Curriculum Vitae: Cevdet Aykanat

Personal Data

- **Title, Name** : Prof. Dr. Cevdet Aykanat, Associate Provost
- **Address** : Computer Eng. Dept., Bilkent University, 06800 Ankara, Turkey
- **Phone / GSM / Fax** : +90 (312) 290 1213 / +90 533 343 4820 / +90 (312) 266 4152
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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

- **06/01 – present** Professor, Computer Engineering Department, Bilkent University
- **07/95 – 05/01** Associate Professor, Computer Engineering Department, Bilkent University
- **01/89 – 06/95** Assistant Professor, Computer Engineering Department, Bilkent University
- **09/85 – 10/87** 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)
- Reviewed numerous articles for prestigious journals such as: *IEEE Transactions on Parallel and Distributed Systems, SIAM Journal on Scientific Computing, SIAM Review, Journal of Parallel and Distributed Computing, Information Systems, Data Mining and Knowledge Discovery, IEEE Transactions on Data and Knowledge Engineering***,** etc.)

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 Küçükyılmaz	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	University of Tennessee	Research Scientist
Dr. Oğuz Selvitopi	Lawrence Berkeley National Lab.	Research Scientist
Dr. Seher Acer	Oak Ridge National Lab.	Research Scientist
Dr. M. Ozan Karsavuran	Bilkent University	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
- locality aware scheduling of irregular applications on Xeon Phi architecture
- parallelizing irregular applications on a cluster of GPUs
- 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

Grants and Scientific Leadership in Research Projects

- Parallel Stochastic Gradient Descent Algorithms for Large-Scale Recommendation Systems, August 2019 – January 2022
  - Assignment : Principle Investigator
  - Sponsor : TUBITAK Contract No:
  - Budget : 447,611 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: PRACE Implementation Phase Projects, July 2010 – March 2019
  - 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 TUBITAK Contract No: 109E019
  - 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: 102
- Total number of papers in conference proceedings: 70
- Total number of citations in *Harzing's Publish or Perish Index* 5500
  Google Scholar Citation Database
- *"h-index* = 39" for all of his citations.

Articles in Refereed (ISI: SCI and SSCI) Journals

1. Nabil Abubaker, Seher Acer, Cevdet Aykanat, "True Load Balancing for Matricized Tensor Times Khatri-Rao Product", IEEE Transactions on Parallel and Distributed Systems, vol. 32, no. 8, pp. 1974-1986, 2021.
2. Nazanin Jafari Oguz Selvitopi, Cevdet Aykanat, "Fast Shared-Memory Streaming Multilevel Graph Partitioning", Journal of Parallel and Distributed Computing, vol. 147, pp. 140-151, 2021.
