable LNA. IEEE Transactions on Circuits and Systems I: Regular Papers, 2012, 59, 946-957.	5.4	36
18	Smart Sensing for HVAC Control: Collaborative Intelligence in Optical and IR Cameras. IEEE Transactions on Industrial Electronics, 2018, 65, 9785-9794.	7.9	36

#	ARTICLE	IF	CITATIONS
19	Pro-VIZOR. , 2008, , .		34
20	RF-PUF: IoT security enhancement through authentication of wireless nodes using in-situ machine learning. , 2018, , .		33
21	Environment-Adaptive Concurrent Companding and Bias Control for Efficient Power-Amplifier Operation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2011, 58, 607-618.	5.4	31
22	Characterization of Human Body Forward Path Loss and Variability Effects in Voltage-Mode HBC. IEEE Microwave and Wireless Components Letters, 2018, 28, 266-268.	3.2	30
23	The body is the network: To safeguard sensitive data, turn flesh and tissue into a secure wireless channel. IEEE Spectrum, 2020, 57, 44-49.	0.7	30
24	SocialHBC. , 2016, , .		28
25	On the Safety of Human Body Communication. IEEE Transactions on Biomedical Engineering, 2020, 67, 3392-3402.	4.2	25
26	Optimized Multitone Test Stimulus Driven Diagnosis of RF Transceivers Using Model Parameter Estimation. , 2011, , .		24
27	27.3 EM and Power SCA-Resilient AES-256 in 65nm CMOS Through >350Å— Current-Domain Signature Attenuation. , 2020, , .		24
28	A 32 Gb/s Bidirectional 4-channel 4 pJ/b Capacitively Coupled Link in 14 nm CMOS for Proximity Communication. IEEE Journal of Solid-State Circuits, 2016, 51, 3231-3245.	5.4	23
29	Secure Human-Internet using dynamic Human Body Communication. , 2017, , .		23
30	EM and Power SCA-Resilient AES-256 Through >350Å— Current-Domain Signature Attenuation and Local Lower Metal Routing. IEEE Journal of Solid-State Circuits, 2021, 56, 136-150.	5.4	23
31	Process-Variation Tolerant Channel-Adaptive Virtually Zero-Margin Low-Power Wireless Receiver Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2014, 33, 1764-1777.	2.7	21
32	STELLAR: A Generic EM Side-Channel Attack Protection through Ground-Up Root-cause Analysis. , 2019, , .		21
33	Multidimensional Adaptive Power Management for Low-Power Operation of Wireless Devices. IEEE Transactions on Circuits and Systems II: Express Briefs, 2008, 55, 867-871.	3.0	20
34	SCNIFFER: Low-Cost, Automated, Efficient Electromagnetic Side-Channel Sniffing. IEEE Access, 2020, 8, 173414-173427.	4.2	20
35	A 130nm hybrid low dropout regulator based on switched mode control for digital load circuits. , 2016, , .		19
36	Self-Learning RF Receiver Systems: Process Aware Real-Time Adaptation to Channel Conditions for Low Power Operation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2017, 64, 195-207.	5.4	19

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37	Toward Understanding the Return Path Capacitance in Capacitive Human Body Communication. IEEE Transactions on Circuits and Systems II: Express Briefs, 2020, 67, 1879-1883.	3.0	19
38	Advanced Biophysical Model to Capture Channel Variability for EQS Capacitive HBC. IEEE Transactions on Biomedical Engineering, 2021, 68, 3435-3446.	4.2	18
39	VIZOR: Virtually zero margin adaptive RF for ultra low power wireless communication. , 2007, , .		17
40	Concurrent PAR and power amplifier adaptation for power efficient operation of WiMAX OFDM transmitters. , 2008, , .		17
41	Phase Distortion to Amplitude Conversion-Based Low-Cost Measurement of AM-AM and AM-PM Effects in RF Power Amplifiers. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2012, 20, 1602-1614.	3.1	17
42	Context-Aware Collaborative Intelligence With Spatio-Temporal In-Sensor-Analytics for Efficient Communication in a Large-Area IoT Testbed. IEEE Internet of Things Journal, 2021, 8, 6800-6814.	8.7	17
43	Real-time use-aware adaptive MIMO RF receiver systems for energy efficiency under BER constraints. , 2013, , .		16
44	Real-Time Use-Aware Adaptive RF Transceiver Systems for Energy Efficiency Under BER Constraints. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2015, 34, 1209-1222.	2.7	15
45	Staged Inference using Conditional Deep Learning for energy efficient real-time smart diagnosis. , 2017, 2017, 78-81.		15
46	Inter-body coupling in electro-quasistatic human body communication: theory and analysis of security and interference properties. Scientific Reports, 2021, 11, 4378.	3.3	15
47	<i>Sub-1/4WRC</i> Comm: 415-nW 10-kb/s Physically and Mathematically Secure Electro-Quasi-Static HBC Node for Authentication and Medical Applications. IEEE Journal of Solid-State Circuits, 2021, 56, 788-802.	5.4	15
48	A 6.3pJ/b 30Mbps 30dB SIR-tolerant broadband interference-robust human body communication transceiver using time domain signal-interference separation. , 2018, , .		14
49	36.2 An EM/Power SCA-Resilient AES-256 with Synthesizable Signature Attenuation Using Digital-Friendly Current Source and RO-Bleed-Based Integrated Local Feedback and Global Switched-Mode Control. , 2021, , .		14
50	Characterization and Classification of Human Body Channel as a function of Excitation and Termination Modalities. , 2018, 2018, 3754-3757.		13
51	Deep Learning Side-Channel Attack Resilient AES-256 using Current Domain Signature Attenuation in 65nm CMOS. , 2020, , .		13
52	Design of process variation tolerant radio frequency low noise amplifier. , 2008, , .		12
53	A Wearable Real-Time CMOS Dosimeter With Integrated Zero-Bias Floating Gate Sensor and an 861-nW 18-Bit Energy-Resolution Scalable Time-Based Radiation to Digital Converter. IEEE Journal of Solid-State Circuits, 2020, 55, 650-665.	5.4	12
54	Electromagnetic and Power Side-Channel Analysis: Advanced Attacks and Low-Overhead Generic Countermeasures through White-Box Approach. Cryptography, 2020, 4, 30.	2.3	12

