February 28, 2012

Curriculum Vita for Harold N. Gabow

Contact information

Computer Science Department
Campus Box 430
University of Colorado at Boulder
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Research areas

Design and analysis of algorithms: graphs and networks, combinatorial optimization, approximation algorithms, linear programming, data structures.

Education

B.A. in Mathematics, Harvard University, 1964–1968, Summa Cum Laude.

Ph.D. in Computer Science, Stanford University, 1970–1973.
"Implementations of algorithms for maximum matching on nonbipartite graphs."

University positions

University of Pennsylvania, Computer Science Department
Instructor, 1972–1973

University of Colorado at Boulder, Department of Computer Science
Assistant Professor, 1973–1979
Associate Professor, 1979–1986
Professor, 1986–2008
Professor Emeritus, 2008–present.

Ph.D. students

Manfred Warmuth, "Scheduling on profiles of constant breadth," 1981.

Matthias Stallmann, "An augmenting paths algorithm for the matroid parity problem on binary matroids," 1982.

Herbert Westermann, "Efficient algorithms for matroid sums," 1987.

Ying Xu, "Efficient sequential and parallel matroid intersection algorithms," 1991.

Ross McConnell, "Modular decomposition of graphs and two-structures," 1994
(co-advisor with Andrzej Ehrenfeucht).

Ruth Shrairman, "R^2-heaps with suspended relaxation for manipulating priority queues and a new algorithm for reweighting graphs," 1995.

San Skulrattanakulchai, "Efficient algorithms for graph coloring: vertex, edge, list, total, and acyclic coloring," 2002.

Shuxin Nie, "Algorithms on long paths and cycles in graphs," 2008.

Suzanne Gallagher, "Graph connectivity: Approximation algorithms and applications to protein-protein interaction networks," 2010 (co-advisor with Debra Goldberg).

Fourteen M.S. theses, one undergraduate thesis.

Service

Referee for thirty journals of computer science, mathematics and operations research.

Member Editorial Board
Theory of Computing Systems (formerly
Mathematical Systems Theory – An International Journal on Mathematical Computing Theory)
1989 – 2008
SIAM Journal on Computing, 1989 – 2007
Journal of Algorithms, 1990–2003

Algorithmica, 1992–2008
Journal of Computer and System Sciences, 1992 – 2004
Journal of the Association for Computing Machinery, 1997 – 2003
ACM Transactions on Algorithms, 2008 – present

Editor-in-Chief
ACM Transactions on Algorithms, 2004 – 2008

Guest Editor
Algorithmica 11, 3, Mar. 1994, Special Issue on Network Flow Algorithms
Journal of Computer and System Sciences 47, 3, Dec. 1993, Special Issue on *STOC 1990*
Journal of Computer and System Sciences 57, 1, Aug. 1998, Special Issue on *STOC 1995*
ACM Transactions on Algorithms 5, 3, 2009, Special Issue on *SODA 2007*.

NSF Panel Member, 1989, 1990, 1992, 1994, 1996, 2005.
NSF Review for DIMACS (Science and Technology Research Center for Discrete Mathematics and Theoretical Computer Science), 1994, 1995.

Reviewer for ACM Doctoral Dissertation Award, 1994; SIAM DiPrima Prize, 1995; Kyoto Prize, 1995, 1999; A.W. Tucker Prize, 1996.

Local Arrangements Chair
ACM Rocky Mountain Region Conference, 1974.
9th Annual ACM Symposium on Theory of Computing (STOC), 1977.

Program Committees
ACM Symposium on Theory of Computing (STOC), 1985, 1990 (Chair), 1995.
ACM-SIAM Symposium on Discrete Algorithms (SODA), 1991, 2007 (Chair).
European Symposium on Algorithms (ESA), 2003.
IEEE Symposium on Foundations of Computer Science (FOCS), 1988, 1992.
International Colloquium on Automata, Languages and Programming (ICALP), 2004.
International Computing and Combinatorics Conference (COCOON), 1999.
Workshop on Algorithm Engineering and Experiments (ALENEX), 2005.
Workshop on Algorithms and Data Structures (WADS), 2001.

