

# Zizhong Chen

## List of Publications by Year in descending order

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112  
papers

2,329  
citations

567144

15  
h-index

580701

25  
g-index

112  
all docs

112  
docs citations

112  
times ranked

904  
citing authors

#	ARTICLE	IF	CITATIONS
1	GBNRS: A Novel Rough Set Algorithm for Fast Adaptive Attribute Reduction in Classification. IEEE Transactions on Knowledge and Data Engineering, 2022, 34, 1231-1242.	4.0	84
2	Algorithm-Based Fault Tolerance for Convolutional Neural Networks. IEEE Transactions on Parallel and Distributed Systems, 2021, , 1-1.	4.0	33
3	Optimizing Error-Bounded Lossy Compression for Scientific Data by Dynamic Spline Interpolation. , 2021, , .		46
4	FT-BLAS. , 2021, , .		4
5	Exploring Autoencoder-based Error-bounded Compression for Scientific Data. , 2021, , .		11
6	Resilient error-bounded lossy compressor for data transfer. , 2021, , .		9
7	Locality-aware Thread Block Design in Single and Multi-GPU Graph Processing. , 2021, , .		0
8	Improving Lossy Compression for SZ by Exploring the Best-Fit Lossless Compression Techniques. , 2021, , .		4
9	Weighted pseudometric approximation of 2-dimensional fuzzy numbers by fuzzy 2-cell prismoid numbers preserving the centroid. Fuzzy Sets and Systems, 2020, 387, 158-173.	1.6	5
10	Towards End-to-end SDC Detection for HPC Applications Equipped with Lossy Compression. , 2020, , .		7
11	CAB-MPI: Exploring Interprocess Work-Stealing towards Balanced MPI Communication. , 2020, , .		7
12	Significantly Improving Lossy Compression for HPC Datasets with Second-Order Prediction and Parameter Optimization. , 2020, , .		38
13	SAOU. , 2020, , .		11
14	Toward Feature-Preserving 2D and 3D Vector Field Compression. , 2020, , .		12
15	SDRBench: Scientific Data Reduction Benchmark for Lossy Compressors. , 2020, , .		32
16	Data Transfer between Scientific Facilities â€œ Bottleneck Analysis, Insights and Optimizations. , 2019, , .		18
17	Optimizing Lossy Compression Rate-Distortion from Automatic Online Selection between SZ and ZFP. IEEE Transactions on Parallel and Distributed Systems, 2019, 30, 1857-1871.	4.0	51
18	GreenMM. , 2019, , .		24

#	ARTICLE	IF	CITATIONS
19	Efficient concolic testing of MPI applications. , 2019, , .		4
20	TSM2. , 2019, , .		23
21	Improving Performance of Data Dumping with Lossy Compression for Scientific Simulation. , 2019, , .		15
22	Significantly improving lossy compression quality based on an optimized hybrid prediction model. , 2019, , .		23
23	FT-iSort. , 2019, , .		8
24	Z-checker: A framework for assessing lossy compression of scientific data. International Journal of High Performance Computing Applications, 2019, 33, 285-303.	2.4	32
25	Scaling Up Parallel Computation of Tiled QR Factorizations by a Distributed Scheduling Runtime System and Analytical Modeling. Parallel Processing Letters, 2018, 28, 1850004.	0.4	1
26	Improving performance of iterative methods by lossy checkpointing. , 2018, , .		28
27	An Efficient Transformation Scheme for Lossy Data Compression with Point-Wise Relative Error Bound. , 2018, , .		40
28	Build and Execution Environment (BEE): an Encapsulated Environment Enabling HPC Applications Running Everywhere. , 2018, , .		5
29	Optimizing Lossy Compression with Adjacent Snapshots for N-body Simulation Data. , 2018, , .		12
30	Error-Controlled Lossy Compression Optimized for High Compression Ratios of Scientific Datasets. , 2018, , .		139
31	Fault Tolerant One-sided Matrix Decompositions on Heterogeneous Systems with GPUs. , 2018, , .		11
32	Fixed-PSNR Lossy Compression for Scientific Data. , 2018, , .		16
33	COMPI: Concolic Testing for MPI Applications. , 2018, , .		5
34	Non-intrusively Avoiding Scaling Problems in and out of MPI Collectives. , 2018, , .		1
35	BeeFlow: A Workflow Management System for In Situ Processing across HPC and Cloud Systems. , 2018, , .		9
36	Performance analysis and optimization of in-situ integration of simulation with data analysis. , 2018, , .		4