#	ARTICLE	IF	CITATIONS
73	Built-in Test Enabled Diagnosis and Tuning of RF Transmitter Systems. VLSI Design, 2008, 2008, 1-10.	0.5	6
74	Optimized digital compatible pulse sequences for testing of RF front end modules. , 2010, , .		6
75	23.2 A 32Gb/s bidirectional 4-channel 4pJ/b capacitively coupled link in 14nm CMOS for proximity communication. , 2016, , .		6
76	A 100KHz-1GHz Termination-dependent Human Body Communication Channel Measurement using Miniaturized Wearable Devices. , 2020, , .		6
77	DIRAC: Dynamic-IRegular Clustering Algorithm with Incremental Learning for RF-Based Trust Augmentation in IoT Device Authentication. , 2021, , .		6
78	High Accuracy RF-PUF for EM Security through Physical Feature Assistance using Public Wi-Fi Dataset. , 2021, , .		6
79	An Improved Update Rate CDR for Interference Robust Broadband Human Body Communication Receiver. IEEE Transactions on Biomedical Circuits and Systems, 2019, 13, 868-879.	4.0	5
80	Theoretical Analysis of AM and FM Interference Robustness of Integrating DDR Receiver for Human Body Communication. IEEE Transactions on Biomedical Circuits and Systems, 2019, 13, 566-578.	4.0	5
81	Analysis and Design Considerations for Achieving the Fundamental Limits of Phase Noise in mmWave Oscillators With On-Chip MEMS Resonator. IEEE Transactions on Circuits and Systems II: Express Briefs, 2021, 68, 1108-1112.	3.0	5
82	PG-CAS: Patterned-Ground Co-Planar Capacitive Asymmetry Sensing for mm-Range EM Side-Channel Attack Probe Detection. , 2021, , .		5
83	A Digital Cascoded Signature Attenuation Countermeasure with Intelligent Malicious Voltage Drop Attack Detector for EM/Power SCA Resilient Parallel AES-256. , 2022, , .		5
84	Enhanced Detection Range for EM Side-channel Attack Probes utilizing Co-planar Capacitive Asymmetry Sensing. , 2021, , .		4
85	A 65nm Resonant Electro-Quasistatic 5-240uW Human Whole-Body Powering and 2.19uW Communication SoC with Automatic Maximum Resonant Power Tracking. , 2021, , .		4
86	Instinctual Interference-Adaptive Low-Power Receiver With Combined Feedforward and Feedback Control. IEEE Microwave and Wireless Components Letters, 2021, 31, 771-774.	3.2	4
87	A 65nm 63.3 μ W 15Mbps Transceiver with Switched-Capacitor Adiabatic Signaling and Combinatorial-Pulse-Position Modulation for Body-Worn Video-Sensing AR Nodes. , 2022, , .		4
88	Electromagnetic Analysis of Integrated On-Chip Sensing Loop for Side-Channel and Fault-Injection Attack Detection. IEEE Microwave and Wireless Components Letters, 2022, 32, 784-787.	3.2	4
89	A Quantitative Analysis of Physical Security and Path Loss With Frequency for IBOB Channel. IEEE Microwave and Wireless Components Letters, 2022, 32, 792-795.	3.2	4
90	A 65 nm Wireless Image SoC Supporting On-Chip DNN Optimization and Real-Time Computation-Communication Trade-Off via Actor-Critical Neuro-Controller. IEEE Journal of Solid-State Circuits, 2022, 57, 2545-2559.	5.4	4