SIGACT Distinguished Service Prize Committee, 2012 (Chair).

Elected Offices
SIGACT (ACM Special Interest Group on Algorithms and Computation Theory)
Secretary/Treasurer (1997–2001); Chair (2001–2005); Past-Chair (2005–2009).
ACM SIG Governing Board Executive Committee
Member-at-Large (2002–2004).
IEEE Technical Committee on Mathematical Foundations of Computer Science
Chair (2006–2008).

Awards
ACM Certificate of Recognition, 1990.
ACM Fellow, 2002.
ACM Recognition of Service Awards:
SIG Governing Board, Vice-Chair for Emerging Technology, 2002–2003.
SIG Governing Board, Conference Advisor, 2003–2004.
General Chair, STOC 2005.
Editor-in-Chief, *ACM Transactions on Algorithms*, 2004–2008.
Glover-Klingman Prize, with M. Goemans, E. Tardos and D. Williamson,
best paper of the year in *Networks: An International Journal* (publication #56) 2009,
SIGACT Distinguished Service Prize, 2010.

Consultant

AT&T Bell Laboratories, Murray Hill, New Jersey
Geometry and graph algorithms, Summers 1983, 1984; 1987–1989; 1992.

Grants

"An investigation of the complexity of enumerating and ranking combinatorial objects," National Science Foundation, 1978–1980, $34,680.

"Design and analysis of algorithms for deterministic scheduling and related problems," National Science Foundation, 1983–1985, $61,516.
Supplement, 1983, $27,384.

"Design and analysis of algorithms for networks, matroids and related problems," National Science Foundation, 1985–1987, $84,000.

"Efficient algorithms for problems on graphs, networks and matroids," National Science Foundation, 1988–1991, $127,600.
Supplement, 1989, $5,000.

"Algorithms for graphs, matroids and crossing set families," National Science Foundation, 1992–1994, $154,336.

Seminars and presentations

Seminars at sixteen universities and industrial laboratories.
Distinguished Speaker, Department of Computer Science, Cornell University, 1995.

"On the theoretic and practical efficiency of scaling algorithms for network problems," ORSA/TIMS Joint National Meeting, 1984.

"Matroid sum algorithms with applications," H.N. Gabow and H.H. Westermann, Fourth SIAM Conf. on Discrete Math., 1988 (presented by G.N. Frederickson).

"Scaling algorithms for matroid intersection problems," H.N. Gabow and Y. Xu, Fourth SIAM Conf. on Discrete Math., 1988.

"Theoretic and practical algorithms for linear matroid intersection problems," H.N. Gabow and Y. Xu, Third SIAM Conf. on Optimization, 1989.

"Four recent connectivity augmentation algorithms," H.N. Gabow, Second Budapest Workshop on Network Design, 1996.

"A network-flow-based scheduler: design, performance history and experimental analysis," H.N. Gabow, T. Kohno. *Proc. ALENEX 00, Second Workshop on Algorithm Engineering and Experiments*, pp.1–14.

"Algorithms for approximating the smallest k-edge connected spanning subgraph," H.N. Gabow, INFORMS Annual Meeting, 2004.

"Two LP-rounding algorithms for network design", H.N. Gabow, Maryland Theory Day, 2005.

