

Umit V Catalyurek

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/5088779/publications.pdf>

Version: 2024-02-01

179
papers

4,834
citations

136740

32
h-index

138251

58
g-index

189
all docs

189
docs citations

189
times ranked

4399
citing authors

#	ARTICLE	IF	CITATIONS
1	Hypergraph-partitioning-based decomposition for parallel sparse-matrix vector multiplication. IEEE Transactions on Parallel and Distributed Systems, 1999, 10, 673-693.	4.0	375
2	A comparative analysis of biclustering algorithms for gene expression data. Briefings in Bioinformatics, 2013, 14, 279-292.	3.2	196
3	Computer-aided prognosis of neuroblastoma on whole-slide images: Classification of stromal development. Pattern Recognition, 2009, 42, 1093-1103.	5.1	188
4	Benchmarking short sequence mapping tools. BMC Bioinformatics, 2013, 14, 184.	1.2	170
5	Histopathological Image Analysis Using Model-Based Intermediate Representations and Color Texture: Follicular Lymphoma Grading. Journal of Signal Processing Systems, 2009, 55, 169-183.	1.4	163
6	Distributed processing of very large datasets with DataCutter. Parallel Computing, 2001, 27, 1457-1478.	1.3	161
7	Tracing Origins of the Salmonella Bareilly Strain Causing a Food-borne Outbreak in the United States. Journal of Infectious Diseases, 2016, 213, 502-508.	1.9	145
8	Metagenomic Insights into the Carbohydrate-Active Enzymes Carried by the Microorganisms Adhering to Solid Digesta in the Rumen of Cows. PLoS ONE, 2013, 8, e78507.	1.1	123
9	Streaming algorithms for k-core decomposition. Proceedings of the VLDB Endowment, 2013, 6, 433-444.	2.1	107
10	Collective Modes in Light Nuclei from First Principles. Physical Review Letters, 2013, 111, 252501.	2.9	103
11	Permuting Sparse Rectangular Matrices into Block-Diagonal Form. SIAM Journal of Scientific Computing, 2004, 25, 1860-1879.	1.3	96
12	Hypergraph-based Dynamic Load Balancing for Adaptive Scientific Computations. , 2007, , .		85
13	On Two-Dimensional Sparse Matrix Partitioning: Models, Methods, and a Recipe. SIAM Journal of Scientific Computing, 2010, 32, 656-683.	1.3	85
14	Dynamic generation of accident progression event trees. Nuclear Engineering and Design, 2008, 238, 3457-3467.	0.8	83
15	The Zoltan and Isorropia Parallel Toolkits for Combinatorial Scientific Computing: Partitioning, Ordering and Coloring. Scientific Programming, 2012, 20, 129-150.	0.5	79
16	A repartitioning hypergraph model for dynamic load balancing. Journal of Parallel and Distributed Computing, 2009, 69, 711-724.	2.7	74
17	The virtual microscope. IEEE Transactions on Information Technology in Biomedicine, 2003, 7, 230-248.	3.6	72
18	Biomedical image analysis on a cooperative cluster of GPUs and multicores. , 2008, , .		64

