

Zizhong Chen

List of Publications by Year in descending order

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112
papers

2,329
citations

567144

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docs citations

112
times ranked

904
citing authors

#	ARTICLE	IF	CITATIONS
1	Significantly Improving Lossy Compression for Scientific Data Sets Based on Multidimensional Prediction and Error-Controlled Quantization. , 2017, , .		170
2	Error-Controlled Lossy Compression Optimized for High Compression Ratios of Scientific Datasets. , 2018, , .		139
3	Condition Numbers of Gaussian Random Matrices. SIAM Journal on Matrix Analysis and Applications, 2005, 27, 603-620.	0.7	116
4	Online-ABFT. , 2013, , .		94
5	Algorithm-Based Fault Tolerance for Fail-Stop Failures. IEEE Transactions on Parallel and Distributed Systems, 2008, 19, 1628-1641.	4.0	92
6	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
7	High performance linpack benchmark. , 2011, , .		78
8	Algorithm-based recovery for iterative methods without checkpointing. , 2011, , .		78
9	Fault tolerant high performance computing by a coding approach. , 2005, , .		61
10	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
11	Optimizing Error-Bounded Lossy Compression for Scientific Data by Dynamic Spline Interpolation. , 2021, , .		46
12	Matrix Multiplication on GPUs with On-Line Fault Tolerance. , 2011, , .		43
13	Self-adapting software for numerical linear algebra and LAPACK for clusters. Parallel Computing, 2003, 29, 1723-1743.	1.3	41
14	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
15	An Efficient Transformation Scheme for Lossy Data Compression with Point-Wise Relative Error Bound. , 2018, , .		40
16	FT-ScaLAPACK. , 2014, , .		39
17	Significantly Improving Lossy Compression for HPC Datasets with Second-Order Prediction and Parameter Optimization. , 2020, , .		38
18	A survey of power and energy efficient techniques for high performance numerical linear algebra operations. Parallel Computing, 2014, 40, 559-573.	1.3	34

#	ARTICLE	IF	CITATIONS
19	Algorithm-Based Fault Tolerance for Convolutional Neural Networks. IEEE Transactions on Parallel and Distributed Systems, 2021, , 1-1.	4.0	33
20	Highly Scalable Self-Healing Algorithms for High Performance Scientific Computing. IEEE Transactions on Computers, 2009, 58, 1512-1524.	2.4	32
21	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
22	SDRBench: Scientific Data Reduction Benchmark for Lossy Compressors. , 2020, , .		32
23	Rethinking algorithm-based fault tolerance with a cooperative software-hardware approach. , 2013, , .		31
24	New-Sum. , 2016, , .		31
25	Correcting soft errors online in LU factorization. , 2013, , .		30
26	Optimal real number codes for fault tolerant matrix operations. , 2009, , .		29
27	Algorithmic Cholesky factorization fault recovery. , 2010, , .		29
28	Fault tolerant matrix-matrix multiplication. , 2011, , .		28
29	Algorithm-Directed Data Placement in Explicitly Managed Non-Volatile Memory. , 2016, , .		28
30	Improving performance of iterative methods by lossy checkpointing. , 2018, , .		28
31	Towards Practical Algorithm Based Fault Tolerance in Dense Linear Algebra. , 2016, , .		25
32	In-depth exploration of single-snapshot lossy compression techniques for N-body simulations. , 2017, , .		24
33	GreenMM. , 2019, , .		24
34	Multilevel Diskless Checkpointing. IEEE Transactions on Computers, 2013, 62, 772-783.	2.4	23
35	TSM2. , 2019, , .		23
36	Significantly improving lossy compression quality based on an optimized hybrid prediction model. , 2019, , .		23

