Chuan Zhang

List of Publications by Year
in descending order

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130 papers	2,730 citations	394390 19 h-index	254170 43 g-index
132 all docs	132 docs citations	132 times ranked	1647 citing authors

#	Article	IF	Citations
1	Dynamic SCL Decoder With Path-Flipping for 5G Polar Codes. IEEE Wireless Communications Letters, 2022, 11, 391-395.	5.0	5
2	An Efficient Stochastic Convolution Architecture Based on Fast FIR Algorithm. IEEE Transactions on Circuits and Systems II: Express Briefs, 2022, 69, 984-988.	3.0	1
3	Joint Channel Estimation and Data Detection in Cell-Free Massive MU-MIMO Systems. IEEE Transactions on Wireless Communications, 2022, 21, 4068-4084.	9.2	12
4	Structured OMP for IRS-Assisted Mmwave Channel Estimation by Exploiting Angular Spread. IEEE Transactions on Vehicular Technology, 2022, 71, 4444-4448.	6.3	8
5	Fast Iterative Soft-Output List Decoding of Polar Codes. IEEE Transactions on Signal Processing, 2022, 70, 1361-1376.	5.3	6
6	Efficient MMSE-PIC Detection for Polar-Coded System Using Tree-Structured Gray Codes. IEEE Wireless Communications Letters, 2022, 11, 1310-1314.	5.0	1
7	Efficient Message Passing Receivers for Downlink MIMO-SCMA Systems. IEEE Transactions on Vehicular Technology, 2022, 71, 5073-5086.	6.3	3
8	Bayesian Matching Pursuit Based Estimation of Off-Grid Channel for Millimeter Wave Massive MIMO System. IEEE Transactions on Vehicular Technology, 2022, 71, 11603-11614.	6.3	1
9	Efficient Soft-Output Gaussâ€“Seidel Data Detector for Massive MIMO Systems. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 5049-5060.	5.4	35
10	Towards 6G wireless communication networks: vision, enabling technologies, and new paradigm shifts. Science China Information Sciences, 2021, 64, 1.	4.3	858
11	Hardware Implementation for Belief Propagation Flip Decoding of Polar Codes. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 1330-1341.	5.4	10
12	Approximate Expectation Propagation Massive MIMO Detector With Weighted Neumann-Series. IEEE Transactions on Circuits and Systems II: Express Briefs, 2021, 68, 662-666.	3.0	14
13	Improving Approximate Expectation Propagation Massive MIMO Detector With Deep Learning. IEEE Wireless Communications Letters, 2021, 10, 2145-2149.	5.0	6
14	PCCR Based Wheelchair Control System [Society News]. IEEE Circuits and Systems Magazine, 2021, 21, 79-84.	2.3	0
15	An Efficient Detector for Massive MIMO Based on Improved Matrix Partition. IEEE Transactions on Signal Processing, 2021, 69, 2971-2986.	5.3	10
16	Adaptive Successive Cancellation Priority Decoder for 5G Polar Codes. , 2021, , .		0
17	Efficient Fast-SCAN Flip Decoder for Polar Codes. , 2021, , .		2
18	A Reconfigurable and Pipelined Architecture for Standard-Compatible LDPC and Polar Decoding. IEEE Transactions on Vehicular Technology, 2021, 70, 5431-5444.	6.3	5

