Alex Pothen

List of Publications by Year
in descending order

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78 papers	3,574 citations	257450 24 h-index	138484 58 g-index
84 all docs	84 docs citations	84 times ranked	2505 citing authors

#	Article	IF	Citations
1	EXAGRAPH: Graph and combinatorial methods for enabling exascale applications. International Journal of High Performance Computing Applications, 2021, 35, 553-571.	3.7	9
2	AMPS: Realâ€time mesh cutting with augmented matrices for surgical simulations. Numerical Linear Algebra With Applications, 2020, 27, e2323.	1.6	0
3	Approximation algorithms in combinatorial scientific computing. Acta Numerica, 2019, 28, 541-633.	10.7	11
4	A 2/3-Approximation Algorithm for Vertex Weighted Matching in Bipartite Graphs. SIAM Journal of Scientific Computing, 2019, 41, A566-A591.	2.8	6
5	Mapping Arbitrarily Sparse Two-Body Interactions on One-Dimensional Quantum Circuits. , 2019, , .		0
6	A 2/3-approximation algorithm for vertex-weighted matching. Discrete Applied Mathematics, 2019, 308, 46-46.	0.9	5
7	Using automatic differentiation for compressive sensing in uncertainty quantification. Optimization Methods and Software, 2018, 33, 799-812.	2.4	1
8	Adaptive Anonymization of Data using b-Edge Cover. , 2018, , .		3
9	Parallel Algorithms Through Approximation: B-Edge Cover. , 2018, , .		14
10	Computing Maximum Cardinality Matchings in Parallel on Bipartite Graphs via Tree-Grafting. IEEE Transactions on Parallel and Distributed Systems, 2017, 28, 44-59.	5.6	12
11	Fast Parallel Stochastic Subspace Algorithms for Large-Scale Ambient Oscillation Monitoring. IEEE Transactions on Smart Grid, 2017, 8, 1494-1503.	9.0	19
12	AMPS: An Augmented Matrix Formulation for Principal Submatrix Updates with Application to Power Grids. SIAM Journal of Scientific Computing, 2017, 39, S809-S827.	2.8	3
13	Introduction to HiCOMB Workshop. , 2017, , .		0
14	Immunophenotype Discovery, Hierarchical Organization, and Template-Based Classification of Flow Cytometry Samples. Frontiers in Oncology, 2016, 6, 188.	2.8	12
15	flowVS: channel-specific variance stabilization in flow cytometry. BMC Bioinformatics, 2016, 17, 291.	2.6	19
16	Designing Scalable b-MATCHING Algorithms on Distributed Memory Multiprocessors by Approximation. , 2016, , .		3
17	Interactively Cutting and Constraining Vertices in Meshes Using Augmented Matrices. ACM Transactions on Graphics, 2016, 35, 1-17.	7.2	15
18	Efficient Approximation Algorithms for Weighted b-Matching. SIAM Journal of Scientific Computing, 2016, 38, S593-S619.	2.8	24

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19	Capitalizing on live variables: new algorithms for efficient Hessian computation via automatic differentiation. Mathematical Programming Computation, 2016, 8, 393-433.	4.8	3
20	Fast SVD Computations for Synchrophasor Algorithms. IEEE Transactions on Power Systems, 2016, 31, 1651-1652.	6.5	26
21	PCO Keynote. , 2015, , .		0
22	A Parallel Tree Grafting Algorithm for Maximum Cardinality Matching in Bipartite Graphs. , 2015, , .		8
23	Codesign Lessons Learned from Implementing Graph Matching on Multithreaded Architectures. Computer, 2015, 48, 46-55.	1.1	7
24	Classifying Immunophenotypes With Templates From Flow Cytometry. , 2013, , .		3
25	ColPack. ACM Transactions on Mathematical Software, 2013, 40, 1-31.	2.9	51
26	Multithreaded Algorithms for Matching in Graphs with Application to Data Analysis in Flow Cytometry. , 2012, , .		6
27	A multithreaded algorithm for network alignment via approximate matching. , 2012, , .		16
28	Approximate weighted matching on emerging manycore and multithreaded architectures. International Journal of High Performance Computing Applications, 2012, 26, 413-430.	3.7	25
29	Multithreaded Algorithms for Maxmum Matching in Bipartite Graphs. , 2012, , .		10
30	Matching phosphorylation response patterns of antigen-receptor-stimulated T cells via flow cytometry. BMC Bioinformatics, 2012, 13, S10.	2.6	14
31	Graph coloring algorithms for multi-core and massively multithreaded architectures. Parallel Computing, 2012, 38, 576-594.	2.1	60
32	Distributed-Memory Parallel Algorithms for Matching and Coloring. , 2011, , .		14
33	Computing maximum matching in parallel on bipartite graphs. , 2011, , .		2
34	New Multithreaded Ordering and Coloring Algorithms for Multicore Architectures. Lecture Notes in Computer Science, 2011, , 250-262.	1.3	10
35	Discovering overlapping modules and bridge proteins in proteomic networks. , 2010, , .		5
36	Identifying Rare Cell Populations in Comparative Flow Cytometry. Lecture Notes in Computer Science, 2010, , 162-175.	1.3	4

