

Curriculum Vitae: Cevdet Aykanat

Personal Data

- **Title, Name** : Prof. Dr. Cevdet Aykanat, Associate Provost
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Academic Degrees

- **Prof.** Computer Engineering – Bilkent University 2001
- **Assoc. Prof.** Computer Engineering – Bilkent University 1995
- **Asst. Prof.** Computer Engineering – Bilkent University 1989
- **Ph.D.** Electrical and Computer Engineering – Ohio State University 1988
- **M.S.** Electrical Engineering – Middle East Technical University 1982
- **B.S.** Electrical Engineering – Middle East Technical University 1980

Brief Employment History

- **05/2010 – present** Associate Provost, Bilkent University
- **06/2001 – present** Professor, Computer Engineering Department, Bilkent University
- **07/1995 – 05/2001** Associate Professor, Computer Engineering Department, Bilkent University
- **01/1989 – 06/1995** Assistant Professor, Computer Engineering Department, Bilkent University
- **09/1985 – 10/1987** Research Associate, INTEL, Supercomputer System Division, Oregon

Awards

- Science Award, METU Mustafa Parlar Foundation, 2007.
- Investigator Award, TUBITAK (The Scientific and Technological Research Council of Turkey), 1995.

Honors, Scholarly and Professional Duties and Achievements

- Associate Editor, IEEE Transactions of Parallel and Distributed Systems, 2008 – 2013.
- Appointed as a member of IFIP Working Group 10.3 (Concurrent Systems) within Technical Committee 10 (Computer Systems Technology), 2004–present.
- Appointed as a member of EU-INTAS Council of Scientists (Computer Science), 2005–2008.
- Participated in the expert panels of The Research Council of Norway for the research program eVITA-eScience, Infrastructure, Theory and Applications, June 2006.
- Co-editor of *Lecture Notes in Computer Science* 3280 (2004)
- Participated in the panels for the evaluation of academic R&D projects supported by TUBITAK-EEEAG (Electrical, Electronics & Enformatics Resarch Grant Committee), 2000–present.
- Participated in the evaluation and monitoring of many industrial R&D projects supported by TUBITAK-TIDEB (Technology Forecasting and Assesment Directorate), 2000–present.
- Organizing committee co-chair of NATO ASI on Parallel Computing on Distributed Memory Multiprocessors, July 1-12, 1991, Bilkent University, Ankara, Turkey.
- NATO grant for International Collaboration in Research, 1989 –1991.
- FULBRIGHT scholarship during Ph.D. studies in USA, 1983 –1986.
- METU scholarship during B.S. studies in METU, 1973 – 1977.
- Program committee chair and member of numerous conferences/symposiums (including SC, IPDPS, Euro-Par)

Current Positions of Some Former Graduate Students

Former PhD Students	Current Institution of Employment	Position
Dr. Ümit V. Çatalyürek	Georgia Institute of Technology School of Computational Science and Technology	Professor
Dr. Tahsin M. Kurc	Stony Brook University Dept. of Biomedical Informatics	Associate Professor
Dr. Bora Uçar	LIP, ENS-LYON	CNRS researcher
Dr. B. Barla Cambazoglu	RMIT University Computer Science and Information Tech	Senior research fellow
Dr. Engin Demir	Hacettepe University, Dept. of Computer Engineering	Assistant Professor
Dr. Ata Turk	Boston University College of Engineering	Research Associate
Dr. Ertugrul K. Tabak	Aurea Software	Software engineering manager
Dr. Eray Özkural	Celestial Intellect Cybernetics	Software engineer
Dr. Tayfun Küçükylmaz	TED University, Dept. of Computer Engineering	Assistant Professor
Dr. Veysi İşler	Middle East Technical University Dept. of Computer Engineering	Professor
Dr. Sukru Torun	Yıldırım Beyazıt University Dept. of Computer Engineering	Assistant Professor
Dr. Enver Kayaaslan	Google Switzerland	Researcher
Dr. Kadir Akbudak	KAUST Extreme Computing Research Center	Postdoctoral Researcher
Dr. Oğuz Selvitopi	Lawrence Berkeley National Lab.	Postdoctoral Researcher
Dr. Seher Acer	Sandia National Lab	Postdoctoral Researcher
Former MS Students		
Dr. Ali Daşdan	Turn, Silicon Valley	Head/VP of Engineering
Dr. Mehmet Koyuturk	Case Western Reserve University, Dept. of Comp. Sci.	Professor
Dr. Tevfik Bultan	Univ. of California, Santa Barbara, Dept. of Comp. Sci.	Professor
Dr. Ali Pinar	Sandia National Laboratories, Info & Decision Sci. Dept.	Research Associate
Dr. Kamer Kaya	Sabancı University, Dep. of Computer Engineering	Assistant Professor
Hakan Berk	Microsoft Corp. at Redmond	Software/design Eng.
Ferit Fındık	Microsoft Corp. at Redmond	Software/design Eng.