Conference papers

1. "Using comparison trees to derive lower bounds for selection problems," F. Fussenegger and H.N. Gabow, *Proc. 17th Annual Symp. on Found. of Comp. Sci.,* 1976, pp. 178–182.
2. "Finding smallest spanning forests and trees subject to many degree constraints," H.N. Gabow, *Proc. 15th Annual Allerton Conf. on Communication, Control and Computing*, 1977, pp. 557–566.
3. "Algorithms for edge coloring bipartite graphs," H.N. Gabow and O. Kariv, *Proc. 10th Annual ACM Symp. on Theory of Comp.,* 1978, pp. 184–192.
4. "Finding the best solutions: the $COST < C$ problem and finding matchings," H.N. Gabow, *Proc. 16th Annual Allerton Conf. on Communication, Control and Computing*, 1978, pp. 242–251.
5. "Efficient algorithms for some matroid intersection problems," H.N. Gabow and R.E. Tarjan, *Proc. 20th Annual Symp. on Found. of Comp. Sci.,* 1979, pp. 196–204.
6. "Priority queues with variable priority and an $O(EV \log V)$ algorithm for finding a maximal weighted matching in general graphs," Z. Galil, S. Micali and H.N. Gabow, *Proc. 23rd Annual Symp. on Found. of Comp. Sci.,* 1982, pp. 255–261.
7. "A linear-time algorithm for a special case of disjoint set union," H.N. Gabow and R.E. Tarjan, *Proc. 15th Annual ACM Symp. on Theory of Comp.,* 1983, pp. 246–251.

8. "An efficient reduction technique for degree-constrained subgraph and bidirected network flow problems," H.N. Gabow, *Proc. 15th Annual ACM Symp. on Theory of Comp.,* 1983, pp. 448–456.
9. "Scaling algorithms for network problems," H.N. Gabow, *Proc. 24th Annual Symp. on Found. of Comp. Sci.,* 1983, pp. 248–257.
10. "Scaling and related techniques for geometry problems," H.N. Gabow, J.L. Bentley and R.E. Tarjan, *Proc. 16th Annual ACM Symp. on Theory of Comp.,* 1984, pp. 135–143.
11. "Efficient implementation of graph algorithms using contraction," H.N. Gabow, Z. Galil and T.H. Spencer, *Proc. 25th Annual Symp. on Found. of Comp. Sci.,* 1984, pp. 347–357.
12. "An augmenting path algorithm for the parity problem on linear matroids," M. Stallmann and H.N. Gabow, *Proc. 25th Annual Symp. on Found. of Comp. Sci.,* 1984, pp. 217–228.
13. "Efficient algorithms for graphic matroid intersection and parity," H.N. Gabow and M. Stallmann, *Automata, Languages and Programming: 12th Colloquium, Lecture Notes in Computer Science 194*, W. Brauer, Ed., Springer-Verlag, 1985, pp. 210–220.
14. "A scaling algorithm for weighted matching on general graphs," H.N. Gabow, *Proc. 26th Annual Symp. on Found. of Comp. Sci.,* 1985, pp. 90–100.
15. "Forests, frames and games: Algorithms for matroid sums and applications," H.N. Gabow and H.H. Westermann, *Proc. 20th Annual ACM Symp. on Theory of Comp.,* 1988, pp. 407–421.
