

Christoph Studer

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

105
papers

3,176
citations

28
h-index

54
g-index

122
ext. papers

4,236
ext. citations

4.4
avg, IF

5.94
L-index

#	Paper	IF	Citations
105	Soft-output sphere decoding: algorithms and VLSI implementation. <i>IEEE Journal on Selected Areas in Communications</i> , 2008 , 26, 290-300	14.2	244
104	Large-Scale MIMO Detection for 3GPP LTE: Algorithms and FPGA Implementations. <i>IEEE Journal on Selected Topics in Signal Processing</i> , 2014 , 8, 916-929	7.5	236
103	Throughput Analysis of Massive MIMO Uplink With Low-Resolution ADCs. <i>IEEE Transactions on Wireless Communications</i> , 2017 , 16, 4038-4051	9.6	180
102	ASIC Implementation of Soft-Input Soft-Output MIMO Detection Using MMSE Parallel Interference Cancellation. <i>IEEE Journal of Solid-State Circuits</i> , 2011 , 46, 1754-1765	5.5	170
101	MIMO transmission with residual transmit-RF impairments 2010 ,		166
100	Quantized Precoding for Massive MU-MIMO. <i>IEEE Transactions on Communications</i> , 2017 , 65, 4670-4684	6.9	153
99	. <i>IEEE Transactions on Information Theory</i> , 2012 , 58, 3115-3130	2.8	126
98	Quantized Massive MU-MIMO-OFDM Uplink. <i>IEEE Transactions on Communications</i> , 2016 , 64, 2387-2399	6.9	121
97	Soft-Input Soft-Output Single Tree-Search Sphere Decoding. <i>IEEE Transactions on Information Theory</i> , 2010 , 56, 4827-4842	2.8	119
96	PhaseMax: Convex Phase Retrieval via Basis Pursuit. <i>IEEE Transactions on Information Theory</i> , 2018 , 64, 2675-2689	2.8	114
95	PAR-Aware Large-Scale Multi-User MIMO-OFDM Downlink. <i>IEEE Journal on Selected Areas in Communications</i> , 2013 , 31, 303-313	14.2	104
94	Conjugate gradient-based soft-output detection and precoding in massive MIMO systems 2014 ,		86
93	Approximate matrix inversion for high-throughput data detection in the large-scale MIMO uplink 2013 ,		84
92	. <i>IEEE Signal Processing Magazine</i> , 2017 , 34, 52-66	9.4	77
91	Optimality of large MIMO detection via approximate message passing 2015 ,		69
90	Deep Unfolding for Communications Systems: A Survey and Some New Directions 2019 ,		61
89	Decentralized Baseband Processing for Massive MU-MIMO Systems. <i>IEEE Journal on Emerging and Selected Topics in Circuits and Systems</i> , 2017 , 7, 491-507	5.2	54

88	VLSI Design of Approximate Message Passing for Signal Restoration and Compressive Sensing. <i>IEEE Journal on Emerging and Selected Topics in Circuits and Systems</i> , 2012 , 2, 579-590	5.2	49
87	High-Throughput Data Detection for Massive MU-MIMO-OFDM Using Coordinate Descent. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2016 , 63, 2357-2367	3.9	47
86	1-bit Massive MU-MIMO Precoding in VLSI. <i>IEEE Journal on Emerging and Selected Topics in Circuits and Systems</i> , 2017 , 7, 508-522	5.2	44
85	VLSI design of large-scale soft-output MIMO detection using conjugate gradients 2015 ,		42
84	Stable restoration and separation of approximately sparse signals. <i>Applied and Computational Harmonic Analysis</i> , 2014 , 37, 12-35	3.1	42
83	Channel Charting: Locating Users Within the Radio Environment Using Channel State Information. <i>IEEE Access</i> , 2018 , 6, 47682-47698	3.5	42
82	. <i>IEEE Transactions on Information Theory</i> , 2011 , 57, 5754-5768	2.8	37
81	Linear Precoding With Low-Resolution DACs for Massive MU-MIMO-OFDM Downlink. <i>IEEE Transactions on Wireless Communications</i> , 2019 , 18, 1595-1609	9.6	29
80	VLSI Design of a Monolithic Compressive-Sensing Wideband Analog-to-Information Converter. <i>IEEE Journal on Emerging and Selected Topics in Circuits and Systems</i> , 2013 , 3, 552-565	5.2	29
79	Artificial Intelligence for 5G and Beyond 5G: Implementations, Algorithms, and Optimizations. <i>IEEE Journal on Emerging and Selected Topics in Circuits and Systems</i> , 2020 , 10, 149-163	5.2	28
78	Data Detection in Large Multi-Antenna Wireless Systems via Approximate Semidefinite Relaxation. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2016 , 63, 2334-2346	3.9	28
77	Video Compressive Sensing for Spatial Multiplexing Cameras Using Motion-Flow Models. <i>SIAM Journal on Imaging Sciences</i> , 2015 , 8, 1489-1518	1.9	26
76	On the performance of mismatched data detection in large MIMO systems 2016 ,		26
75	Decentralized Equalization With Feedforward Architectures for Massive MU-MIMO. <i>IEEE Transactions on Signal Processing</i> , 2019 , 67, 4418-4432	4.8	25
74	. <i>IEEE Journal of Microwaves</i> , 2021 , 1, 86-100		25
73	Probabilistic Recovery Guarantees for Sparsely Corrupted Signals. <i>IEEE Transactions on Information Theory</i> , 2013 , 59, 3104-3116	2.8	22
72	Power Consumption Analysis for Mobile MmWave and Sub-THz Receivers 2020 ,		21
71	FPGA design of a coordinate descent data detector for large-scale MU-MIMO 2016 ,		19