Current Research Interests

- parallel computing, parallel algorithms, combinatorial scientific computing, high performance computing
- graph-theoretic and combinatorial algorithms: the development, analysis and application of discrete algorithms for various parallel and distributed applications
- data partitioning and mapping: graph- and hypergraph-partitioning-based models for load balancing and communication overhead minimization in decomposing irregular computational domains
- iterative methods: novel partitioning models, algorithms and software utilities for petascaling sparse kernel operations such as sparse matrix vector multiplication, sparse matrix dense matrix multiplication, and sparse matrix sparse matrix multiplication.
- locality aware scheduling of sparse and irregular applications on multicore and manycore architectures
- distributed database systems: development of data allocation and partitioning algorithms and software for efficient parallel query processing in multi-disk systems
- data mining: parallel algorithm and software development for discovery of frequently-occurring patterns in very large datasets
- high performance tensor decomposition methods for distributed/shared memory parallel systems
- partitioning models and methods for scaling parallel stochastic gradient descent algorithms for recommendation systems
- parallel algorithms for deep convolutional neural networks

Grants and Scientific Leadership in Research Projects

- Parallel Stochastic Gradient Descent Algorithms for Large-Scale Recommendation Systems, August 2019 – February 2022
 - Assignment : Principle Investigator
 - Sponsor : TUBITAK Contract No: 119E035
 - Budget : 490,000 TL => USD 90,000
- High Performance Tensor Decomposition Methods for Distributed and Shared Memory Parallel Systems, May 2017 – October 2019
 - Assignment : Principle Investigator
 - Sponsor : TUBITAK Contract No: 116E043
 - Budget : 447,611 TL => USD 128,000
- High Performance Parallel Graph Analytics Kernels for Big Data Applications, September 2015 – March 2018
 - Assignment : Principle Investigator
 - Sponsor : TUBITAK Contract No: 115E212, ICT COST Action IC1406 (cHiPSet)
 - Budget : 353,128 TL => 120,000 USD
- Petascaling Sparse Iterative Solvers via Optimizing Multiple Communication Metrics, April 2015 – October 2017
 - Assignment : Principle Investigator
 - Sponsor : TUBITAK Contract No: 114E545
 - Budget : 275,628 TL => 106,000 USD
- PRACE-1IP/2IP/3IP/4IP/5IP/6IP: PRACE Implementation Phase Projects, July 2010 – March 2021
 - Assignment : Investigator (Subtask Leader in 1IP, 2IP and 3IP.)
 - Sponsor : EU-FP7 and H2020
- Partitioning, Replication and Query Processing in Social Networks, September 2012 – September 2014
 - Assignment : Principle Investigator
 - Sponsor : TUBITAK Contract No: 112E120
 - Budget : USD 110,000
- Content-based retrieval of histopathological images using relational tissue graphs, Sep. 2012 – Sep. 2014
 - Assignment : Investigator
 - Sponsor : TUBITAK Contract No: 110E232
 - Budget : USD 90,000
- Efficient Text Retrieval and Query Processing under Bounded Data Replication, Sep. 2009 – Sep. 2011
 - Assignment : Principle Investigator of
 - Sponsor : Cost Action IC0805 Open European Network for High Performance Computing
 - Budget : 80,000 Euro