3. M. Ozan Karsavuran, Seher Acer, Cevdet Aykanat, "Partitioning Models for General Medium-Grain Parallel Sparse Tensor Decomposition", IEEE Transactions on Parallel and Distributed Systems, vol. 32, no. 1, pp. 147-159, 2021.
4. Seher Acer, Enver Kayaaslan, Cevdet Aykanat, "A Hypergraph Partitioning Model for Profile Minimization", SIAM Journal on Scientific Computing, vol. 41, no. 1, pp. A83-A108, 2019.
5. Oguz Selvitopi, Gunduz V. Demirci, Ata Turk, Cevdet Aykanat, "Locality-aware and load-balanced static task scheduling for MapReduce", Future Generation Computer Systems, vol. 90, pp. 49-61, 2019.
6. Gunduz V. Demirci, Cevdet Aykanat, "Scaling Sparse Matrix-Matrix Multiplication in the Accumulo Database," Distributed and Parallel Databases, pp 1-32, 2019.
7. *Nabil Abubaker, Kadir Akbudak, Cevder Aykanat*, "Spatiotemporal Graph and Hypergraph Partitioning Models for Sparse Matrix-Vector Multiplication on Many-Core Architectures" IEEE Transactions on Parallel and Distributed Systems, vol. 30, no. 2, pp. 445-458, 2019.
8. F. Sukru Torun, Murat Manguoglu, Cevdet Aykanat, "A novel partitioning method for accelerating the block cimmino algorithm", SIAM Journal on Scientific Computing, vol. 40, no. 6, pp. C827-C850, 2018.
9. *Gunduz V. Demirci, Hakan Ferhatosmanoglu, Cevdet Aykanat*, "Cascade-aware partitioning of large graph databases," The VLDB Journal, pp. 1-22, 2018.
10. Seher Acer, Oguz Selvitopi, Cevdet Aykanat, "Optimizing nonzero-based sparse matrix partitioning models via reducing latency," Journal of Parallel and Distributed Computing, vol 122, no. 145-158, 2018.
11. Seher Acer, Tugba Torun, Cevdet Aykanat "Improving medium-grain partitioning for scalable sparse tensor decomposition," IEEE Transactions on Parallel and Distributed Systems, vol. 29, no. 12, pp. 2814-2825, 2018.
12. Enver Kayaaslan, Bora Ucar, Cevdet Aykanat, "1.5D Parallel Sparse Matrix-Vector multiply," SIAM Journal on Scientific Computing, vol. 40(1), pp. C25–C46, 2018.
13. Kadir Akbudak, R. Oguz Selvitopi, Cevdet Aykanat, "Partitioning Models for Scaling Parallel Sparse Matrix-Matrix Multiplication," ACM Transaction on Parallel Computing, vol. 4(3), pp. 13:1-34, 2018.
14. Tayfun Kucukyılmaz, B. Barla Cambazoglu and Cevdet Aykanat, "A Machine Learning Approach for Result Caching in Web Search Engines," Information Processing and Management, vol. 53(4), pp. 834-850, 2017.
15. F. Sukru Torun, Murat Manguoglu and Cevdet Aykanat, "Parallel Minimum Norm Solution of Sparse Block Diagonal Column Overlapped Underdetermined Systems. ACM Trans. Math. Software, vol. 43(4), pp. 31:1-31:21, 2017.
16. R. Oguz Selvitopi, Seher Acer and Cevdet Aykanat, "A Recursive Hypergraph Bipartitioning Framework for Reducing Bandwidth and Latency Costs Simultaneously," IEEE Transactions on Parallel and Distributed Systems, vol. 28(2),pp. 345-358, 2017.
17. Kadir Akbudak and Cevdet Aykanat, "Exploiting Locality in Sparse Matrix-Matrix Multiplication," IEEE Transactions on Parallel and Distributed Systems, vol. 28(8),pp. 2258-2271, 2017.