70	. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2018 , 65, 471-484	3.9	18
69	Implementation Trade-Offs of Soft-Input Soft-Output MAP Decoders for Convolutional Codes. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2012 , 59, 2774-2783	3.9	18
68	Efficient Soft-Output Gauss-Seidel Data Detector for Massive MIMO Systems. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2019 , 1-12	3.9	17
67	Massive MU-MIMO-OFDM Uplink with Hardware Impairments: Modeling and Analysis 2018 ,		17
66	Decentralized data detection for massive MU-MIMO on a Xeon Phi cluster 2016 ,		16
65	ADMM-based infinity norm detection for large MU-MIMO: Algorithm and VLSI architecture 2017 ,		15
64	Neural-Network Optimized 1-bit Precoding for Massive MU-MIMO 2019 ,		14
63	Data mapping for unreliable memories 2012 ,		14
62	Adaptive Relaxed ADMM: Convergence Theory and Practical Implementation 2017 ,		13
61	The effect of unreliable LLR storage on the performance of MIMO-BICM 2010 ,		12
60	Real-time principal component pursuit 2011 ,		11
59	Decentralized beamforming for massive MU-MIMO on a GPU cluster 2016 ,		11
58	Biconvex Relaxation for Semidefinite Programming in Computer Vision. <i>Lecture Notes in Computer Science</i> , 2016 , 717-735	0.9	11
57	Improving Channel Charting with Representation -Constrained Autoencoders 2019 ,		10
56	VLSI Designs for Joint Channel Estimation and Data Detection in Large SIMO Wireless Systems. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2018 , 65, 1120-1132	3.9	10
55	MmWave channel estimation via atomic norm minimization for multi-user hybrid precoding 2018 ,		10
54	Accelerating massive MIMO uplink detection on GPU for SDR systems 2015 ,		10
53	Beamspace Channel Estimation for Massive MIMO mmWave Systems: Algorithm and VLSI Design. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2020 , 67, 5482-5495	3.9	10

52	Implicit vs. Explicit Approximate Matrix Inversion for Wideband Massive MU-MIMO Data Detection. <i>Journal of Signal Processing Systems</i> , 2018 , 90, 1311-1328	1.4	10
51	Feedforward Architectures for Decentralized Precoding in Massive MU-MIMO Systems 2018 ,		10
50	Mse-Optimal 1-Bit Precoding for Multiuser Mimo Via Branch and Bound 2018 ,		10
49	A robust and efficient method to recover neural events from noisy and corrupted data 2013 ,		9
48	Siamese Neural Networks for Wireless Positioning and Channel Charting 2019 ,		9
47	Decentralized equalization for massive MU-MIMO on FPGA 2017 ,		8
46	Multipoint Channel Charting for Wireless Networks 2018 ,		8
45	Subset-codebook precoding for 1-bit massive multiuser MIMO 2017 ,		7
44	Ultra-Wideband Joint Spatial Coding for Secure Communication and High-Resolution Imaging. <i>IEEE Transactions on Microwave Theory and Techniques</i> , 2017 , 65, 2525-2535	4.1	6
43	Decentralized Coordinate-Descent Data Detection and Precoding for Massive MU-MIMO 2019 ,		6
42	MmWave Multiuser MIMO Precoding With Fixed Subarrays and Quantized Phase Shifters. <i>IEEE Transactions on Vehicular Technology</i> , 2019 , 68, 11132-11145	6.8	6
41	BEACHES: Beamspace Channel Estimation for Multi-Antenna mmWave Systems and Beyond 2019 ,		6
40	A 354 Mb/s 0.37 mm ² 151 mW 32-User 256-QAM Near-MAP Soft-Input Soft-Output Massive MU-MIMO Data Detector in 28nm CMOS. <i>IEEE Solid-State Circuits Letters</i> , 2019 , 2, 127-130	2	6
39	Analog-to-Feature (A2F) Conversion for Audio-Event Classification 2018 ,		6
38	Timing and Frequency Synchronization for 1-bit Massive MU-MIMO-OFDM Downlink 2019 ,		5
37	Sparse signal recovery from sparsely corrupted measurements 2011 ,		5
36	Algorithm and VLSI Design for 1-Bit Data Detection in Massive MIMO-OFDM. <i>IEEE Open Journal of Circuits and Systems</i> , 2020 , 1, 170-184	1.7	5
35	Design Trade-offs for Decentralized Baseband Processing in Massive MU-MIMO Systems 2019 ,		5