#	ARTICLE	IF	CITATIONS
19	Incremental k-core decomposition: algorithms and evaluation. VLDB Journal, 2016, 25, 425-447.	2.7	62
20	Graph coloring algorithms for multi-core and massively multithreaded architectures. Parallel Computing, 2012, 38, 576-594.	1.3	60
21	Coordinating the use of GPU and CPU for improving performance of compute intensive applications. , 2009, , .		59
22	Performance Evaluation of Sparse Matrix Multiplication Kernels on Intel Xeon Phi. Lecture Notes in Computer Science, 2014, , 559-570.	1.0	54
23	Compaction of Schedules and a Two-Stage Approach for Duplication-Based DAG Scheduling. IEEE Transactions on Parallel and Distributed Systems, 2009, 20, 857-871.	4.0	53
24	Development of a code-agnostic computational infrastructure for the dynamic generation of accident progression event trees. Reliability Engineering and System Safety, 2010, 95, 278-294.	5.1	53
25	Integrated data placement and task assignment for scientific workflows in clouds. , 2011, , .		51
26	An Early Evaluation of the Scalability of Graph Algorithms on the Intel MIC Architecture. , 2012, , .		49
27	Betweenness centrality on GPUs and heterogeneous architectures. , 2013, , .		49
28	Processing large-scale multi-dimensional data in parallel and distributed environments. Parallel Computing, 2002, 28, 827-859.	1.3	47
29	mrSNP: Software to detect SNP effects on microRNA binding. BMC Bioinformatics, 2014, 15, 73.	1.2	46
30	A framework for scalable greedy coloring on distributed-memory parallel computers. Journal of Parallel and Distributed Computing, 2008, 68, 515-535.	2.7	45
31	Exploiting Geometric Partitioning in Task Mapping for Parallel Computers. , 2014, , .		45
32	Visualization of large data sets with the Active Data Repository. IEEE Computer Graphics and Applications, 2001, 21, 24-33.	1.0	43
33	Incremental algorithms for closeness centrality. , 2013, , .		41
34	DATABASE SUPPORT FOR DATA-DRIVEN SCIENTIFIC APPLICATIONS IN THE GRID. Parallel Processing Letters, 2003, 13, 245-271.	0.4	40
35	Computer-aided Prognosis of Neuroblastoma: Detection of mitosis and karyorrhexis cells in digitized histological images. , 2009, 2009, 1433-6.		40
36	A hypergraph-partitioning approach for coarse-grain decomposition. , 2001, , .		39

#	ARTICLE	IF	CITATIONS
37	Hypergraph partitioning for multiple communication cost metrics: Model and methods. Journal of Parallel and Distributed Computing, 2015, 77, 69-83.	2.7	39
38	Investigating the use of GPU-accelerated nodes for SAR image formation. , 2009, , .		36
39	An Integrated Approach to Locality-Conscious Processor Allocation and Scheduling of Mixed-Parallel Applications. IEEE Transactions on Parallel and Distributed Systems, 2009, 20, 1158-1172.	4.0	36
40	NUSAP1 influences the DNA damage response by controlling BRCA1 protein levels. Cancer Biology and Therapy, 2014, 15, 533-543.	1.5	35
41	Texture classification using nonlinear color quantization: Application to histopathological image analysis. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	34
42	Comparative analysis of biclustering algorithms. , 2010, , .		34
43	Regularizing graph centrality computations. Journal of Parallel and Distributed Computing, 2015, 76, 106-119.	2.7	34
44	KELVIN: A Software Package for Rigorous Measurement of Statistical Evidence in Human Genetics. Human Heredity, 2011, 72, 276-288.	0.4	32
45	A survey of pipelined workflow scheduling. ACM Computing Surveys, 2013, 45, 1-36.	16.1	32
46	StrainHub: a phylogenetic tool to construct pathogen transmission networks. Bioinformatics, 2020, 36, 945-947.	1.8	30
47	A Biclustering Method to Discover Co-regulated Genes Using Diverse Gene Expression Datasets. Lecture Notes in Computer Science, 2009, , 151-163.	1.0	27
48	A Grid-Based Image Archival and Analysis System. Journal of the American Medical Informatics Association: JAMIA, 2005, 12, 286-295.	2.2	26
49	Run-time optimizations for replicated dataflows on heterogeneous environments. , 2010, , .		26
50	Multi-Jagged: A Scalable Parallel Spatial Partitioning Algorithm. IEEE Transactions on Parallel and Distributed Systems, 2016, 27, 803-817.	4.0	26
51	Application of Grid-enabled technologies for solving optimization problems in data-driven reservoir studies. Future Generation Computer Systems, 2005, 21, 19-26.	4.9	25
52	Using overlays for efficient data transfer over shared wide-area networks. , 2008, , .		25
53	TheAdvisor. , 2013, , .		25
54	Shattering and Compressing Networks for Betweenness Centrality. , 2013, , .		25