16. "Almost-optimum speed-ups of algorithms for bipartite matching and related problems," H.N. Gabow and R.E. Tarjan, *Proc. 20th Annual ACM Symp. on Theory of Comp.,* 1988, pp. 514–527.
17. "Efficient algorithms for independent assignment on graphic and linear matroids," H.N. Gabow and Y. Xu, *Proc. 30th Annual Symp. on Found. of Comp. Sci.,* 1989, pp. 106–111.
18. "Data structures for weighted matching and nearest common ancestors with linking," H.N. Gabow, *Proc. 1st Annual ACM-SIAM Symp. on Disc. Algorithms,* 1990, pp. 434–443.
19. "A matroid approach to finding edge connectivity and packing arborescences," H.N. Gabow, *Proc. 23rd Annual ACM Symp. on Theory of Comp.,* 1991, pp. 112–122.
20. "Applications of a poset representation to edge connectivity and graph rigidity," H.N. Gabow, *Proc. 32nd Annual Symp. on Found. of Comp. Sci.,* 1991, pp. 812–821.
21. "A representation for crossing set families with applications to submodular flow problems," H.N. Gabow, *Proc. 4th Annual ACM-SIAM Symp. on Disc. Algorithms,* 1993, pp. 202–211.
22. "An efficient approximation algorithm for the survivable network design problem," H.N. Gabow, M.X. Goemans and D.P. Williamson, *Proc. Third MPS Conf. on Integer Programming and Combinatorial Optimization*, 1993, pp. 57–74.
23. "A framework for cost-scaling algorithms for submodular flow problems," H.N. Gabow, *Proc. 34th Annual Symp. on Found. of Comp. Sci.,* 1993, pp. 449–458.
24. "Efficient splitting off algorithms for graphs," H.N. Gabow, *Proc. 26th Annual ACM Symp. on Theory of Comp.,* 1994, pp. 696–705.
25. "Algorithms for graphic polymatroids and parametric s-sets," H.N. Gabow, *Proc. 6th Annual ACM-SIAM Symp. on Disc. Algorithms,* 1995, pp. 88–97.
26. "Packing algorithms for arborescences (and spanning trees) in capacitated graphs," H.N. Gabow and K.S. Manu, *Proc. Fourth MPS Conf. on Integer Programming and Combinatorial Optimization*, 1995, pp. 388–402.
27. "Perfect arborescence packing in preflow mincut graphs," H.N. Gabow, *Proc. 7th Annual ACM-SIAM Symp. on Disc. Algorithms,* 1996, pp. 528–538.
28. "Computing vertex connectivity: new bounds from old techniques," M.R. Henzinger, S. Rao and H.N. Gabow, *Proc. 37th Annual Symp. on Found. of Comp. Sci.,* 1996, pp. 462–471.
29. "Edge-connectivity augmentation with partition constraints," J. Bang-Jensen, H.N. Gabow, T. Jordán and Z. Szigeti, *Proc. 9th Annual ACM-SIAM Symp. on Disc. Algorithms,* 1998, pp. 306–315.
30. "Performance analysis and portability of the PLUM load balancing system," L. Oliker, R. Biswas and H.N. Gabow, *Proc. 4th Internat. Euro-Par Conf.*, Lecture Notes in Comp. Sci. 1470, Springer-Verlag, 1998, pp. 307–317.
31. "How to make a square grid framework with cables rigid," H.N. Gabow and T. Jordán, *Proc. 10th Annual ACM-SIAM Symp. on Disc. Algorithms,* 1999, pp. 356–365.