34	Finite-Alphabet MMSE Equalization for All-Digital Massive MU-MIMO mmWave Communication. <i>IEEE Journal on Selected Areas in Communications</i> , 2020 , 38, 2128-2141	14.2	4
33	PPAC: A Versatile In-Memory Accelerator for Matrix-Vector-Product-Like Operations 2019 ,		4
32	Optimal large-MIMO data detection with transmit impairments 2015 ,		4
31	Learning phase-invariant dictionaries 2013 ,		4
30	Sparsity-Adaptive Beamspace Channel Estimation for 1-Bit mmWave Massive MIMO Systems 2020 ,		3
29	FPGA design of approximate semidefinite relaxation for data detection in large MIMO wireless systems 2016 ,		3
28	Soft-Output Joint Channel Estimation and Data Detection using Deep Unfolding 2021 ,		3
27	SNR Prediction in Cellular Systems based on Channel Charting 2020 ,		3
26	Massive MU-MIMO-OFDM Uplink with Direct RF-Sampling and 1-Bit ADCs 2019 ,		3
25	Efficient Pre-Conditioned Descent Search Detector for Massive MU-MIMO. <i>IEEE Transactions on Vehicular Technology</i> , 2020 , 69, 4663-4676	6.8	2
24	An Out-of-Sample Extension for Wireless Multipoint Channel Charting. <i>Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering</i> , 2019 , 208-217	0.2	2
23	BLAh: Boolean Logic Analysis for Graded Student Response Data. <i>IEEE Journal on Selected Topics in Signal Processing</i> , 2017 , 11, 754-764	7.5	2
22	Recovery guarantees for restoration and separation of approximately sparse signals 2011 ,		2
21	Coherence-based probabilistic recovery guarantees for sparsely corrupted signals 2012 ,		2
20	Joint Channel Estimation and Data Detection in Cell-Free Massive MU-MIMO Systems. <i>IEEE Transactions on Wireless Communications</i> , 2021 , 1-1	9.6	2
19	Analog vs. Digital Spatial Transforms: A Throughput, Power, and Area Comparison 2020 ,		2
18	Reducing the Complexity of Fingerprinting-Based Positioning using Locality-Sensitive Hashing 2019 ,		2
17	CSI-Based Multi-Antenna and Multi-Point Indoor Positioning Using Probability Fusion. <i>IEEE Transactions on Wireless Communications</i> , 2021 , 1-1	9.6	2

16	Unsupervised Charting of Wireless Channels 2018 ,		2
15	High-Bandwidth Spatial Equalization for mmWave Massive MU-MIMO With Processing-in-Memory. <i>IEEE Transactions on Circuits and Systems II: Express Briefs</i> , 2020 , 67, 891-895	3.5	1
14	VLSI design of a nonparametric equalizer for massive MU-MIMO 2017 ,		1
13	Statistical data correction for unreliable memories 2014 ,		1
12	Jammer Mitigation via Beam-Slicing for Low-Resolution mmWave Massive MU-MIMO. <i>IEEE Open Journal of Circuits and Systems</i> , 2021 , 2, 820-832	1.7	1
11	Mismatched Data Detection in Massive MU-MIMO. <i>IEEE Transactions on Signal Processing</i> , 2021 , 1-1	4.8	1
10	Identifying Unused RF Channels Using Least Matching Pursuit 2020 ,		1
9	ADMM-Based Infinity-Norm Detection for Massive MIMO: Algorithm and VLSI Architecture. <i>IEEE Transactions on Very Large Scale Integration (VLSI) Systems</i> , 2021 , 29, 747-759	2.6	1
8	SMUL-FFT: A Streaming Multiplierless Fast Fourier Transform. <i>IEEE Transactions on Circuits and Systems II: Express Briefs</i> , 2021 , 68, 1715-1719	3.5	1
7	Blind SNR Estimation and Nonparametric Channel Denoising in Multi-Antenna mmWave Systems 2021 ,		1
6	A 354 Mb/s 0.37 mm ² 151 mW 32-User 256-QAM Near-MAP Soft-Input Soft-Output Massive MU-MIMO Data Detector in 28nm CMOS 2019 ,		1
5	Approximate Gram-Matrix Interpolation for Wideband Massive MU-MIMO Systems. <i>IEEE Transactions on Vehicular Technology</i> , 2020 , 69, 4677-4688	6.8	
4	Sample-Efficient Spatio-Spectral Whitespace Detection Using Least Matching Pursuit. <i>IEEE Access</i> , 2021 , 9, 138394-138402	3.5	
3	Guest Editorial Special Issue on the 2016 IEEE International Symposium on Circuits and Systems (ISCAS 2016). <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2016 , 63, 2109-2111	3.9	
2	Optimal Data Detection and Signal Estimation in Systems With Input Noise. <i>IEEE Transactions on Signal Processing</i> , 2021 , 69, 5105-5119	4.8	
1	Hardware-Aware BeamSpace Precoding for All-Digital mmWave Massive MU-MIMO. <i>IEEE Communications Letters</i> , 2021 , 1-1	3.8	