- A Comprehensive Electronic Proposal Evaluation and Selection System, Aug. 2009 – Feb. 2012
 - Assignment : Investigator
 - Sponsor : TÜBİTAK, Contract No: 109M149
 - Budget : USD 140,000
- Efficient Parallel Text Retrieval and Query Processing, September 2006 – September 2008
 - Assignment : Principle Investigator
 - Sponsor : TÜBİTAK, Contract No: 106E069
 - Budget : USD 90,000
- SEE-GRID-2: South Eastern European GRid Enabled eInfrastructure Development 2, May 2006 –April 2008
 - Assignment : Principle Investigator of Bilkent University
 - Sponsor : EU-FP6, Specific Support Action, Contract No: 031775.
 - Budget : 24,000 Euro (Bilkent), 2,000,000 Euro (total)
- SEE-GRID: South Eastern European GRid Enabled eInfrastructure Development, May 2004 – April 2006
 - Assignment : Principle Investigator of Bilkent University
 - Sponsor : EU-FP6, Specific Support Action, Contract No: 002356.
 - Budget : 76,000 Euro
- Efficient Parallel Crawling of Web Content, April 2004 – March 2006
 - Assignment : Principle Investigator
 - Sponsor : TÜBİTAK, Contract No: 103E028
 - Budget : USD 50,000
- Task Scheduling Algorithms for PC Clusters, Sep. 1999 – March. 2002
 - Assignment : Principle Investigator
 - Sponsor : TÜBİTAK. Contract No: 198E015
 - Budget : USD 30,000
- Unstructured Domain Mapping for Distributed Memory Architectures, Feb. 1995 – July 1999
 - Assignment : Co-ordinator (overall)
 - Sponsor : Commission of the European Communities, Contract No: ITDC 204
 - Budget : 370,000 Euro
- Design and Implementation of a Parallel Direct Volume Rendering System, Sep.1995–Aug.1997
 - Assignment : Principle Investigator
 - Sponsor : TUBITAK, Contract No: EEEAG-160
 - Budget : USD 60,000
- Design and Implementation of a Real-Time Realistic Image Generation System for Multicomputers, Sep.1991– Aug.1994
 - Assignment : Principle Investigator
 - Sponsors : INTEL SSD 100791-2; TUBITAK EEEAG-5
 - Budget : USD 100,000 (INTEL), USD 70,000 (TUBITAK)

Publication and Citation Statistics

- Total number of articles in *ISI Journals*: **100**
- Total number of citations in *Harzing's Publish or Perish Index* **5050**
Google Scholar Citation Database
- **h-index = 38** for all of his citations.