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19	Hardware Implementation for Bipartite Belief Propagation Polar Decoding with Bit Flipping. Journal of Signal Processing Systems, 2021, 93, 1149-1157.	2.1	0
20	Efficient Row-Layered Decoder for Sparse Code Multiple Access. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 3495-3507.	5.4	4
21	Optimizing Vertical Link Placement and Congestion Aware Dynamic Elevator Assignment for Partially Connected 3D-NoCs. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 1957-1970.	2.7	2
22	Guest Editorial Circuits, Systems, and Algorithms for Beyond 5G and Toward 6G. IEEE Open Journal of Circuits and Systems, 2021, 2, 223-225.	1.9	0
23	Low-Complexity Construction of Polar Codes Based on Genetic Algorithm. IEEE Communications Letters, 2021, 25, 3175-3179.	4.1	6
24	Molecular computing for Markov chains. Natural Computing, 2020, 19, 593-608.	3.0	2
25	Enhanced Linear Iterative Detector for Massive Multiuser MIMO Uplink. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 540-552.	5.4	15
26	Quantum version of MMSE-based massive MIMO uplink detection. Quantum Information Processing, 2020, 19, 1.	2.2	5
27	An Efficient Software List Sphere Decoder for Polar Codes. Journal of Signal Processing Systems, 2020, 92, 517-528.	2.1	2
28	TG-SPP: A One-Transmission-Gate Short-Path Padding for Wide-Voltage-Range Resilient Circuits in 28-nm CMOS. IEEE Journal of Solid-State Circuits, 2020, 55, 1422-1436.	5.4	24
29	An Efficient Software Stack Sphere Decoder for Polar Codes. IEEE Transactions on Vehicular Technology, 2020, 69, 1257-1266.	6.3	6
30	Efficient Expectation Propagation Massive MIMO Detector With Neumann-Series Approximation. IEEE Transactions on Circuits and Systems II: Express Briefs, 2020, 67, 1924-1928.	3.0	14
31	Efficient Hardware for Generalized Turbo Signal Recovery in Compressed Sensing. IEEE Transactions on Vehicular Technology, 2020, 69, 1245-1256.	6.3	0
32	Improving Massive MIMO Message Passing Detectors With Deep Neural Network. IEEE Transactions on Vehicular Technology, 2020, 69, 1267-1280.	6.3	36
33	Improved Belief Propagation Polar Decoders With Bit-Flipping Algorithms. IEEE Transactions on Communications, 2020, 68, 6699-6713.	7.8	20
34	Implementation of a Cloud-Based Cell-Free Distributed Massive MIMO System. IEEE Communications Magazine, 2020, 58, 61-67.	6.1	31
35	Autogeneration of Pipelined Belief Propagation Polar Decoders. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2020, 28, 1703-1716.	3.1	3
36	Efficient Sphere Polar Decoding via Synchronous Determination. IEEE Transactions on Vehicular Technology, 2020, 69, 6777-6781.	6.3	7

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37	Efficient Belief Propagation Polar Decoder With Loop Simplification Based Factor Graphs. IEEE Transactions on Vehicular Technology, 2020, 69, 5657-5660.	6.3	15
38	Bipartite Belief Propagation Polar Decoding With Bit-Flipping. , 2020, , .		2
39	Artificial Intelligence for 5G and Beyond 5G: Implementations, Algorithms, and Optimizations. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2020, 10, 149-163.	3.6	72
40	Artificial Intelligence for 5G and Beyond 5G: Implementations, Algorithms, and Optimizations. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2020, 10, 145-148.	3.6	6
41	A Flexible and High Parallel Permutation Network for 5G LDPC Decoders. IEEE Transactions on Circuits and Systems II: Express Briefs, 2020, 67, 3018-3022.	3.0	8
42	Deep Learning-Aided Belief Propagation Decoder for Polar Codes. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2020, 10, 189-203.	3.6	25
43	Stochastic Belief Propagation Polar Decoding With Efficient Re-Randomization. IEEE Transactions on Vehicular Technology, 2020, 69, 6771-6776.	6.3	6
44	Efficient Pre-Conditioned Descent Search Detector for Massive MU-MIMO. IEEE Transactions on Vehicular Technology, 2020, 69, 4663-4676.	6.3	5
45	Low-Latency Segmented List-Pruning Software Polar List Decoder. IEEE Transactions on Vehicular Technology, 2020, 69, 3575-3589.	6.3	11
46	A Linear-Complexity Channel-Independent Code Construction Method for List Sphere Polar Decoder. Journal of Signal Processing Systems, 2020, 92, 763-774.	2.1	3
47	Reconfigurable and Low-Complexity Accelerator for Convolutional and Generative Networks Over Finite Fields. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 4894-4907.	2.7	10
48	Efficient Sparse Code Multiple Access Decoder Based on Deterministic Message Passing Algorithm. IEEE Transactions on Vehicular Technology, 2020, 69, 3562-3574.	6.3	15
49	Polar Compiler: Auto-Generator of Hardware Architectures for Polar Encoders. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 2091-2102.	5.4	5
50	Efficient Successive Over Relaxation Detectors for Massive MIMO. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 2128-2139.	5.4	22
51	Mathematical Modeling Analysis of Strong Physical Unclonable Functions. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 4426-4438.	2.7	18
52	Enhanced Belief Propagation Decoder for 5G Polar Codes With Bit-Flipping. IEEE Transactions on Circuits and Systems II: Express Briefs, 2020, 67, 901-905.	3.0	33
53	A General Construction and Encoder Implementation of Polar Codes. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2020, 28, 1690-1702.	3.1	5
54	Efficient Successive Cancellation Stack Decoder for Polar Codes. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 2608-2619.	3.1	11