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91	Testing RF Components with Supply Current Signatures. , 2007, , .		3
92	Concurrent Multi-Dimensional Adaptation for Low-Power Operation in Wireless Devices. , 2008, , .		3
93	An Energy-Efficient Mixed-Signal Neuron for Inherently Error-Resilient Neuromorphic Systems. , 2017, , .		3
94	An Improved Update Rate Baud Rate CDR for Integrating Human Body Communication Receiver. , 2018, , .		3
95	A sub-nW Wake-up Receiver for Human Body Communication. , 2018, , .		3
96	In-field Remote Fingerprint Authentication using Human Body Communication and On-Hub Analytics. , 2018, 2018, 5398-5401.		3
97	In-the-Wild Interference Characterization and Modelling for Electro-Quasistatic-HBC With Miniaturized Wearables. IEEE Transactions on Biomedical Engineering, 2021, 68, 2858-2869.	4.2	3
98	Channel Modeling for Physically Secure Electro-Quasistatic In-Body to Out-of-Body Communication with Galvanic Tx and Multimodal Rx. , 2021, , .		3
99	Statistical Analysis Based Feature Selection Enhanced RF-PLUF With >99.8% Accuracy on Unmodified Commodity Transmitters for IoT Physical Security. Frontiers in Electronics, 2022, 3, .	3.2	3
100	Collaborative intelligence in optical/IR camera based wireless sensor nodes for HVAC control. , 2017, , .		2
101	Powerline Communication for Enhanced Connectivity in Neuromorphic Systems. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 1897-1906.	3.1	2
102	Theoretical Analysis of Multi Integrating RX Front-Ends for Lossy Broad-Band Channels. IEEE Open Journal of Circuits and Systems, 2021, 2, 363-379.	1.9	2
103	OpenSerDes: An Open Source Process-Portable All-Digital Serial Link. , 2021, , .		2
104	A Multipole Approach Toward On-Chip Metal Routing for Reduced EM Side-Channel Leakage. IEEE Microwave and Wireless Components Letters, 2021, 31, 685-688.	3.2	2
105	EM SCA White-Box Analysis-Based Reduced Leakage Cell Design and Presilicon Evaluation. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2022, 41, 4927-4938.	2.7	2
106	Design and Analysis of a Resistive Sensor Interface With Phase Noise-Energy-Resolution Scalability for a Time-Based Resistance-to-Digital Converter. Frontiers in Electronics, 2022, 3, .	3.2	2
107	EM SCA & FI Self-Awareness and Resilience with Single On-chip Loop & ML Classifiers. , 2022, , .		2
108	Feedback Driven Adaptive Power Management for Minimum Power Operation of Wireless Receivers. , 2007, , .		1

#	ARTICLE	IF	CITATIONS
109	Power Aware Post-Manufacture Tuning of MIMO Receiver Systems. , 2012, , .		1
110	Testing of digitally assisted adaptive analog/RF systems using tuning knob — Performance space estimation. , 2012, , .		1
111	Secure, energy-efficient, interference-robust connectivity for physiological sensors using human body communication. , 2016, , .		1
112	Energy-Efficient Deep Neural Networks with Mixed-Signal Neurons and Dense-Local and Sparse-Global Connectivity. , 2021, , .		1
113	Testing RF Components with Supply Current Signatures. Proceedings of the Asian Test Symposium, 2007, , .	0.0	1
114	Physically Secure Wearableâ€“Wearable Through-Body Interhuman Body Communication. Frontiers in Electronics, 2022, 2, .	3.2	1
115	Concurrent low cost multi-carrier compensation of amplitude and phase distortions in RF power amplifiers. , 2009, , .		0
116	Real time cross-layer adaptation for minimum energy wireless image transport using bit error rate control. , 2011, , .		0
117	Optimal Testing of Digitally Assisted Adaptive RF Systems. , 2012, , .		0
118	Guest Editorsâ€™ Introduction: Intelligent Resource-Constrained Sensor Nodes. IEEE Design and Test, 2019, 36, 5-6.	1.2	0
119	Design Considerations for a Sub-25Î¼W PLL with Multi-Phase Output and 1-450MHz Tuning Range. , 2021, , .		0
120	Physically-Secure Low-Power Human State Measurement using EQS-HBC and Edge-Analytics : Invited Paper. , 2021, , .		0
121	iSTELLAR: intermittent Signature aTtenuation Embedded CRYPTO with Low-Level metal Routing. , 2021, , .		0