#	ARTICLE	IF	CITATIONS
37	Online-ABFT. ACM SIGPLAN Notices, 2013, 48, 167-176.	0.2	22
38	Fail-Stop Failure Algorithm-Based Fault Tolerance for Cholesky Decomposition. IEEE Transactions on Parallel and Distributed Systems, 2015, 26, 1323-1335.	4.0	22
39	Investigating the Interplay between Energy Efficiency and Resilience in High Performance Computing. , 2015, , .		21
40	Numerically Stable Real Number Codes Based on Random Matrices. Lecture Notes in Computer Science, 2005, , 115-122.	1.0	20
41	Online Algorithm-Based Fault Tolerance for Cholesky Decomposition on Heterogeneous Systems with GPUs. , 2016, , .		19
42	Correcting soft errors online in fast fourier transform. , 2017, , .		19
43	Data Transfer between Scientific Facilities â€œ Bottleneck Analysis, Insights and Optimizations. , 2019, , .		18
44	A Scalable Checkpoint Encoding Algorithm for Diskless Checkpointing. , 2008, , .		16
45	On-line soft error correction in matrixâ€œmatrix multiplication. Journal of Computational Science, 2013, 4, 465-472.	1.5	16
46	Silent Data Corruption Resilient Two-sided Matrix Factorizations. , 2017, , .		16
47	Fixed-PSNR Lossy Compression for Scientific Data. , 2018, , .		16
48	Algorithm-based checkpoint-free fault tolerance for parallel matrix computations on volatile resources. , 2006, , .		15
49	GPU-ABFT: Optimizing Algorithm-Based Fault Tolerance for Heterogeneous Systems with GPUs. , 2016, , .		15
50	Improving Performance of Data Dumping with Lossy Compression for Scientific Simulation. , 2019, , .		15
51	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
52	Optimizing Lossy Compression with Adjacent Snapshots for N-body Simulation Data. , 2018, , .		12
53	Toward Feature-Preserving 2D and 3D Vector Field Compression. , 2020, , .		12
54	Energy consumption analysis of parallel sorting algorithms running on multicore systems. , 2012, , .		11

#	ARTICLE	IF	CITATIONS
55	Slow Down or Halt. , 2015, , .		11
56	Fault Tolerant One-sided Matrix Decompositions on Heterogeneous Systems with GPUs. , 2018, , .		11
57	Exploration of Pattern-Matching Techniques for Lossy Compression on Cosmology Simulation Data Sets. Lecture Notes in Computer Science, 2017, , 43-54.	1.0	11
58	SAOU. , 2020, , .		11
59	Exploring Autoencoder-based Error-bounded Compression for Scientific Data. , 2021, , .		11
60	Correcting soft errors online in LU factorization. , 2013, , .		10
61	BeeFlow: A Workflow Management System for In Situ Processing across HPC and Cloud Systems. , 2018, , .		9
62	Resilient error-bounded lossy compressor for data transfer. , 2021, , .		9
63	Performance of MPI broadcast algorithms. Parallel and Distributed Processing Symposium (IPDPS), Proceedings of the International Conference on, 2008, , .	1.0	8
64	Power and energy characteristics of MapReduce data movements. , 2013, , .		8
65	FT-iSort. , 2019, , .		8
66	Pipelining parallel image compositing and delivery for efficient remote visualization. Journal of Parallel and Distributed Computing, 2009, 69, 230-238.	2.7	7
67	eTune: A Power Analysis Framework for Data-Intensive Computing. , 2012, , .		7
68	Optimizing Process-to-Core Mappings for Application Level Multi-dimensional MPI Communications. , 2012, , .		7
69	Towards End-to-end SDC Detection for HPC Applications Equipped with Lossy Compression. , 2020, , .		7
70	CAB-MPI: Exploring Interprocess Work-Stealing towards Balanced MPI Communication. , 2020, , .		7
71	HP-DAEMON: High Performance Distributed Adaptive Energy-efficient Matrix-multiplicatiON. Procedia Computer Science, 2014, 29, 599-613.	1.2	6
72	Parastack. , 2017, , .		6