32. "Bipartition constrained edge-splitting in directed graphs," H.N. Gabow and T. Jordán, *Proc. 1st Japanese-Hungarian Symp. on Disc. Math. and its Applications*, 1999, pp. 225–232.
33. "Unique maximum matching algorithms," H.N. Gabow, H. Kaplan and R.E. Tarjan, *Proc. 31st Annual ACM Symp. on Theory of Comp.,* 1999, pp. 70–78.
34. "An algorithm for strongly connected component analysis in n log n symbolic steps," R. Bloem, H.N. Gabow and F. Somenzi, *Proc. Internat. Conf. on Formal Methods in Computer-Aided Design 2000*, in Formal Methods in Computer Aided Design, W.A. Hunt Jr. and S.D. Johnson, Eds., Lecture Notes in Computer Science 1954, Springer-Verlag, pp. 37–54.
35. "Using expander graphs to find vertex connectivity," H.N. Gabow, *Proc. 41st Annual Symp. on Found. of Comp. Sci.,* 2000, pp. 410–420.
36. "Maximum flow-life curve for a wireless ad hoc network," T.X. Brown, H.N. Gabow and Q. Zhang, *Proc. Symp. on Mobile Ad Hoc Networking and Computing,* ACM Press, 2001, pp. 128–136.
37. "A comparison of energy aware routing objectives in a wireless ad hoc network," T.X. Brown and H.N. Gabow, *Proc. 39th Annual Allerton Conf. on Communication, Control, and Computing,* 2001, pp. 791–792.
38. "An ear decomposition approach to approximating the smallest 3-edge connected spanning subgraph of a multigraph," H.N. Gabow, *Proc. 13th Annual ACM-SIAM Symp. on Disc. Algorithms,* 2002, pp. 84–93.
37. "The dynamic vertex minimum problem and its application to clustering-type approximation algorithms," H.N. Gabow and S. Pettie, *Eighth Scandinavian Workshop on Algorithm Theory*, Lecture Notes in Comp. Sci. 2368, Springer-Verlag, 2002, pp. 190–199.
38. "Coloring algorithms on subcubic graphs," H.N. Gabow and S. Skulrattanakulchai, *Proc. 8th Annual International Computing and Combinatorics Conf.*, Lecture Notes in Comp. Sci. 2387, Springer-Verlag, 2002, pp. 67–76.
39. "Better performance bounds for finding the smallest k-edge connected spanning subgraph of a multigraph," H.N. Gabow, *Proc. 14th Annual ACM-SIAM Symp. on Disc. Algorithms,* 2003, pp. 460–469.
40. "Finding a long directed cycle," H.N. Gabow and S. Nie, *Proc. 15th Annual ACM-SIAM Symp. on Disc. Algorithms,* 2004, pp. 49–58.
41. "Special edges, and approximating the smallest directed k-edge connected spanning subgraph," H.N. Gabow, *Proc. 15th Annual ACM-SIAM Symp. on Disc. Algorithms,* 2004, pp. 227–236.
42. "Finding paths and cycles of superpolylogarithmic length," H.N. Gabow, *Proc. 36th Annual ACM Symp. on Theory of Comp.,* 2004, pp. 407–416.
43. "Approximating the smallest k-edge connected spanning subgraph by LP-rounding," H.N. Gabow, M.X. Goemans, E. Tardos and D.P. Williamson, *Proc. 16th Annual ACM-SIAM Symp. on Disc. Algorithms,* 2005, pp. 562–571.
44. "On the L_∞-norm of extreme points for crossing supermodular directed network LPs," H.N. Gabow, *Eleventh MPS Conf. on Integer Programming and Combinatorial Optimization*, 2005, M. Jünger and V. Kaibel eds., Springer-Verlag LNCS 3509, pp. 392–406.
45. "Upper degree-constrained partial orientations," H.N. Gabow, *Proc. 17th Annual ACM-SIAM Symp. on Disc. Algorithms,* 2006, pp. 554–563.
46. "Iterated rounding algorithms for the smallest k-edge connected spanning subgraph," H.N. Gabow, S. Gallagher, *Proc. 19th Annual ACM-SIAM Symp. on Disc. Algorithms,* 2008, pp. 550–559.
47. "Finding long paths, cycles and circuits," H.N. Gabow, S. Nie, *Proc. 19th Int. Symp. on Algorithms and Comp.*, 2008, S. H. Hong, H. Nagamochi, and T. Fukunaga eds., Springer-Verlag LNCS 5369, pp. 752–763.