#	ARTICLE	IF	CITATIONS
37	Silent Data Corruption Resilient Two-sided Matrix Factorizations. , 2017, , .		16
38	Significantly Improving Lossy Compression for Scientific Data Sets Based on Multidimensional Prediction and Error-Controlled Quantization. , 2017, , .		170
39	Correcting soft errors online in fast fourier transform. , 2017, , .		19
40	Parastack. , 2017, , .		6
41	In-depth exploration of single-snapshot lossy compression techniques for N-body simulations. , 2017, , .		24
42	Silent Data Corruption Resilient Two-sided Matrix Factorizations. ACM SIGPLAN Notices, 2017, 52, 415-427.	0.2	2
43	Exploration of Pattern-Matching Techniques for Lossy Compression on Cosmology Simulation Data Sets. Lecture Notes in Computer Science, 2017, , 43-54.	1.0	11
44	GreenLA: Green Linear Algebra Software for GPU-accelerated Heterogeneous Computing. , 2016, , .		3
45	New-Sum. , 2016, , .		31
46	Towards Practical Algorithm Based Fault Tolerance in Dense Linear Algebra. , 2016, , .		25
47	suCAQR: A Simplified Communication-Avoiding QR Factorization Solver Using the TBLAS Framework. , 2016, , .		0
48	Algorithm-Directed Data Placement in Explicitly Managed Non-Volatile Memory. , 2016, , .		28
49	GPU-ABFT: Optimizing Algorithm-Based Fault Tolerance for Heterogeneous Systems with GPUs. , 2016, , .		15
50	Online Algorithm-Based Fault Tolerance for Cholesky Decomposition on Heterogeneous Systems with GPUs. , 2016, , .		19
51	Scalable Energy Efficiency with Resilience for High Performance Computing Systems. Transactions on Architecture and Code Optimization, 2016, 12, 1-27.	1.6	5
52	Optimising MPI tree-based communication for NUMA architectures. International Journal of Autonomous and Adaptive Communications Systems, 2015, 8, 407.	0.2	2
53	Simulated Annealing to Generate Numerically Stable Real Number Error Correction Codes. , 2015, , .		0
54	Cholesky Factorization on Heterogeneous CPU and GPU Systems. , 2015, , .		2

#	ARTICLE	IF	CITATIONS
55	Fail-Stop Failure Algorithm-Based Fault Tolerance for Cholesky Decomposition. IEEE Transactions on Parallel and Distributed Systems, 2015, 26, 1323-1335.	4.0	22
56	Investigating the Interplay between Energy Efficiency and Resilience in High Performance Computing. , 2015, , .		21
57	Slow Down or Halt. , 2015, , .		11
58	Extending checksum-based ABFT to tolerate soft errors online in iterative methods. , 2014, , .		5
59	TX: Algorithmic Energy Saving for Distributed Dense Matrix Factorizations. , 2014, , .		1
60	FT-ScaLAPACK. , 2014, , .		39
61	A survey of power and energy efficient techniques for high performance numerical linear algebra operations. Parallel Computing, 2014, 40, 559-573.	1.3	34
62	HP-DAEMON: High Performance Distributed Adaptive Energy-efficient Matrix-multiplicatiON. Procedia Computer Science, 2014, 29, 599-613.	1.2	6
63	TOUGH2-PETSc: A Parallel Solver for TOUGH2. , 2014, , .		0
64	On-line soft error correction in matrixâ€“matrix multiplication. Journal of Computational Science, 2013, 4, 465-472.	1.5	16
65	Power and energy characteristics of MapReduce data movements. , 2013, , .		8
66	Multilevel Diskless Checkpointing. IEEE Transactions on Computers, 2013, 62, 772-783.	2.4	23
67	Energy-Efficient Scheduling for Multicore Systems with Bounded Resources. , 2013, , .		0
68	A2E: Adaptively aggressive energy efficient DVFS scheduling for data intensive applications. , 2013, , .		5
69	Online-ABFT. , 2013, , .		94
70	Rethinking algorithm-based fault tolerance with a cooperative software-hardware approach. , 2013, , .		31
71	Correcting soft errors online in LU factorization. , 2013, , .		10
72	Online-ABFT. ACM SIGPLAN Notices, 2013, 48, 167-176.	0.2	22