Articles in Refereed (ISI: SCI and SSCI) Journals

1. Cartesian partitioning models for 2D and 3D parallel SpGEMM, *Gunduz V. Demirci and Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol 31, no. 12, pp. 2763-2775, 2020.
2. Reordering sparse matrices into block-diagonal column-overlapped form, *Seher Acer, Oguz Selvitopi, Cevdet Aykanat*, **Journal of Parallel and Distributed Computing**, vol 122, no. 145-158, 2018.
3. Scaling sparse matrix matrix multiplication in the accumulo database, *Gunduz V. Demirci and Cevdet Aykanat*, **Distributed and Parallel Databases**, , vol. 31, no. 1, pp. 31 - 62, 2020.
4. Reduce operations: send volume balancing while minimizing latency, *Ozan Karsavuran, Seher Acer and Cevdet Aykanat*, , **IEEE Transactions on Parallel and Distributed Systems**, vol. 31, no. 6, pp. 1461-1473, 2020.
5. Regularizing Irregularly Sparse Point-to-point Communications, *Reha Oğuz Selvitopi and Cevdet Aykanat*, Article 50 in the **SC19** Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis, Denver, Colarado, November 17–19, 2019.
6. A Hypergraph Partitioning Model for Profile Minimization, *Seher Acer, Enver Kayaaslan, Cevdet Aykanat*, **SIAM Journal on Scientific Computing**, vol. 41, no. 1, pp. A83-A108, 2019.
7. Locality-aware and load-balanced static task scheduling for MapReduce, *Oguz Selvitopi, Gunduz V. Demirci, Ata Turk, Cevdet Aykanat*, **Future Generation Computer Systems**, vol. 90, pp. 49-61, 2019.
8. Spatiotemporal Graph and Hypergraph Partitioning Models for Sparse Matrix-Vector Multiplication on Many-Core Architectures, *Nabil Abubaker, Kadir Akbudak, Cevder Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 30, no. 2, pp. 445-458, 2019.
9. Cascade-aware partitioning of large graph databases, *Gunduz V. Demirci, Hakan Ferhatosmanoglu, Cevdet Aykanat*, **The VLDB Journal**, vol. 28, pp. 329-350, 2019.
10. A novel partitioning method for accelerating the block cimmino algorithm, *F. Sukru Torun, Murat Manguoglu, Cevdet Aykanat*, **SIAM Journal on Scientific Computing**, vol. 40, no. 6, pp. C827-C850, 2018.
11. Optimizing nonzero-based sparse matrix partitioning models via reducing latency, *Seher Acer, Oguz Selvitopi, Cevdet Aykanat*, **Journal of Parallel and Distributed Computing**, vol 122, no. 145-158, 2018.
12. Improving medium-grain partitioning for scalable sparse tensor decomposition, *Seher Acer, Tugba Torun, Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 29, no. 12, pp. 2814-2825, 2018.
13. 1.5 D parallel sparse matrix-vector multiply, *Enver Kayaaslan, Cevdet Aykanat, Bora Ucar*, **SIAM Journal on Scientific Computing**, vol. 40, no. 1, pp. C25-C46, 2018.
14. Partitioning models for scaling parallel sparse matrix-matrix multiplication, *Kadir Akbudak, Oguz Selvitopi, Cevdet Aykanat*, **ACM Transactions on Parallel Computing (TOPC)**, vol. 4, no. 3, pp. 13, 2018.
15. Exploiting Locality in Sparse Matrix-Matrix Multiplication on Many-Core Architectures, *Kadir Akbudak and Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 28, no. 8, pp. 2258–2271, 2017.
16. A machine learning approach for result caching in web search engines, *Tayfun Kucukyilmaz, B. Barla Cambazoglu, Cevdet Aykanat and Ricardo Baeza-Yates*, **Information Processing & Management**, vol. 53, no. 4, pp. 834–850, 2017.
17. Parallel Minimum Norm Solution of Sparse Block Diagonal Column Overlapped Underdetermined Systems, *F. Sukru Torun, Murat Manguoglu and Cevdet Aykanat*, **ACM Transactions on Mathematical Software (TOMS)**, vol. 43, no. 4, pp. 31, 2017.
18. A Recursive Hypergraph Bipartitioning Framework for Reducing Bandwidth and Latency Costs Simultaneously, *Oguz Selvitopi, Seher Acer and Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 28, no. 2, pp. 345–358, 2017.
19. Improving performance of sparse matrix dense matrix multiplication on large-scale parallel systems, *Seher Acer, Oguz Selvitopi and Cevdet Aykanat*, **Parallel Computing**, vol. 59, pp. 71–96, 2016.