Invited presentations

"On the design and analysis of efficient algorithms for deterministic scheduling," *Proc. 2nd International Conf. on Foundations of Computer-Aided Process Designs,* 1983, pp. 473–528.

Publications

1. "An efficient implementation of Edmonds' algorithm for maximum matching on graphs," H.N. Gabow, *J. ACM, 23,* 2, 1976, pp. 221–234.

2. "Decomposing symmetric exchanges in matroid bases," H.N. Gabow, *Math. Programming 10,* 1976, pp. 271–276.
3. "On two problems in the generation of program test paths," H.N. Gabow, S.N. Maheshwari and L.J. Osterweil, *IEEE Trans. on Software Engineering SE-2*, 1976, pp. 227–231.
4. "Some improved bounds on the number of l-factors of n-connected graphs," H.N. Gabow, *Inf. Proc. Letters, 5,* 4, 1976, pp. 113–115.
5. "A note on degree-constrained star subgraphs of bipartite graphs," H.N. Gabow, *Inf. Proc. Letters, 5,* 6, 1976, pp. 165–167.
6. "Using Euler partitions to edge color bipartite multigraphs," H.N. Gabow, *Int. J. of Comp. and Inf. Sci. 5,* 4, 1976, pp. 345–355.
7. "Two algorithms for generating weighted spanning trees in order," H.N. Gabow, *SIAM J. Comput., 6,* 1, 1977, pp. 139–149.
8. "Finding all spanning trees of directed and undirected graphs," H.N. Gabow and E.W. Myers, *SIAM J. Comput., 7,* 3, 1978, pp. 280–287.
9. "A good algorithm for smallest spanning trees with a degree constraint," H.N. Gabow, *Networks 8*, 3, 1978, pp. 201–208.
10. "Algorithmic proofs of two relations between connectivity and the l-factors of a graph," H.N. Gabow, *Discrete Mathematics 26*, 1979, pp. 33–40.
11. "A counting approach to lower bounds for selection problems," F. Fussenegger and H.N. Gabow, *J. ACM, 26,* 2, 1979, pp. 227–238.
12. "A linear-time recognition algorithm for interval dags," H.N. Gabow, *Inf. Proc. Letters, 12,* 1, 1981, pp. 20–22.
13. "Algorithms for edge coloring bipartite graphs and multigraphs," H.N. Gabow and O. Kariv, *SIAM J. Comput., 11,* 1, 1982, pp. 117–129.
14. "An almost-linear algorithm for two-processor scheduling," H.N. Gabow, *J. ACM, 29,* 3, 1982, pp. 766–780.
15. "Efficient algorithms for a family of matroid intersection problems," H.N. Gabow and R.E. Tarjan, *J. Algorithms, 5,* 1984, pp. 80–131.
16. "A linear-time algorithm for a special case of disjoint set union," H.N. Gabow and R.E. Tarjan, *J. Comp. and System Sci., 30,* 2, 1985, pp. 209–221 (special issue on 15th Symp. on Th. Comp.).
17. "Scaling algorithms for network problems," H.N. Gabow, *J. Comp. and System Sci., 31,* 2, 1985, pp. 148–168 (special issue on 24th Symp. on Found. Comp. Sci.).
18. "An $O(EV \log V)$ algorithm for finding a maximal weighted matching in general graphs," Z. Galil, S. Micali and H.N. Gabow, *SIAM J. Comput., 15,* 1, 1986, pp. 120–130.
19. "Efficient algorithms for finding minimum spanning trees in undirected and directed graphs," H.N. Gabow, Z. Galil, T.H. Spencer and R.E. Tarjan, *Combinatorica 6,* 2, 1986, pp. 109–122 (special issue on 25th Symp. on Found. Comp. Sci.).
20. "An augmenting path algorithm for the parity problem on linear matroids," H.N. Gabow and M. Stallmann, *Combinatorica 6,* 2, 1986, pp. 123–150 (special issue on 25th Symp. on Found. Comp. Sci.).
21. "A linear-time algorithm for finding a minimum spanning pseudoforest," H.N. Gabow and R.E. Tarjan, *Inf. Proc. Letters, 27,* 5, 1988, pp. 259–263.
22. "Scheduling UET systems on two uniform processors and length two pipelines," H.N. Gabow, *SIAM J. Comput., 17,* 4, 1988, pp. 810–829.
23. "Algorithms for two bottleneck optimization problems," H.N. Gabow and R.E. Tarjan, *J. Algorithms, 9,* 3, 1988, pp. 411–417.
24. "Relaxed heaps: An alternative to Fibonacci heaps with applications to parallel computation," J.R. Driscoll, H.N. Gabow, R. Shrairman and R.E. Tarjan, *C. ACM 31*, 11, 1988, pp. 1343–1354.
25. "Efficient implementation of graph algorithms using contraction," H.N. Gabow, Z. Galil and T.H. Spencer, *J. ACM, 36,* 3, 1989, pp. 540–572.
26. "Faster scaling algorithms for network problems," H.N. Gabow and R.E. Tarjan, *SIAM J. Comput., 18,* 5, 1989, pp. 1013–1036.