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55	A Low-Complexity Massive MIMO Detection Based on Approximate Expectation Propagation. IEEE Transactions on Vehicular Technology, 2019, 68, 7260-7272.	6.3	36
56	A Low-Complexity Belief Propagation Based Decoding Scheme for Polar Codes - Decodability Detection and Early Stopping Prediction. IEEE Access, 2019, 7, 159808-159820.	4.2	10
57	Congestion-Aware Dynamic Elevator Assignment for Partially Connected 3D-NoCs. , 2019, , .		7
58	A Wide-Voltage-Range Half-Path Timing Error-Detection System With a 9-Transistor Transition-Detector in 40-nm CMOS. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 2288-2297.	5.4	13
59	Joint Detection and Decoding of Polar-Coded OFDM-IDMA Systems. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 4005-4017.	5.4	5
60	On the Low-Complexity, Hardware-Friendly Tridiagonal Matrix Inversion for Correlated Massive MIMO Systems. IEEE Transactions on Vehicular Technology, 2019, 68, 6272-6285.	6.3	25
61	An Improved Software List Sphere Polar Decoder With Synchronous Determination. IEEE Transactions on Vehicular Technology, 2019, 68, 5236-5245.	6.3	12
62	Thermal Sensor Placement and Thermal Reconstruction Under Gaussian and Non-Gaussian Sensor Noises for 3-D NoC. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2019, 38, 2139-2152.	2.7	4
63	A Novel Approach to Angle-of-Arrival Estimation Based on Layered Ensemble Learning. , 2019, , .		0
64	A New Uplink Channel Estimation Architecture for Massive MIMO Systems with PDMA. , 2019, , .		2
65	Segmented Successive Cancellation List Polar Decoding with Tailored CRC. Journal of Signal Processing Systems, 2019, 91, 923-935.	2.1	5
66	Efficient Channel Estimator With Angle-Division Multiple Access. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 708-718.	5.4	8
67	AI for 5G: research directions and paradigms. Science China Information Sciences, 2019, 62, 1.	4.3	122
68	DNA computing for combinational logic. Science China Information Sciences, 2019, 62, 1.	4.3	7
69	A Uniform Molecular Low-Density Parity Check Decoder. ACS Synthetic Biology, 2019, 8, 82-90.	3.8	4
70	Adaptive Preconditioned Iterative Linear Detection and Architecture for Massive MU-MIMO Uplink. Journal of Signal Processing Systems, 2018, 90, 1453-1467.	2.1	11
71	Molecular Synthesis for Probability Theory and Stochastic Process. Journal of Signal Processing Systems, 2018, 90, 1479-1494.	2.1	4
72	Reconfigurable Decoder for LDPC and Polar Codes. , 2018, , .		14

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73	Engineering highly sensitive whole-cell mercury biosensors based on positive feedback loops from quorum-sensing systems. Analyst, The, 2018, 143, 630-634.	3.5	37
74	Low-Complexity Belief Propagation Detection for Correlated Large-Scale MIMO Systems. Journal of Signal Processing Systems, 2018, 90, 585-599.	2.1	32
75	A LARGE-SCALE EXTENSION OF SPARSE-CODE MULTIPLE-ACCESS SYSTEM. , 2018, , .		1
76	Expectation Propagation Detection with Neumann-Series Approximation for Massive MIMO. , 2018, , .		18
77	A Novel D-Metric for Blind Detection of Polar Codes. , 2018, , .		3
78	Arithmetic Computations Based on Chemical Reaction Networks. , 2018, , .		1
79	A Low-Complexity Massive MIMO Detection Algorithm Based on Matrix Partition. , 2018, , .		3
80	LOW-COMPLEXITY MESSAGE PASSING MIMO DETECTION ALGORITHM WITH DEEP NEURAL NETWORK. , 2018, , .		10
81	Synthesizing LDPC Belief Propagation Decoding with Molecular Reactions. , 2018, , .		4
82	Adaptive Damped Jacobi Detector and Architecture for Massive MIMO Uplink. , 2018, , .		4
83	Massive MIMO Detection based on Barzilai-Borwein Algorithm. , 2018, , .		4
84	Joint List Polar Decoder with Successive Cancellation and Sphere Decoding. , 2018, , .		3
85	Kalman Predictor-Based Proactive Dynamic Thermal Management for 3-D NoC Systems With Noisy Thermal Sensors. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2017, 36, 1869-1882.	2.7	16
86	A Formal Combinational Logic Synthesis With Chemical Reaction Networks. IEEE Transactions on Molecular, Biological, and Multi-Scale Communications, 2017, 3, 33-47.	2.1	19
87	Low-complexity detection algorithms based on matrix partition for massive MIMO. , 2017, , .		4
88	Joint detection and decoding of polar-coded SCMA systems. , 2017, , .		23
89	The VLSI architecture for channel estimation based on ADMA. , 2017, , .		3
90	Advanced Baseband Processing Algorithms, Circuits, and Implementations for 5G Communication. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2017, 7, 477-490.	3.6	26