20. Reducing latency cost in 2D sparse matrix partitioning models, *R. Oguz Selvitopi and Cevdet Aykanat*, **Parallel Computing**, vol. 57, pp. 1–24, 2016.
21. Locality-Aware Parallel Sparse Matrix-Vector and Matrix-Transpose-Vector Multiplication on Many-Core Processors, *M. Ozan Karsavuran, Kadir Akbudak and Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 27, no. 6, pp. 1713–1726, 2016.
22. A Novel Method for Scaling Iterative Solvers: Avoiding Latency Overhead of Parallel Sparse-Matrix Vector Multiplies, *R. Oguz Selvitopi, M. Mustafa Ozdal, Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 26, no. 3, pp. 632–645, 2015.
23. Semi-two-dimensional partitioning for parallel sparse matrix-vector multiplication, Enver Kayaaslan, Bora Ucar and Cevdet Aykanat, **IPDPS 2015 IEEE International Parallel and Distributed Processing Symposium**, May 25–29, 2015, Hyderabad, India, pp 1125 – 1134,
24. Simultaneous Input and Output Matrix Partitioning for Outer-Product-Parallel Sparse Matrix-Matrix Multiplication, *Kadir Akbudak and Cevdet Aykanat*, **SIAM Journal on Scientific Computing**, vol 36, no. 5, pp. C568–C590, 2014.
25. Temporal Workload-Aware Replicated Partitioning for Social Networks, *Ata Turk, R. Oguz Selvitopi, Hakan Ferhatosmanoglu and Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 26(5), pp. 1-14, 2014.
26. Improving the Performance of Independent Task Assignment Heuristics MinMin, MaxMin and Sufferage, *E. Kartal Tabak, B. Barla Cambazoglu, Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 25, no. 5, pp. 1244–1256, 2014.
27. Constrained Min-Cut Replication for K-Way Hypergraph Partitioning, *Volkan Yazıcı, Cevdet Aykanat*, **INFORMS Journal on Computing**, vol. 26, no. 2, pp. 303–320, 2014.
28. A term-based inverted index partitioning model for efficient distributed query processing, *B. Barla Cambazoglu, Enver Kayaaslan, Simon Jonassen, Cevdet Aykanat*, **ACM Transactions on the Web (TWEB)**, vol. 7, no. 3, 2014.
29. Hypergraph Partitioning Based Models and Methods for Exploiting Cache Locality in Sparse Matrix-Vector Multiplication, *Kadir Akbudak, Enver Kayaaslan, and Cevdet Aykanat*, **SIAM Journal on Scientific Computing**, vol. 35, no. 3, 2013.
30. Query-Log Aware Replicated Declustering, *Ata Turk, Kerim Y. Oktay, Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 24, no. 5, pp. 987–995, 2013.
31. A Recursive Bipartitioning Algorithm for Permuting Sparse Square Matrices into Block Diagonal Form with Overlap, *Seher Acer, Enver Kayaaslan, Cevdet Aykanat*, **SIAM Journal on Scientific Computing**, vol. 35, no. 1, 2013.
32. Document replication strategies for geographically distributed web search engines, *Enver Kayaaslan, Berkant Barla Cambazoglu, Cevdet Aykanat*, **Information Processing & Management**, vol. 49, no. 1, pp. 51–66, 2013.
33. Active node determination for correlated data gathering in wireless sensor networks, *Efe Karasabun, Ibrahim Korpeoglu, Cevdet Aykanat*, **Computer Networks**, vol. 57, no. 5, pp. 1124–1138, 2013.
34. A Signal Transduction Score Flow Algorithm for Cyclic Cellular Pathway Analysis, which Combines Transcriptome and ChIP-seq Data, *Zerrin Isik, Tulin Ersahin, Volkan Atalay, Cevdet Aykanat, and Rengul Cetin-Atalay*, **Molecular BioSystems**, vol. 8, pp. 3224–3231, 2012.
35. Replicated partitioning for undirected hypergraphs, *R. Oguz Selvitopi, Ata Turk, Cevdet Aykanat*, **Journal of Parallel Distributed Computing**, vol. 72, no. 4, pp. 547–563, 2012.
36. Partitioning Hypergraphs in Scientific Computing Applications through Vertex Separators on Graphs, *Enver Kayaaslan, Ali Pinar, Umit V. Catalyurek and Cevdet Aykanat*, **SIAM Journal on Scientific Computing**, vol. 34, no. 2, 2012.
37. A Parallel Framework for In-Memory Construction of Term-Partitioned Inverted Indexes, *Tayfun Kucukyilmaz, Ata Turk, Cevdet Aykanat*, **The Computer Journal**, vol. 55, no. 11, pp. 1317–1330, 2012.