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37	Efficient Computation of Sparse Hessians Using Coloring and Automatic Differentiation. INFORMS Journal on Computing, 2009, 21, 209-223.	1.7	49
38	Evaluation of Hierarchical Mesh Reorderings. Lecture Notes in Computer Science, 2009, , 540-549.	1.3	1
39	Physical and in silico approaches identify DNA-PK in a Tax DNA-damage response interactome. Retrovirology, 2008, 5, 92.	2.0	18
40	Exploiting Sparsity in Jacobian Computation via Coloring and Automatic Differentiation: A Case Study in a Simulated Moving Bed Process. Lecture Notes in Computational Science and Engineering, 2008, , 327-338.	0.3	7
41	Enabling high performance computational science through combinatorial algorithms. Journal of Physics: Conference Series, 2007, 78, 012058.	0.4	0
42	New Acyclic and Star Coloring Algorithms with Application to Computing Hessians. SIAM Journal of Scientific Computing, 2007, 29, 1042-1072.	2.8	46
43	Combinatorial algorithms enabling computational science: tales from the front. Journal of Physics: Conference Series, 2006, 46, 453-457.	0.4	0
44	Oblio: Design and Performance. Lecture Notes in Computer Science, 2006, , 758-767.	1.3	4
45	Combinatorial Scientific Computing: The Enabling Power of Discrete Algorithms in Computational Science. , 2006, , 260-280.		10
46	Genome Prediction of Putative Genome-Linked Viral Protein (VPg) of Astroviruses. Virus Genes, 2005, 31, 21-30.	1.6	40
47	What Color Is Your Jacobian? Graph Coloring for Computing Derivatives. SIAM Review, 2005, 47, 629-705.	9.5	212
48	Computational protein biomarker prediction: a case study for prostate cancer. BMC Bioinformatics, 2004, 5, 26.	2.6	79
49	Elimination Structures in Scientific Computing. Chapman & Hall/CRC Computer and Information Science Series, 2004, , 59-1-59-29.	0.4	4
50	Protocols for disease classification from mass spectrometry data. Proteomics, 2003, 3, 1692-1698.	2.2	120
51	Parallel Distance-k Coloring Algorithms for Numerical Optimization. Lecture Notes in Computer Science, 2002, , 912-921.	1.3	16
52	A Scalable Parallel Algorithm for Incomplete Factor Preconditioning. SIAM Journal of Scientific Computing, 2001, 22, 2194-2215.	2.8	110
53	The design of I/O-efficient sparse direct solvers. , 2001, , .		0
54	The Design of Sparse Direct Solvers using Object-Oriented Techniques. Lecture Notes in Computational Science and Engineering, 2000, , 89-131.	0.3	11

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55	Efficient parallel computation of ILU(k) preconditioners. , 1999, , .		10
56	Object-Oriented Design for Sparse Direct Solvers. Lecture Notes in Computer Science, 1998, , 207-214.	1.3	6
57	An Object-Oriented Collection of Minimum Degree Algorithms. Lecture Notes in Computer Science, 1998, , 95-106.	1.3	5
58	Graph Partitioning Algorithms with Applications to Scientific Computing. ICASE/LaRC Interdisciplinary Series in Science and Engineering, 1997, , 323-368.	0.1	82
59	An Analysis of Spectral Envelope Reduction via Quadratic Assignment Problems. SIAM Journal on Matrix Analysis and Applications, 1997, 18, 706-732.	1.4	34
60	Two improved algorithms for envelope and wavefront reduction. BIT Numerical Mathematics, 1997, 37, 559-590.	2.0	57
61	Preface and conference report. Linear Algebra and Its Applications, 1997, 254, 1-5.	0.9	0
62	A spectral algorithm for envelope reduction of sparse matrices. Numerical Linear Algebra With Applications, 1995, 2, 317-334.	1.6	106
63	A clique tree algorithm for partitioning a chordal graph into transitive subgraphs. Linear Algebra and Its Applications, 1995, 223-224, 553-588.	0.9	5
64	The Sparse Basis Problem and Multilinear Algebra. SIAM Journal on Matrix Analysis and Applications, 1995, 16, 1-20.	1.4	20
65	A microeconomic scheduler for parallel computers. Lecture Notes in Computer Science, 1995, , 200-218.	1.3	31
66	Stability of the Partitioned Inverse Method for Parallel Solution of Sparse Triangular Systems. SIAM Journal of Scientific Computing, 1994, 15, 139-148.	2.8	11
67	Predicting the structure of sparse orthogonal factors. Linear Algebra and Its Applications, 1993, 194, 183-203.	0.9	12
68	Partitioning a chordal graph into transitive subgraphs for parallel sparse triangular solution. Linear Algebra and Its Applications, 1993, 192, 329-353.	0.9	9
69	A Mapping Algorithm for Parallel Sparse Cholesky Factorization. SIAM Journal of Scientific Computing, 1993, 14, 1253-1257.	2.8	51
70	Highly Parallel Sparse Triangular Solution. The IMA Volumes in Mathematics and Its Applications, 1993, , 141-157.	0.5	14
71	A Fast Reordering Algorithm for Parallel Sparse Triangular Solution. SIAM Journal on Scientific and Statistical Computing, 1992, 13, 645-653.	1.5	21
72	Computing the block triangular form of a sparse matrix. ACM Transactions on Mathematical Software, 1990, 16, 303-324.	2.9	278

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73	Partitioning Sparse Matrices with Eigenvectors of Graphs. SIAM Journal on Matrix Analysis and Applications, 1990, 11, 430-452.	1.4	1,328
74	Sparse null basis computations in structural optimization. Numerische Mathematik, 1989, 55, 501-519.	1.9	28
75	Distributed Orthogonal Factorization: Givens and Householder Algorithms. SIAM Journal on Scientific and Statistical Computing, 1989, 10, 1113-1134.	1.5	41
76	A Fast Algorithm for Reordering Sparse Matrices for Parallel Factorization. SIAM Journal on Scientific and Statistical Computing, 1989, 10, 1146-1173.	1.5	68
77	The Null Space Problem II. Algorithms. SIAM Journal on Algebraic and Discrete Methods, 1987, 8, 544-563.	0.8	99
78	The Null Space Problem I. Complexity. SIAM Journal on Algebraic and Discrete Methods, 1986, 7, 527-537.	0.8	101