#	ARTICLE	IF	CITATIONS
55	A resource provisioning framework for bioinformatics applications in multi-cloud environments. <i>Future Generation Computer Systems</i> , 2018, 78, 379-391.	4.9	23
56	A Scalable Parallel Graph Coloring Algorithm for Distributed Memory Computers. <i>Lecture Notes in Computer Science</i> , 2005, , 241-251.	1.0	23
57	Diversifying Citation Recommendations. <i>ACM Transactions on Intelligent Systems and Technology</i> , 2015, 5, 1-21.	2.9	22
58	Computerized microscopic image analysis of follicular lymphoma. <i>Proceedings of SPIE</i> , 2008, , .	0.8	21
59	Distributed-Memory Parallel Algorithms for Distance-2 Coloring and Related Problems in Derivative Computation. <i>SIAM Journal of Scientific Computing</i> , 2010, 32, 2418-2446.	1.3	20
60	The Supramap project: linking pathogen genomes with geography to fight emergent infectious diseases. <i>Cladistics</i> , 2011, 27, 61-66.	1.5	20
61	Large-scale ab initio configuration interaction calculations for light nuclei. <i>Journal of Physics: Conference Series</i> , 2012, 403, 012019.	0.3	20
62	Load-balancing spatially located computations using rectangular partitions. <i>Journal of Parallel and Distributed Computing</i> , 2012, 72, 1201-1214.	2.7	20
63	Graph Manipulations for Fast Centrality Computation. <i>ACM Transactions on Knowledge Discovery From Data</i> , 2017, 11, 1-25.	2.5	20
64	Stroma classification for neuroblastoma on graphics processors. <i>International Journal of Data Mining and Bioinformatics</i> , 2009, 3, 280.	0.1	19
65	Fast and High Quality Topology-Aware Task Mapping. , 2015, , .		19
66	Large-Scale Biomedical Image Analysis in Grid Environments. <i>IEEE Transactions on Information Technology in Biomedicine</i> , 2008, 12, 154-161.	3.6	18
67	Multilevel Algorithms for Acyclic Partitioning of Directed Acyclic Graphs. <i>SIAM Journal of Scientific Computing</i> , 2019, 41, A2117-A2145.	1.3	18
68	Multithreaded Clustering for Multi-level Hypergraph Partitioning. , 2012, , .		16
69	Fast Recommendation on Bibliographic Networks. , 2012, , .		16
70	Optimizing dataflow applications on heterogeneous environments. <i>Cluster Computing</i> , 2012, 15, 125-144.	3.5	16
71	Acyclic Partitioning of Large Directed Acyclic Graphs. , 2017, , .		16
72	e-Science, caGrid, and Translational Biomedical Research. <i>Computer</i> , 2008, 41, 58-66.	1.2	15

#	ARTICLE	IF	CITATIONS
73	Parallel short sequence mapping for high throughput genome sequencing. , 2009, , .		15
74	Exploring the future of out-of-core computing with compute-local non-volatile memory. , 2013, , .		15
75	A simulation and data analysis system for large-scale, data-driven oil reservoir simulation studies. Concurrency Computation Practice and Experience, 2005, 17, 1441-1467.	1.4	14
76	Models, methods and middleware for grid-enabled multiphysics oil reservoir management. Engineering With Computers, 2006, 22, 349-370.	3.5	14
77	Distributed-Memory Parallel Algorithms for Matching and Coloring. , 2011, , .		14
78	Hypergraph Partitioning-Based Fill-Reducing Ordering for Symmetric Matrices. SIAM Journal of Scientific Computing, 2011, 33, 1996-2023.	1.3	14
79	Improving performance of adaptive component-based dataflow middleware. Parallel Computing, 2012, 38, 289-309.	1.3	14
80	Optimizing latency and throughput of application workflows on clusters. Parallel Computing, 2011, 37, 694-712.	1.3	13
81	Pathological Image Analysis Using the GPU: Stroma Classification for Neuroblastoma. , 2007, , .		12
82	A dynamic scheduling approach for coordinated wide-area data transfers using GridFTP. Parallel and Distributed Processing Symposium (IPDPS), Proceedings of the International Conference on, 2008, , .	1.0	12
83	Partitioning Hypergraphs in Scientific Computing Applications through Vertex Separators on Graphs. SIAM Journal of Scientific Computing, 2012, 34, A970-A992.	1.3	12
84	Incremental closeness centrality in distributed memory. Parallel Computing, 2015, 47, 3-18.	1.3	12
85	Driving Scientific Applications by Data in Distributed Environments. Lecture Notes in Computer Science, 2003, , 355-364.	1.0	12
86	Hypergraph Partitioning for Automatic Memory Hierarchy Management. , 2006, , .		11
87	An Out-of-Core Dataflow Middleware to Reduce the Cost of Large Scale Iterative Solvers. , 2012, , .		11
88	Towards a personalized, scalable, and exploratory academic recommendation service. , 2013, , .		11
89	No Core CI calculations for light nuclei with chiral 2- and 3-body forces. Journal of Physics: Conference Series, 2013, 454, 012063.	0.3	11
90	Scalable Triangle Counting on Distributed-Memory Systems. , 2019, , .		11