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73	A2E: Adaptively aggressive energy efficient DVFS scheduling for data intensive applications. , 2013, , .		5
74	Extending checksum-based ABFT to tolerate soft errors online in iterative methods. , 2014, , .		5
75	Build and Execution Environment (BEE): an Encapsulated Environment Enabling HPC Applications Running Everywhere. , 2018, , .		5
76	COMPI: Concolic Testing for MPI Applications. , 2018, , .		5
77	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
78	Scalable Energy Efficiency with Resilience for High Performance Computing Systems. Transactions on Architecture and Code Optimization, 2016, 12, 1-27.	1.6	5
79	Self Adaptive Application Level Fault Tolerance for Parallel and Distributed Computing. , 2007, , .		4
80	Algorithm-Based Recovery for Newton's Method without Checkpointing. , 2011, , .		4
81	Improving performance and energy efficiency of matrix multiplication via pipeline broadcast. , 2013, , .		4
82	Performance analysis and optimization of in-situ integration of simulation with data analysis. , 2018, , .		4
83	Efficient concolic testing of MPI applications. , 2019, , .		4
84	FT-BLAS. , 2021, , .		4
85	Improving Lossy Compression for SZ by Exploring the Best-Fit Lossless Compression Techniques. , 2021, , .		4
86	Constructing numerically stable real number codes using evolutionary computation. , 2010, , .		3
87	Optimizing Process-to-Core Mappings for Two Dimensional Broadcast/Reduce on Multicore Architectures. , 2011, , .		3
88	Runtime Optimization of Broadcast Communications Using Dynamic Network Topology Information from MPI. , 2012, , .		3
89	GreenLA: Green Linear Algebra Software for GPU-accelerated Heterogeneous Computing. , 2016, , .		3
90	N-Level Diskless Checkpointing. , 2009, , .		2

#	ARTICLE	IF	CITATIONS
91	Fault tolerant linear algebra: Recovering from fail-stop failures without checkpointing. , 2010, , .		2
92	Algorithm-based recovery for HPL. , 2011, , .		2
93	Energy Efficient Parallel Matrix-Matrix Multiplication for DVFS-enabled Clusters. , 2012, , .		2
94	Optimising MPI tree-based communication for NUMA architectures. International Journal of Autonomous and Adaptive Communications Systems, 2015, 8, 407.	0.2	2
95	Cholesky Factorization on Heterogeneous CPU and GPU Systems. , 2015, , .		2
96	Silent Data Corruption Resilient Two-sided Matrix Factorizations. ACM SIGPLAN Notices, 2017, 52, 415-427.	0.2	2
97	The LAPACK for clusters project: an example of self adapting numerical software. , 2004, , .		1
98	SRC. , 2011, , .		1
99	TX: Algorithmic Energy Saving for Distributed Dense Matrix Factorizations. , 2014, , .		1
100	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
101	Non-intrusively Avoiding Scaling Problems in and out of MPI Collectives. , 2018, , .		1
102	Highly scalable checkpointing for exascale computing. , 2010, , .		0
103	Algorithm-based recovery for HPL. ACM SIGPLAN Notices, 2011, 46, 303-304.	0.2	0
104	Reduced Data Communication for Parallel CMA-ES for REACTS. , 2012, , .		0
105	Energy-Efficient Scheduling for Multicore Systems with Bounded Resources. , 2013, , .		0
106	TOUGH2-PETSc: A Parallel Solver for TOUGH2. , 2014, , .		0
107	Simulated Annealing to Generate Numerically Stable Real Number Error Correction Codes. , 2015, , .		0
108	suCAQR: A Simplified Communication-Avoiding QR Factorization Solver Using the TBLAS Framework. , 2016, , .		0

#	ARTICLE	IF	CITATIONS
109	Disaster Survival Guide in Petascale Computing. Chapman & Hall/CRC Computational Science, 2007, , 263-288.	0.5	0
110	Scalable Fault Tolerance for Large-Scale Parallel and Distributed Computing. , 2010, , 760-783.		0
111	Adaptive Checkpointing (Invited Paper). Journal of Communications, 2010, 5, .	1.3	0
112	Locality-aware Thread Block Design in Single and Multi-GPU Graph Processing. , 2021, , .		0