38. Multilevel Segmentation of Histopathological Images Using Cooccurrence of Tissue Objects, *Ahmet C. Simsek, Akif B. Tosun, Cevdet Aykanat, Cenk Sokmensuer, Cigdem Gunduz Demir*, **IEEE Transactions on Biomedical Engineering**, vol. 59, no. 6, pp. 1681–1690, 2012.
39. Energy-price-driven query processing in multi-center web search engines, *Enver Kayaaslan, Barla B. Cambazoglu, Roi Blanco, Flavio P. Junqueira, Cevdet Aykanat*, **SIGIR'11 Proceedings of the 34th International ACM SIGIR Conference on Research and Development in Information Retrieval**, Beijing, China, July 2011,
40. Query forwarding in geographically distributed search engines, *Barla B. Cambazoglu, Emre Varol, Enver Kayaaslan, Cevdet Aykanat, Ricardo Baeza-Yates*, **SIGIR'10 Proceedings of the 33th International ACM SIGIR Conference on Research and Development in Information Retrieval**, Geneva, Switzerland, July 2010.
41. Hypergraph Partitioning-Based Fill-Reducing Ordering for Symmetric Matrices, *Umit V. Çatalyürek, Cevdet Aykanat and Enver Kayaaslan*, **SIAM Journal on Scientific Computing**, vol. 33, no. 4, pp. 1996–2023, 2011.
42. Parallel Frequent Itemset Mining with Selective Item Replication, *Eray Özkural, Bora Uçar, and Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 22, no. 10, pp. 1632–1640, 2011.
43. On Two-Dimensional Sparse-Matrix Partitioning: Models, Methods and a Recipe, *Umit V. Çatalyürek, Cevdet Aykanat and Bora Ucar*, **SIAM Journal on Scientific Computing**, vol. 32, no. 2, pp. 656–683, 2010.
44. A matrix partitioning interface to PaToH in MATLAB, *Umit V. Çatalyürek, Bora Ucar, Cevdet Aykanat*, **Parallel Computing**, vol. 36, no:5-6, pp. 254–272, 2010.
45. Site-Based Partitioning and Repartitioning Techniques for Parallel PageRank Computation, *Ali Cevahir, Ata Turk, Berkant B. Cambazoglu and Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 22, no. 5, pp. 786–802, 2010.
46. Efficient successor retrieval operations for aggregate query processing on clustered road networks, *Engin Demir, and Cevdet Aykanat*, **Information Sciences**, vol. 180, no. 14, pp. 2743–2762, 2010.
47. A Link-Based Storage Scheme for Efficient Aggregate Query Processing on Clustered Road Networks, *Engin Demir, Cevdet Aykanat and Berkant B. Cambazoglu*, **Information Systems**, vol. 35, no. 1, pp. 75–93, 2010.
48. Selective Replicated Declustering for Arbitrary Queries, *Kerim Y. Oktay, Ata Turk, and Cevdet Aykanat*, **Lecture Notes in Computer Science**, vol. 5704, pp. 375–386, 2009.
49. Multi-level Direct K-way Hypergraph Partitioning with Multiple Constraints and Fixed vertices, *Cevdet Aykanat, Berkant B. Cambazoglu and Bora Ucar*, **Journal of Parallel and Distributed Computing**, vol. 68, pp 609–625, 2008.
50. Chat Mining: Predicting User and Message Attributes in Computer-Mediated Communication , *Tayfun Kucukyilmaz, Berkent B. Cambazoglu, Cevdet Aykanat, and F. Can* , **Information Processing & Management**, vol. 44, no. 4, pp. 1448-1466, 2008.
51. One-Dimensional Partitioning for Heterogeneous Systems: Theory and Practice, *Ali Pinar, Ertugrul K. Tabak and Cevdet Aykanat*, **Journal of Parallel and Distributed Computing**, vol. 68, pp. 1473–1486, 2008.
52. Clustering Spatial Networks for Aggregate Query Processing, a Hypergraph Approach, *Engin Demir, Cevdet Aykanat and Berkant B. Cambazoglu*, **Information Systems**, vol. 33, no. 1, pp. 1–17, 2008.
53. Revisiting Hypergraph Models for Sparse Matrix Partitioning, *Bora Ucar and Cevdet Aykanat*, **SIAM Review**, vol. 49, no. 4, pp. 595–603, 2007.
54. Partitioning Sparse Matrices for Parallel Preconditioned Iterative Methods, *Bora Ucar and Cevdet Aykanat*, **SIAM Journal on Scientific Computing**, vol. 29, no. 4, pp. 1683–1709, 2007.
55. Hypergraph-Partitioning-Based Remapping Models for Image-Space-Parallel Direct Volume Rendering of Unstructured Grids, *B. Barla Cambazoglu and Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 18, no. 1, pp.3–16, 2007.
56. Heuristics for Scheduling File-Sharing Tasks on Heterogeneous Systems with Distributed Repositories, *Kamer Kaya, Bora Ucar and Cevdet Aykanat*, **Journal of Parallel and Distributed Computing**, vol. 67, pp. 271–285, 2007.