18. R. Oguz Selvitopi and Cevdet Aykanat, "Reducing Latency Cost of 2D Sparse Matrix Partitioning Models," Parallel Computing, vol. 57, pp. 1-24, 2016
19. Seher Acer, R. Oguz Selvitopi and Cevdet Aykanat, "Improving performance of sparse matrix dense matrix multiplication on large-scale parallel systems," Parallel Computing, vol. 59, pp. 71-96, 2016.
20. Ozan Karsavuran, Kadir Akbudak and Cevdet Aykanat, "Locality-Aware Parallel Sparse Matrix-Vector and Matrix-Transpose-Vector Multiplication on Many-Core Processors," IEEE Transactions on Parallel and Distributed Systems, vol. 27(6),pp. 1713-1726, 2016.
21. R. Oguz Selvitopi, M. Mustafa Ozdal and Cevdet Aykanat, "A Novel Method for Scaling Iterative Solvers: Avoiding Latency Overhead of Parallel Sparse-Matrix Vector Multiplies," IEEE Transactions on Parallel and Distributed Systems, vol. 26(3), pp. 632-645, March, 2015.
22. Kadir Akbudak and Cevdet Aykanat, "Simultaneous Input and Output Matrix Partitioning for Outer-product-parallel Sparse Matrix-Matrix Multiplication," SIAM Journal on Scientific Computing, vol. 36(5), pp. C568–C590, 2014.
23. Ata Turk, R. Oguz Selvitopi, Hakan Ferhatosmanoglu and Cevdet Aykanat, "Temporal Workload-Aware Replicated Partitioning for Social Networks," IEEE Transactions on Knowledge and Data Engineering, vol. 26(5), pp. 1–14, 2014.
24. E. Kartal Tabak, B. Barla Cambazoglu, Cevdet Aykanat, "Improving the Performance of Independent Task Assignment Heuristics MinMin, MaxMin and Sufferage," IEEE Transactions on Parallel and Distributed Systems, vol. 25(5), pp. 1244–1256, 2014.
25. Volkan Yazıcı and Cevdet Aykanat, "Constrained Min-Cut Replication for K-Way Hypergraph Partitioning," INFORMS Journal on Computing, vol. 26(2), pp. 303–320, 2014.
26. Seher Acer, Enver Kayaaslan and Cevdet Aykanat, "A Recursive Bipartitioning Algorithm for Permuting Sparse Square Matrices into Block Diagonal Form with Overlap," SIAM Journal on Scientific Computing, vol. 35(1), pp. C99–C121, 2013.
27. Kadir Akbudak, Enver Kayaaslan and Cevdet Aykanat, "Hypergraph Partitioning Based Models and Methods for Exploiting Cache Locality in Sparse Matrix-Vector Multiplication," SIAM Journal on Scientific Computing, vol. 35(3), pp. C237–C262, 2013.
28. B. Barla Cambazoglu, Enver Kayaaslan, Simon Jonassen, Cevdet Aykanat, "A Term-Based Inverted Index Partitioning Model for Efficient Distributed Query Processing," ACM Transactions on the Web, vol. 7(3), pp. 15:1–15:23, 2013.
29. Enver Kayaaslan, B. Barla Cambazoglu and Cevdet Aykanat, "Document Replication Strategies for Geographically Distributed Web Search Engines," Information Processing & Management, vol. 49, pp. 51–66, 2013.
30. Ata Turk, Yasin Oktay and Cevdet Aykanat, "Query-Log Aware Replicated Declustering," IEEE Transactions on Parallel and Distributed Systems, vol. 24(5), pp. 987–995, 2013.
31. Efe Karasabun, İbrahim Körpeoğlu and Cevdet Aykanat, "Active Node Determination for Correlated Data Gathering in Wireless Sensor Networks," Computer Networks, vol. 57(5), pp. 1124–1138, 2013.
32. Enver Kayaaslan, Ali Pinar, Umit V. Catalyurek and Cevdet Aykanat, "Partitioning Hypergraphs in Scientific Computing Applications through Vertex Separators on Graphs," SIAM Journal on Scientific Computing, vol. 34(2), pp. A970–A992, 2012.
33. R. Oğuz Selvitopi, Ata Türk and Cevdet Aykanat, "Replicated Partitioning for Undirected Hypergraphs," Journal of Parallel and Distributed Computing, vol. 72, pp. 547–563, 2012.
34. Ahmet ÇağrıŞimşek, Akif Burak Tosun, Cevdet Aykanat, Cenk Sokmensur and Cigdem Gunduz Demir, "Multilevel Segmentation of Histopathological Images Using Cooccurence of Tissue Objects, IEEE Transactions on Biomedical Engineering, vol. 59(6), pp. 1681–1690, 2012.
35. Tayfun Kucukyilmaz, Ata Türk, and Cevdet Aykanat, "A Parallel Framework for In-Memory Construction of Term-Partitioned Inverted Indexes," Computer Journal, vol. 55(11), pp. 1317–1330, 2012.
36. Zerrin Isık, Tulin Ersahin, Volkan Atalay, Cevdet Aykanat and Rengul Cetin-Atalay, "A Signal Transduction Score Flow Algorithm for Cyclic Cellular Pathway Analysis, which Combines Transcriptome and ChIP-seq