27. "Faster scaling algorithms for general graph matching problems," H.N. Gabow and R.E. Tarjan, *J. ACM, 38,* 4, 1991, pp. 815–853.
28. "Forests, frames and games: Algorithms for matroid sums and applications," H.N. Gabow and H.H. Westermann, *Algorithmica, 7,* 1992, pp. 465–497 (special graph algorithms issue).
29. "An $O(n^2)$ divide-and-conquer algorithm for the prime tree decomposition of two-structures and modular decomposition of graphs," A. Ehrenfeucht, H.N. Gabow, R.M. McConnell and S.J. Sullivan, *J. Algorithms, 16,* 2, 1994, pp. 283–294.
30. "A matroid approach to finding edge connectivity and packing arborescences," H.N. Gabow, *J. Comp. and System Sci., 50,* 2, 1995, pp. 259–273 (special issue on 23rd Symp. on Th. Comp.).
31. "Centroids, representations and submodular flows," H.N. Gabow, *J. Algorithms, 18,* 3, 1995, pp. 586–628 (special issue on 4th Symp. on Disc. Alg.).
32. "Efficient theoretic and practical algorithms for linear matroid intersection problems," H.N. Gabow and Y. Xu, *J. Comp. and System Sci., 53,* 1, 1996, pp. 129–147.
33. "Algorithms for graphic polymatroids and parametric $\overline{\text{s}}$-sets," H.N. Gabow, *J. Algorithms, 26,* 1, 1998, pp. 48–86.
34. "An efficient approximation algorithm for the survivable network design problem," H.N. Gabow, M.X. Goemans and D.P. Williamson, *Math. Programming B, 82,* 1-2, 1998, pp. 13–40 (Special Issue on Applications of Computer Science Techniques in Combinatorial Optimization).
35. "Packing algorithms for arborescences (and spanning trees) in capacitated graphs," H.N. Gabow and K.S. Manu, *Math. Programming B, 82,* 1-2, 1998, pp. 83–109 (Special Issue on Applications of Computer Science Techniques in Combinatorial Optimization).
36. "An RNA folding method capable of identifying pseudoknots and base triples," J.E. Tabaska, R.B. Cary, H.N. Gabow and G.D. Stormo, *Bioinformatics 14*, 8, 1998, pp. 691–699.
37. "Edge-connectivity augmentation with partition constraints," J. Bang-Jensen, H.N. Gabow, T. Jordán and Z. Szigeti, *SIAM J. Disc. Math., 12,* 2, 1999, pp. 160–207.
38. "Computing vertex connectivity: new bounds from old techniques," M.R. Henzinger, S. Rao and H.N. Gabow, *J. Algorithms, 34,* 2, 2000, pp. 222–250.
39. "Path-based depth-first search for strong and biconnected components," H.N. Gabow, *Inf. Proc. Letters, 74,* 2000, pp. 107–114.
40. "How to make a square grid framework with cables rigid," H.N. Gabow and T. Jordán, *SIAM J. Computing*, 30, 2, 2000, pp. 649–680.
41. "Parallel tetrahedral mesh adaptation with dynamic load balancing," L. Oliker, R. Biswas and H.N. Gabow, *Parallel Computing 26*, 2000, pp. 1583–1608.
42. "Incrementing bipartite digraph edge-connectivity," H.N. Gabow and T. Jordán, *Journal of Combinatorial Optimization 4*, 4, 2000, pp. 449–486.
43. "Protein domain decomposition using a graph-theoretic approach," Y. Xu, D. Xu and H.N. Gabow, *Bioinformatics 16*, 12, 2000, pp. 1091–1104.
44. "Unique maximum matching algorithms," H.N. Gabow, H. Kaplan and R.E. Tarjan, *J. Algorithms, 40,* 2, 2001, pp. 159–183.
45. "Bipartition constrained edge-splitting in directed graphs," H.N. Gabow and T. Jordán, *Disc. Appl. Math. 115*, 1–3, 2001, pp. 49–62.
46. "The limits of input-queued switch performance with future packet arrival information," T.X. Brown and H.N. Gabow, *Computer Networks 42*, 2003, pp. 441–460.
47. "Coloring algorithms on subcubic graphs," H.N. Gabow and S. Skulrattanakulchai, *Int. J. Found. Comp. Sci. 15,* 1, 2004, pp. 21–40 (Special Issue on *International Computing and Combinatorics Conf.* 2002).
48. "An ear decomposition approach to approximating the smallest 3-edge connected spanning subgraph of a multigraph," H.N. Gabow, *SIAM J. Disc. Math. 18*, 1, 2004, pp. 41–70.
49. "An improved analysis for approximating the smallest k-edge connected spanning subgraph of a multigraph," H.N. Gabow, *SIAM J. Disc. Math. 19*, 1, 2005, pp. 1–18 (revision of Conference paper #39).
50. "A network-flow-based scheduler: design, performance history and experimental analysis,"H.N. Gabow and T. Kohno, *J. Experimental Algorithms 6*, (`http://www.acm.org/jea/volume6.html`, electronic journal) Article 3, 2001, 40 pages (special issue on ALENEX '00, Second Workshop on Algorithm Engineering and Experiments).