57. Architecture of a Grid-Enabled Search Engine, *Berkant B. Cambazoglu, Evren Karaca, Tayfun Kucukyilmaz, Ata Turk and Cevdet Aykanat*, **Information Processing & Management**, vol.43, pp. 609–623, 2007.
58. Parallel Image Restoration Using Surrogate Constraint Methods, *Bora Uçar, Cevdet Aykanat, Mustafa Pinar and Tahir Malas*, **Journal of Parallel and Distributed Computing**, vol. 67, pp, 186–204, 2007.
59. Adaptive Decomposition and Remapping Algorithms for Object-Space-Parallel Direct Volume Rendering of Unstructured Grids, *Cevdet Aykanat, B. Barla Cambazoglu, Ferit Findik and Tahsin Kurc*, **Journal of Parallel and Distributed Computing**, vol. 67, pp.77–99, 2006.
60. Performance of Query Processing Implementations in Ranking-Based Text Retrieval Systems Using Inverted Indices, *B. Barla Cambazoglu and Cevdet Aykanat*, **Information Processing Management**, vol.42, pp.878-895, 2006.
61. Iterative-Improvement-Based Heuristics for Adaptive Scheduling of Tasks Sharing Files on Heterogeneous Master-Slave Environments, *Kamer Kaya and Cevdet Aykanat*, **IEEE Transactions on Parallel and Distributed Systems**, vol. 17, no. 8, August 2006.
62. Task Assignment in Heterogeneous Systems, *Bora Ucar, Cevdet Aykanat, Kamer Kaya and Murat Ikinici*, **Journal of Parallel and Distributed Computing**, vol. 66, pp. 32-46, 2006.
63. Effect of Inverted Partitioning Schemes on Performance of Query Processing in Parallel Text Retrieval Systems, *Berkant B. Cambazoglu and Cevdet Aykanat*, **Lecture Notes in Computer Science**, vol. 4263, pp. 717–725, 2006.
64. Chat Mining for Gender Prediction, *Tayfun Kucukyilmaz, Berkant B. Cambazoglu, Cevdet Aykanat and Fazli Can*, **Lecture Notes in Computer Science**, vol. 4243, pp. 274–283, 2006.
65. Iterative-Improvement-Based Declustering Heuristics for Multi-Disk Databases, *Mehmet Koyuturk and Cevdet Aykanat*, **Information Systems**, vol. 30, no. 9, pp. 47-70, 2005.
66. Encapsulating Multiple Communication-Cost Metrics in Partitioning Sparse Rectangular Matrices for Matrix-Vector Multiplies, *Bora Ucar and Cevdet Aykanat*, **SIAM Journal on Scientific Computing**, vol. 25, no. 6, pp. 1837-1859, 2004.
67. Permuting Sparse Rectangular Matrices into Block-Diagonal Form, *Cevdet Aykanat, Ali Pinar, and Umit V. Catalyurek*, **SIAM Journal on Scientific Computing**, vol. 25, no. 6, pp. 1860-1879, 2004.