Data," Molecular BioSystems, vol. 8, pp. 3224–3231, 2012.

37. U.V. Çatalyürek, C. Aykanat and E. Kayaaslan, "Hypergraph Partitioning-Based Fill-Reducing Ordering for Symmetric Matrices," SIAM Journal on Scientific Computing, vol. 33(4), pp. 1996–2023, 2011.
38. Eray Özkural, Bora Uçar, and C. Aykanat, "A Parallel Frequent Itemset Mining Algorithm Using Graph Partitioning by Vertex Separator," IEEE Transactions on Parallel and Distributed Systems, vol. 22(10), pp. 1632–1640, 2011.
39. U.V. Çatalyürek, C. Aykanat and B Ucar, "On Two-Dimensional Sparse-Matrix Partitioning: Models, Methods and a Recipe", SIAM Journal on Scientific Computing, vol. 32(2), pp. 656–683, 2010.
40. U.V. Çatalyürek, B. Ucar, and C. Aykanat "A matrix partitioning interface to PaToH in MATLAB", Parallel Computing, vol. 36(5-6), pp. 254–272, 2010.
41. Cevahir, A. Turk, B. B. Cambazoglu and C. Aykanat, "Site-Based Partitioning and Repartitioning Techniques for Parallel PageRank Computation", IEEE Transactions on Parallel and Distributed Systems, vol. 22(5), pp. 786-802, 2010.
42. E. Demir and C. Aykanat, "Efficient successor retrieval operations for aggregate query processing on clustered road networks," Information Sciences, vol. 180(14), pp. 2743–2762, 2010
43. E. Demir, C. Aykanat and B.Barla Cambazoglu, "A Link-Based Storage Scheme for Efficient Aggregate Query Processing on Clustered Road Networks," Information Systems, vol. 35(1), pp. 75–93, 2010.
44. K. Y. Oktay, Ata Turk, and Cevdet Aykanat, "Selective Replicated Declustering for Arbitrary Queries", Lecture Notes in Computer Science, vol. 5704, pp. 375–386, 2009.
45. C. Aykanat, B.B. Cambazoglu and B. Ucar, "Multi-level Direct K-way Hypergraph Partitioning with Multiple Constraints and Fixed vertices," Journal of Parallel and Distributed Computing, vol. 68, pp 609–625, 2008.
46. T, Kucukyilmaz, B.B. Cambazoğlu, C. Aykanat, and F. Can, "Chat Mining: Predicting User and Message Attributes in Computer-Mediated Communication," Information Processing & Management, vol. 44(4), pp. 1448-1466, 2008.
47. A. Pinar, E.K. Tabak and C. Aykanat, "One-Dimensional Partitioning for Heterogeneous Systems: Theory and Practice," Journal of Parallel and Distributed Computing, vol. 68, pp. 1473–1486, 2008.
48. E. Demir, C. Aykanat and B. B. Cambazoglu, "Clustering Spatial Networks for Aggregate Query Processing, a Hypergarph Approach," Information Systems, vol. 33(1), pp. 1–17, 2008.
49. B. Ucar and C. Aykanat, "Revisiting Hypergraph Models for Sparse Matrix Partitioning," SIAM Review, vol. 49(4), pp. 595–603, 2007.
50. B. Uçar and C. Aykanat, "Partitioning Sparse Matrices for Parallel Preconditioned Iterative Methods," SIAM Journal on Scientific Computing, vol. 29(4), pp. 1683–1709, 2007.
51. B.B. Cambazoğlu and C. Aykanat, "Hypergraph-Partioning-Based Remapping Models for Image-Space-Parallel Direct Volume Rendering of Unstructured Grids," IEEE Transactions on Parallel and Distributed Systems, vol. 18(1), pp. 3–16, 2007.
52. K. Kaya, B. Uçar and C. Aykanat, "Heuristics for Scheduling File-Sharing Tasks on Heterogeneous Systems with Distributed Repositories," Journal of Parallel and Distributed Computing, vol. 67, pp. 271–285, 2007.
53. B.B. Cambazoğlu, E. Karaca, T. Kucukyilmaz, A. Turk and C. Aykanat "Architecture of a Grid-Enabled Search Engine, Information Processing & Management, vol.43, pp. 609–623, 2007.
54. B. Uçar, C. Aykanat, M. Pınar and T. Malas, "Parallel Image Restoration Using Surrogate Constraint Methods," Journal of Parallel and Distributed Computing, vol. 67, pp. 186–204, 2007.
55. C. Aykanat, B. B. Cambazoğlu, F. Findik, and T.M. Kurc, "Adaptive Decomposition and Remapping Algorithms for Object-Space-Parallel Direct Volume Rendering of Unstructured Grids," Journal of Parallel and Distributed Computing, vol. 67, pp. 77–99, 2007.
56. B.B. Cambazoğlu and C. Aykanat, "Performance of Query Processing Implementations in Ranking-Based Text Retrieval Systems Using Inverted indices," Information Processing & Management. vol. 42(4), pp. 875–898, 2006.