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91	Joint Detection and Decoding for Polar Coded MIMO Systems. , 2017, , .		9
92	Joint detection and decoding for polar-coded OFDM-IDMA systems. , 2017, , .		2
93	Using Fermat number transform to accelerate convolutional neural network. , 2017, , .		6
94	Efficient fast convolution architecture based on stochastic computing. , 2017, , .		4
95	Hardware efficient detection for massive MIMO uplink with parallel Gauss-Seidel method. , 2017, , .		21
96	Algorithm and architecture for joint detection and decoding for MIMO with LDPC codes. , 2017, , .		6
97	Improved polar decoder based on deep learning. , 2017, , .		95
98	A DNA strand displacement reaction implementation-friendly clock design. , 2017, , .		6
99	DC MUX PUF: A highly reliable feed-back MUX PUF based on measuring duty cycle. , 2017, , .		4
100	Efficient near-MMSE detector for large-scale MIMO systems. , 2017, , .		9
101	Graph-merged detection and decoding of polar-coded MIMO systems. , 2017, , .		2
102	Efficient fast convolution architectures for convolutional neural network. , 2017, , .		18
103	Belief propagation detection based on max-sum algorithm for massive MIMO systems. , 2017, , .		8
104	A fast-convergent pre-conditioned conjugate gradient detection for massive MIMO uplink. , 2016, , .		13
105	Low-latency software successive cancellation list polar decoder using stage-located copy. , 2016, , .		13
106	Low-complexity segmented CRC-aided SC stack decoder for polar codes. , 2016, , .		8
107	Successive Cancellation Heap Polar Decoding. , 2016, , .		4
108	Hardware Efficient and Low-Latency CA-SCL Decoder Based on Distributed Sorting. , 2016, , .		21

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109	Efficient Hardware Architecture for Compressed Sensing with DFT Sensing Matrix. , 2016, , .		6
110	Synthesis of Probability Theory Based on Molecular Computation. , 2016, , .		8
111	Steepest Descent Method Based Soft-Output Detection for Massive MIMO Uplink. , 2016, , .		12
112	Adjustable iterative soft-output detection for massive MIMO uplink. , 2016, , .		4
113	Efficient SOR-based detection and architecture for large-scale MIMO uplink. , 2016, , .		17
114	Segmented CRC-Aided SC List Polar Decoding. , 2016, , .		45
115	Efficient architecture for soft-output massive MIMO detection with Gauss-Seidel method. , 2016, , .		88
116	Pipelined belief propagation polar decoders. , 2016, , .		24
117	Joint detection and decoding for MIMO systems with polar codes. , 2016, , .		10
118	Hardware-efi¬cient folded SC polar decoder based on k-segment decomposition. , 2016, , .		3
119	A formal design methodology for synthesizing a clock signal with an arbitrary duty cycle of M/N. , 2015, , .		13
120	Circuits and systems for 5G network: Massive MIMO and advanced coding. , 2015, , .		4
121	Efficient early termination schemes for belief-propagation decoding of polar codes. , 2015, , .		32
122	Coefficient adjustment matrix inversion approach and architecture for massive MIMO systems. , 2015, , .		15
123	Improved symbol-based belief propagation detection for large-scale MIMO. , 2015, , .		34
124	Karnaugh map-aided combinational logic design approach with bistable molecular reactions. , 2015, , .		10
125	Efficient iterative soft detection based on polynomial approximation for massive MIMO. , 2015, , .		19
126	Efficient matrix inversion architecture for linear detection in massive MIMO systems. , 2015, , .		23

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127	Latency Analysis and Architecture Design of Simplified SC Polar Decoders. IEEE Transactions on Circuits and Systems II: Express Briefs, 2014, 61, 115-119.	3.0	35
128	Hardware architecture for list successive cancellation polar decoder. , 2014, , .		24
129	Improved K-best algorithm for low-complexity MIMO detector. , 2014, , .		5
130	Low-Latency Sequential and Overlapped Architectures for Successive Cancellation Polar Decoder. IEEE Transactions on Signal Processing, 2013, 61, 2429-2441.	5.3	118