68. Clustering Based on Data Patterns using Hypergraph Models, *Mustafa Ozdal and Cevdet Aykanat*, **Data Mining and Knowledge Discovery**, vol. 9, pp. 29-57, 2004.
69. A message Ordering Problem in Parallel Programs, *Bora Ucar and Cevdet Aykanat*, **Lecture Notes in Computer Science**, vol. 3241, pp. 131-138, 2004.
70. Fast Optimal Load Balancing Algorithms for 1D Partitioning, *Ali Pinar and Cevdet Aykanat*, **Journal of Parallel and Distributed Computing**, vol. 64, pp. 974-996, 2004.
71. Data-Parallel Web Crawling Models, *B. Barla Cambazoglu, Ata Turk, and Cevdet Aykanat*, **Lecture Notes in Computer Science**, vol. 3280, pp. 801-809, 2004.
72. Direct Volume Rendering of Unstructured Grids, *Hakan Berk, Cevdet Aykanat, and Ugur Gudukbay*, **Computers & Graphics**, vol. 27, no. 9, pp. 387-406, 2003.
73. Minimizing Communication Cost in Fine-Grain Partitioning of Sparse Matrices, *Bora Ucar and Cevdet Aykanat*, **Lecture Notes in Computer Science**, vol. 2869, pp. 926-933, 2003.
74. Image-Space Parallel Direct Volume Rendering on a Cluster of PCs, *Berkant B. Cambazoglu and Cevdet Aykanat*, **Lecture Notes in Computer Science**, vol. 2869, pp. 457-464, 2003.
75. A Fine-Grain Hypergraph Model for 2D Decomposition of Sparse Matrices, *Umit V. Catalyurek and Cevdet Aykanat*, IPDPS 2001 International Parallel and Distributed Processing Symposium, San Fransico April 23–27, 2001.

76. A Hypergraph-Partitioning Approach for Coarse-Grain Decomposition, *Umit V. Catalyurek and Cevdet Aykanat*, **SC'01 Proceedings of 2001 ACM/IEEE Conference for High Performance Computing, Networking, Storage and Analysis**, Denver, Colorado, November 10–16, 2001.
77. Adaptive Routing on the New Switch Chip for IBM SP Systems, *Bulent Abali, Craig B. Stunkel, Jay Herring, Mohammed Banikazem, Dhableswar Panda, and Cevdet Aykanat*, **Journal of Parallel and Distributed Computing**, vol. 61, no. 9, pp. 1148-1179, 2001.
78. Image-Space Decomposition Algorithms for Sort-First Parallel Volume Rendering of Unstructured Grids, *Huseyin Kutluca, Tahsin M. Kurc, and Cevdet Aykanat*, **Journal of Supercomputing**, vol. 15, no. 1, pp. 51-93, 2000.
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