51. "An algorithm for strongly connected component analysis in n log n symbolic steps," R. Bloem, H.N. Gabow and F. Somenzi, *Formal Methods in System Design 28*, 2006, pp. 37–56.
52. "Using expander graphs to find vertex connectivity," H.N. Gabow, *J. ACM* 53, 5, 2006, pp. 800–844.
53. "On the L_∞-norm of extreme points for crossing supermodular directed network LPs," H.N. Gabow, Best Paper issue on *Eleventh MPS Conf. on Integer Programming and Combinatorial Optimization*, 2005, M. Jünger and V. Kaibel eds., *Mathematical Programming B*, published online 2006; 110, 1, 2007, pp. 111–144.
54. "Finding paths and cycles of superpolylogarithmic length," H.N. Gabow, *SIAM J. on Computing 36*, 6, 2007, pp. 1648–1671.
55. "Finding a long directed cycle," H.N. Gabow and S. Nie, *ACM Trans. on Algorithms*, 4, 1, 2008, Article 7, 21 pages.
56. "Approximating the smallest k-edge connected spanning subgraph by LP-rounding," H.N. Gabow, M.X. Goemans, E. Tardos and D.P. Williamson, *Networks 53*, 4, 2009, pp. 345–357.
57. "Iterated rounding algorithms for the smallest k-edge connected spanning subgraph," H.N. Gabow and S. Gallagher, *SIAM J. on Computing 41*, 2012, pp. 61–103.

Submitted

"The minimal-set poset for edge connectivity," H.N. Gabow, 44 pages.
"A poset approach to dominator computation," H.N. Gabow, 15 pages.
"Minimizing processor activation time and triangle-free 2-Matchings," J. Chang, H. Gabow and S. Khuller, 25 pages.
"A combinatoric interpretation of dual variables for weighted matching problems," H.N. Gabow, 37 pages.

Book chapters

"Searching", Ch 10.1, *Handbook of Graph Theory*, J.L. Gross, J. Yellen, eds., in *Discrete Math. and its Applications*, Vol. 25, CRC Press, Boca Raton, FL, 2003, pp. 953–984.

Unrefereed articles

"How to gracefully number certain symmetric trees," H.N. Gabow, *SIGACT News 7*, 4, 1975, pp. 33–36.
"Priming the pump for lower bounds on Chomsky form," H.N. Gabow, *Bull. of European Assoc. for Theory of Comp. Sci.,* 1983, pp. 54–67.

Software

Denver Health Department of Medicine Doctor Scheduling Program (used yearly, 1986–2000).