57. K. Kaya and C. Aykanat, “Iterative-Improvement-Based Heuristics for Adaptive Scheduling of Tasks Sharing Files on Heterogeneous Master-Slave Environments,” IEEE Transactions on Parallel and Distributed Systems, vol. 17(8), pp. 883–896, August 2006.
58. B. Ucar, C. Aykanat, K. Kaya and M. İkinci, “Task Assignment in Heterogeneous Systems,” Journal of Parallel and Distributed Computing, vol. 66(1), pp. 32–46, 2006.
59. B.B. Cambazoğlu, A. Çatal and C. Aykanat, “Effect of Inverted Partitioning Schemes on Performance of Query Processing in Parallel Text Retrieval Systems,” Lecture Notes in Computer Science, vol. 4263, pp. 717–725, 2006.
60. T. Kucukyilmaz, B.B. Cambazoğlu, C. Aykanat and F. Can, “Chat Mining for Gender Prediction,” Lecture Notes in Computer Science, vol. 4243, pp. 274–283, 2006.
61. Cevahir, C. Aykanat, A. Turk, B. B. Cambazoglu, “A Web-Site-Based Partitioning Technique for Reducing Preprocessing Overhead of Parallel PageRank Computation” Lecture Notes in Computer Science, vol. 4699, pp. 908-918, 2006.
62. M. Koyuturk and C. Aykanat, “Iterative-Improvement Based Declustering Heuristics for Multi-Disk Databases,” Information Systems, vol. 30, pp. 47–70, 2005.
63. B. Ucar and C. Aykanat, “Encapsulating Multiple Communication-Cost Metrics in Partitioning Sparse Rectangular Matrices for Parallel Matrix-Vector Multiplies," SIAM Journal on Scientific Computing, vol. 25(6), pp. 1837–1859, 2004.
64. C. Aykanat, A. Pinar, and U.V. Catalyurek, “Permuting Sparse Rectangular Matrices into Block Diagonal Form," SIAM Journal on Scientific Computing, vol. 25(6), pp. 1860–1879, 2004.
65. M. Özdal and C. Aykanat, “Hypergraph Models and Algorithms for Data-Pattern Based Clustering," Data Mining and Knowledge Discovery, vol. 9, pp. 29–57, 2004.
66. A. Pınar and C. Aykanat, "Fast Optimal Load Balancing Algorithms for 1D Partitioning," Journal of Parallel and Distributed Computing, vol. 64, pp. 974–996, 2004.
67. B.B. Cambazoglu, A. Turk and C. Aykanat, "Data-Parallel Web-Crawling Models,” Lecture Notes in Computer Science, vol. 3280, pp. 801–809, 2004.
68. B. Ucar and C. Aykanat, "A Message Ordering Problem in Parallel Programs," Lecture Notes in Computer Science, vol. 3241, pp. 131–138, 2004.
69. H. Berk, C. Aykanat, and U. Gudukbay, "Direct Volume Rendering of Unstructured Grids," Computers & Graphics, vol. 27(3), pp. 387–406, 2003.
70. B.B. Cambazoglu and C. Aykanat, "Image-Space Parallel Direct Volume Rendering on a Cluster of PCs," Lecture Notes in Computer Science, vol. 2869, pp. 457–464, 2003.
71. B.Ucar and C.Aykanat, "Minimizing Communication Cost in Fine-Grain Partitioning of Sparse Matrices,” Lecture Notes in Computer Science, vol. 2869, pp. 926–933, 2003.
72. B. Abali, C. Stunkel, J. Herring, M. Banikazemi, D. Panda, and C. Aykanat, “Adaptive routing on the New Switch Chip for IBM SP Systems," Journal of Parallel and Distributed Computing, vol. 61(9), pp. 1148–1179, 2001.
73. H. Kutluca, T.M. Kurç, and C. Aykanat, "Image-Space Decomposition Algorithms for Sort-First Parallel Volume Rendering of Unstructured Grids," Journal of Supercomputing, vol. 15, pp. 51–93, 2000.
74. U.V. Çatalyürek and C. Aykanat, "Hypergraph-Partitioning-Based Decomposition for Parallel Sparse-Matrix Vector Multiplication," IEEE Transactions on Parallel and Distributed Systems, vol. 10, pp. 673–693, 1999.
75. C. Aykanat, T. Bultan and I. Haritaoglu, "A Fast Neural-Network Algorithm for VLSI Cell Placement," Neural Networks, vol. 11, pp. 1671–1684, 1998.
76. T.M. Kurc, C. Aykanat and B. Ozguc, "Object-Space Parallel Polygon Rendering on Hypercubes," Computers & Graphics, vol. 22(4), pp. 487–503, 1998.
77. Dasdan and C. Aykanat, "Two Novel Multiway Circuit Partitioning Algorithms Using Relaxed Locking," IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, vol. 16, pp. 169–178, 1997.
78. T.M. Kurc, C. Aykanat and B. Ozguc, "A Comparison of Spatial Subdivision Algorithms for Sort-First Rendering," Lecture Notes in Computer Science, vol. 1225, pp. 137–146, 1997.

79. T.M. Kurc, C. Aykanat and B.Ozguc, "A Parallel Scaled Conjugate-Gradient Algorithm for the Solution Phase of Gathering Radiosity," Visual Computer, vol. 13, pp.1–9, 1997.
80. Pinar and C. Aykanat, "An Effective Model to Decompose Linear Programs for Parallel Solution," Lecture Notes in Computer Science, vol. 1184, pp. 592–601, 1997.
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