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73	Improving performance and energy efficiency of matrix multiplication via pipeline broadcast. , 2013, , .		4
74	Correcting soft errors online in LU factorization. , 2013, , .		30
75	eTune: A Power Analysis Framework for Data-Intensive Computing. , 2012, , .		7
76	Energy consumption analysis of parallel sorting algorithms running on multicore systems. , 2012, , .		11
77	Runtime Optimization of Broadcast Communications Using Dynamic Network Topology Information from MPI. , 2012, , .		3
78	Energy Efficient Parallel Matrix-Matrix Multiplication for DVFS-enabled Clusters. , 2012, , .		2
79	Optimizing Process-to-Core Mappings for Application Level Multi-dimensional MPI Communications. , 2012, , .		7
80	Reduced Data Communication for Parallel CMA-ES for REACTS. , 2012, , .		0
81	Optimizing Process-to-Core Mappings for Two Dimensional Broadcast/Reduce on Multicore Architectures. , 2011, , .		3
82	High performance linpack benchmark. , 2011, , .		78
83	Algorithm-based recovery for iterative methods without checkpointing. , 2011, , .		78
84	Matrix Multiplication on GPUs with On-Line Fault Tolerance. , 2011, , .		43
85	Fault tolerant matrix-matrix multiplication. , 2011, , .		28
86	Algorithm-based recovery for HPL. , 2011, , .		2
87	SRC. , 2011, , .		1
88	Algorithm-based recovery for HPL. ACM SIGPLAN Notices, 2011, 46, 303-304.	0.2	0
89	Algorithm-Based Recovery for Newton's Method without Checkpointing. , 2011, , .		4
90	Highly scalable checkpointing for exascale computing. , 2010, , .		0

#	ARTICLE	IF	CITATIONS
91	Constructing numerically stable real number codes using evolutionary computation. , 2010, , .		3
92	Fault tolerant linear algebra: Recovering from fail-stop failures without checkpointing. , 2010, , .		2
93	Algorithmic Cholesky factorization fault recovery. , 2010, , .		29
94	Scalable Fault Tolerance for Large-Scale Parallel and Distributed Computing. , 2010, , 760-783.		0
95	Adaptive Checkpointing (Invited Paper). Journal of Communications, 2010, 5, .	1.3	0
96	Pipelining parallel image compositing and delivery for efficient remote visualization. Journal of Parallel and Distributed Computing, 2009, 69, 230-238.	2.7	7
97	N-Level Diskless Checkpointing. , 2009, , .		2
98	Optimal real number codes for fault tolerant matrix operations. , 2009, , .		29
99	Highly Scalable Self-Healing Algorithms for High Performance Scientific Computing. IEEE Transactions on Computers, 2009, 58, 1512-1524.	2.4	32
100	A Scalable Checkpoint Encoding Algorithm for Diskless Checkpointing. , 2008, , .		16
101	Algorithm-Based Fault Tolerance for Fail-Stop Failures. IEEE Transactions on Parallel and Distributed Systems, 2008, 19, 1628-1641.	4.0	92
102	Performance of MPI broadcast algorithms. Parallel and Distributed Processing Symposium (IPDPS), Proceedings of the International Conference on, 2008, , .	1.0	8
103	Extending algorithm-based fault tolerance to tolerate fail-stop failures in high performance distributed environments. Parallel and Distributed Processing Symposium (IPDPS), Proceedings of the International Conference on, 2008, , .	1.0	12
104	Self Adaptive Application Level Fault Tolerance for Parallel and Distributed Computing. , 2007, , .		4
105	Disaster Survival Guide in Petascale Computing. Chapman & Hall/CRC Computational Science, 2007, , 263-288.	0.5	0
106	Algorithm-based checkpoint-free fault tolerance for parallel matrix computations on volatile resources. , 2006, , .		15
107	Numerically Stable Real Number Codes Based on Random Matrices. Lecture Notes in Computer Science, 2005, , 115-122.	1.0	20
108	Fault tolerant high performance computing by a coding approach. , 2005, , .		61

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109	Process Fault Tolerance: Semantics, Design and Applications for High Performance Computing. International Journal of High Performance Computing Applications, 2005, 19, 465-477.	2.4	40
110	Condition Numbers of Gaussian Random Matrices. SIAM Journal on Matrix Analysis and Applications, 2005, 27, 603-620.	0.7	116
111	The LAPACK for clusters project: an example of self adapting numerical software. , 2004, , .		1
112	Self-adapting software for numerical linear algebra and LAPACK for clusters. Parallel Computing, 2003, 29, 1723-1743.	1.3	41