#	ARTICLE	IF	CITATIONS
91	Computer-aided prognosis of neuroblastoma: classification of stromal development on whole-slide images. Proceedings of SPIE, 2008, , .	0.8	10
92	Scalable Hybrid Implementation of Graph Coloring Using MPI and OpenMP. , 2012, , .		10
93	Biomedical image analysis on a cooperative cluster of GPUs and multicores. , 2014, , .		10
94	Towards Dynamic Data-Driven Optimization of Oil Well Placement. Lecture Notes in Computer Science, 2005, , 656-663.	1.0	10
95	Toward Optimizing Latency Under Throughput Constraints for Application Workflows on Clusters. Lecture Notes in Computer Science, 2007, , 173-183.	1.0	10
96	XML database support for distributed execution of data-intensive scientific workflows. SIGMOD Record, 2005, 34, 50-55.	0.7	9
97	Advances in parallel partitioning, load balancing and matrix ordering for scientific computing. Journal of Physics: Conference Series, 2009, 180, 012008.	0.3	9
98	An Image Analysis Approach for Detecting Malignant Cells in Digitized H&E-stained Histology Images of Follicular Lymphoma. , 2010, , .		9
99	Merging network patterns: a general framework to summarize biomedical network data. Network Modeling Analysis in Health Informatics and Bioinformatics, 2012, 1, 103-116.	1.2	9
100	Wide-area overlay networking to manage science DMZ accelerated flows. , 2014, , .		9
101	GPU Accelerated Maximum Cardinality Matching Algorithms for Bipartite Graphs. Lecture Notes in Computer Science, 2013, , 850-861.	1.0	9
102	Grid-based management of biomedical data using an XML-based distributed data management system. , 2005, , .		8
103	An XML-based System for Synthesis of Data from Disparate Databases. Journal of the American Medical Informatics Association: JAMIA, 2006, 13, 289-301.	2.2	8
104	Locality Conscious Processor Allocation and Scheduling for Mixed Parallel Applications. , 2006, , .		8
105	A Duplication Based Algorithm for Optimizing Latency Under Throughput Constraints for Streaming Workflows. , 2008, , .		8
106	High-performance signal processing on emerging many-core architectures using cuda. , 2009, , .		8
107	A component-based framework for the Cell Broadband Engine. , 2009, , .		8
108	A Matrix Partitioning Interface to PaToH in MATLAB. Parallel Computing, 2010, 36, 254-272.	1.3	8

#	ARTICLE	IF	CITATIONS
109	An Out-of-Core Eigensolver on SSD-equipped Clusters. , 2012, , .		8
110	Phylogenetic visualization of the spread of H7 influenza A viruses. Cladistics, 2015, 31, 679-691.	1.5	8
111	SONIC: streaming overlapping community detection. Data Mining and Knowledge Discovery, 2016, 30, 819-847.	2.4	8
112	Scheduling File Transfers for Data-Intensive Jobs on Heterogeneous Clusters. Lecture Notes in Computer Science, 2007, , 214-223.	1.0	8
113	Large Image Correction and Warping in a Cluster Environment. , 2006, , .		7
114	A Knowledge-Anchored Integrative Image Search and Retrieval System. Journal of Digital Imaging, 2009, 22, 166-182.	1.6	7
115	Automatic dataflow application tuning for heterogeneous systems. , 2010, , .		7
116	STREAMER: A distributed framework for incremental closeness centrality computation. , 2013, , .		7
117	Hardware/Software Vectorization for Closeness Centrality on Multi-/Many-Core Architectures. , 2014, , .		7
118	Optimizing Reduction Computations In a Distributed Environment. , 2003, , .		6
119	Data management and query--Hypergraph partitioning for automatic memory hierarchy management. , 2006, , .		6
120	An Efficient and Reliable Scientific Workflow System. , 2007, , .		6
121	Partitioning Spatially Located Computations Using Rectangles. , 2011, , .		6
122	Improving graph coloring on distributed-memory parallel computers. , 2011, , .		6
123	Optimizing the stretch of independent tasks on a cluster: From sequential tasks to moldable tasks. Journal of Parallel and Distributed Computing, 2012, 72, 489-503.	2.7	6
124	Linear Algebra-Based Triangle Counting via Fine-Grained Tasking on Heterogeneous Environments : (Update on Static Graph Challenge). , 2019, , .		6
125	A Unifying Framework to Identify Dense Subgraphs on Streams: Graph Nuclei to Hypergraph Cores. , 2021, , .		6
126	Distributed Out-of-Core Preprocessing of Very Large Microscopy Images for Efficient Querying. , 2005, , .		5

#	ARTICLE	IF	CITATIONS
127	Imaging and visual analysis—Large image correction and warping in a cluster environment. , 2006, , .		5
128	Multi-hop path splitting and multi-pathing optimizations for data transfers over shared wide-area networks using gridFTP. , 2008, , .		5
129	Exploring parallelism in short sequence mapping using Burrows-Wheeler Transform. , 2010, , .		5
130	Benchmarking Short Sequence Mapping Tools. , 2011, , .		5
131	Fast recommendation on bibliographic networks with sparse-matrix ordering and partitioning. Social Network Analysis and Mining, 2013, 3, 1097-1111.	1.9	5
132	Hypergraph Sparsification and Its Application to Partitioning. , 2013, , .		5
133	Allele-specific imbalance mapping at human orthologs of mouse susceptibility to colon cancer (<i>Sc</i>) loci. International Journal of Cancer, 2015, 137, 2323-2331.	2.3	5
134	A Moldable Online Scheduling Algorithm and Its Application to Parallel Short Sequence Mapping. Lecture Notes in Computer Science, 2010, , 93-109.	1.0	5
135	Optimizing multiple queries on scientific datasets with partial replicas. , 2007, , .		4
136	A Push-Relabel-Based Maximum Cardinality Bipartite Matching Algorithm on GPUs. , 2013, , .		4
137	An extensible global address space framework with decoupled task and data abstractions. , 2006, , .		3
138	Performance vs. accuracy trade-offs for large-scale image analysis applications. , 2007, , .		3
139	BlueGene/L applications: Parallelism On a Massive Scale. International Journal of High Performance Computing Applications, 2008, 22, 33-51.	2.4	3
140	Parallel materialization of large ABoxes. , 2009, , 1257-1261.		3
141	On the Scalability of Hypergraph Models for Sparse Matrix Partitioning. , 2010, , .		3
142	Geometric Mapping of Tasks to Processors on Parallel Computers with Mesh or Torus Networks. IEEE Transactions on Parallel and Distributed Systems, 2019, 30, 2018-2032.	4.0	3
143	A Data Locality Aware Online Scheduling Approach for I/O-Intensive Jobs with File Sharing. Lecture Notes in Computer Science, 2007, , 141-160.	1.0	3
144	Analysis of Partitioning Models and Metrics in Parallel Sparse Matrix-Vector Multiplication. Lecture Notes in Computer Science, 2014, , 174-184.	1.0	3

#	ARTICLE	IF	CITATIONS
145	An Out-of-Core Task-based Middleware for Data-Intensive Scientific Computing. , 2015, , 647-667.		3
146	Syndromic Surveillance of Infectious Diseases meets Molecular Epidemiology in a Workflow and Phylogeographic Application. Studies in Health Technology and Informatics, 2015, 216, 766-70.	0.2	3
147	MSSG: A Framework for Massive-Scale Semantic Graphs. , 2006, , .		2
148	Translational research design templates, Grid computing, and HPC. Parallel and Distributed Processing Symposium (IPDPS), Proceedings of the International Conference on, 2008, 2008, 1-15.	1.0	2
149	Microarray vs. RNA-Seq. , 2012, , .		2
150	On Shared-Memory Parallelization of a Sparse Matrix Scaling Algorithm. , 2012, , .		2
151	A Block-Based Triangle Counting Algorithm on Heterogeneous Environments. IEEE Transactions on Parallel and Distributed Systems, 2022, 33, 444-458.	4.0	2
152	Development of Computer Based System To Aid Pathologists in Histological Grading of Follicular Lymphomas.. Blood, 2007, 110, 3318-3318.	0.6	2
153	Column-Segmented Sparse Matrix-Matrix Multiplication on Multicore CPUs. , 2021, , .		2
154	Intelligent Optimization of Parallel and Distributed Applications. , 2007, , .		1
155	Flexible patient information search and retrieval framework: pilot implementation. , 2007, , .		1
156	Identification of a Breast Cancer Associated Regulatory Network. , 2009, , .		1
157	Acceleration of Two Point Correlation Function Calculation for Pathology Image Segmentation. , 2011, 2011, 174-181.		1
158	Masher. , 2013, , .		1
159	Exploring the Future of Out-of-Core Computing with Compute-Local Non-Volatile Memory. Scientific Programming, 2014, 22, 125-139.	0.5	1
160	Massively multithreaded maxflow for image segmentation on the Cray XMTâ€². Concurrency Computation Practice and Experience, 2014, 26, 2836-2855.	1.4	1
161	Mitigating bias in planning two-colour microarray experiments. International Journal of Data Mining and Bioinformatics, 2015, 13, 31.	0.1	1
162	Querying Co-regulated Genes on Diverse Gene Expression Datasets Via Biclustering. Methods in Molecular Biology, 2015, 1375, 55-74.	0.4	1

#	ARTICLE	IF	CITATIONS
163	SiNA: A Scalable Iterative Network Aligner. , 2018, , .		1
164	DeepSparse: A Task-Parallel Framework for SparseSolvers on Deep Memory Architectures. , 2019, , .		1
165	PIGO: A Parallel Graph Input/Output Library. , 2021, , .		1
166	Dynamic Data-Driven Systems Approach for Simulation Based Optimizations. Lecture Notes in Computer Science, 2007, , 1213-1221.	1.0	1
167	On Reducing I/O Overheads in Large-Scale Invariant Subspace Projections. Lecture Notes in Computer Science, 2012, , 305-314.	1.0	1
168	Servicing Seismic and Oil Reservoir Simulation Data Through Grid Data Services. Lecture Notes in Computer Science, 2006, , 129-142.	1.0	1
169	Parallel Partitioning, Coloring and Ordering in Scientific Computing. Chapman & Hall/CRC Computational Science, 2012, , 351-371.	0.5	1
170	Tools for efficient subsetting and pipelined processing of large scale, distributed biomedical image data. Advances in Parallel Computing, 2005, , 403-422.	0.3	0
171	On Creating Efficient Object-relational Views of Scientific Datasets. , 2006, , .		0
172	A global address space framework for locality aware scheduling of block-sparse computations. , 2007, , .		0
173	Enabling high performance computational science through combinatorial algorithms. Journal of Physics: Conference Series, 2007, 78, 012058.	0.3	0
174	Combinatorial algorithms for computational science and engineering. Journal of Physics: Conference Series, 2008, 125, 012071.	0.3	0
175	Message from the Workshops Chair. , 2010, , .		0
176	Dynamic Decision and Data-Driven Strategies for the Optimal Management of Subsurface Geo-Systems. Journal of Algorithms and Computational Technology, 2011, 5, 645-665.	0.4	0
177	Color and texture analysis using emerging parallel architectures. International Journal of High Performance Computing Applications, 2011, 25, 404-427.	2.4	0
178	PRASE. , 2013, , .		0
179	Data Flow Frameworks for Emerging Heterogeneous Architectures and Their Application to Biomedicine. Chapman & Hall/CRC Computational Science, 2010, , 375-392.	0.5	0