Curriculum Vitae
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EDUCATION

California Institute of Technology, Pasadena, California
B.S. in Mathematics, l969.
Stanford University, Stanford California
M.S. in Computer Science, l97l.
Ph.D. in Computer Science, minor in Mathematics, 1972.
Thesis title: *An Efficient Planarity Algorithm.*
Thesis advisor: Professor Robert W. Floyd.
Course advisor: Professor Donald Knuth.

EXPERIENCE

Cornell University, Ithaca, New York, 1972-1973
Assistant Professor of Computer Science.
University of California, Berkeley, California, 1973-1975,
Miller Research Fellow.
Stanford University, Stanford, California, 1974-1980
1974-1977, Assistant Professor of Computer Science.
1977-1980, Associate Professor of Computer Science.
AT&T Bell Laboratories, Murray Hill, New Jersey, 1980-1989
Member of Technical Staff
New York University, New York, New York, l98l-1985
Adjunct Professor of Computer Science.
Princeton University, Princeton, New Jersey, 1985-present
James S. McDonnell Distinguished University Professor of Computer Science.
Princeton University, Princeton, New Jersey, 1989-1994, 2001-present
Co-Director, National Science Foundation Center for Discrete Mathematics and Theoretical Computer Science (DIMACS).

NEC Research Institute, Princeton, New Jersey, 1989-1997
Fellow.
Massachusetts Institute of Technology, Cambridge, MA, 1996
Visiting Scientist.
InterTrust Technologies Corporation, Sunnyvale, CA 94086, 1997-2001
Chief Scientist, InterTrust, and Senior Research Fellow, STAR Labs.
Compaq Computer Corporation, Houston, TX , 2002
Corporate Fellow.
Hewlett Packard Corporation, Palo Alto, CA, 2002-2013
2002-2003, Chief Scientist.
2003-2013, Senior Fellow.
Microsoft, Mountain View, CA, 2013-2014
Visiting Researcher, Microsoft Research
Intertrust Technologies, Sunnyvale, CA, 2014-present
Chief Scientist

HONORS

Miller Research Fellowship, University of California, Berkeley, California, 1973-1975
Guggenheim Fellowship, 1978-1979
Nevanlinna Prize in Information Science, 1983
National Academy of Sciences Award for Initiatives in Research, 1984
Honorable Mention, Lanchester Prize of the Operations Research Society of America, 1984
Fellow, American Academy of Arts and Sciences, 1985
AT&T Bell Laboratories, Distinguished Member of Technical Staff, 1985
A. M. Turing Award of the Association for Computing Machinery, 1986
Member, National Academy of Sciences, 1987
Member, National Academy of Engineering, 1988
Fellow, American Association for the Advancement of Science, 1990
Member, American Philosophical Society, 1990
Foundation Fellow, Institute for Combinatorics and its Applications, 1991
Honorable Mention, Lanchester Prize of the Operations Research Society of America, 1993
Fellow, Association for Computing Machinery, 1994
Fellow, New York Academy of Sciences, 1994
Paris Kanellakis Award in Theory and Practice, Association for Computing Machinery, 1999
Blaise Pascal Medal in Mathematics and Computer Science, European Academy of Sciences, 2004
Fellow, Society for Industrial and Applied Mathematics, 2009
Edelman Award, INFORMS, member of winning HP team, 2009
Distinguished Alumni Award, California Institute of Technology, 2010
International Mathematical Union Circle, 2014

RECENT SERVICE (partial list)

Program Committee for ALENEX workshop, 2010
Program Committee for SWAT Symposium, 2010
Editor, Princeton University Press Series in Computer Science, 1985-present
Editor, Discrete and Computational Geometry, 1985-present
Correspondent, Mathematical Intelligencer, 1991-present
National Advisory Board, Computer Professionals for Social Responsibility, 1987-present
Co-Director, DIMACS, 1989-present
Class Membership Committee, National Academy of Sciences, 1991, 1992, 2015
Co-Organizer, Workshop on Algorithms and Data Structures, Bertinoro International Center for Informatics, 2007, 2009, 2011, 2013, 2015
Co-Director, School on Graph Theory, Algorithms, and Applications, Ettore Majorana Foundation and Centre for Scientific Culture, Erice, 2011, 2014
Co-P.I., Center for Computational Intractability, 2008-2014
Trustee, science.now, 2014-present

DISSERTATIONS SUPERVISED

Jacobo Valdez, "Parsing flowcharts and series-parallel graphs," Stanford University, 1978.
Thomas Lengauer, "Upper and lower bounds on space-time Trade-offs," Stanford University, 1979.
Gregory Nelson, "Techniques for program verification," Stanford University, 1980.
Bengt Aspvall, "Efficient algorithms for certain satisfiability and linear programming problems," Stanford University, 1980.
Daniel Sleator, "An $O(nm \log n)$ algorithm for maximum network flow," Stanford University, 1981.
John Gilbert, "Graph separator theorems and sparse Gaussian elimination," Stanford University, 1981.
Donald Woods, "Drawing planar graphs," Stanford University, 1981.
Samuel Bent, "Dynamic weighted data structures," Stanford University, 1982.
Neil Sarnak, "Persistent data structures," New York University, 1986.
Joan Lucas, "Structure and properties of the rotation graph of binary trees," Princeton University, 1987 (jointly supervised with A. S. LaPaugh).
Warren Smith, "Studies in computational geometry motivated by mesh generation," Princeton University, 1989 (jointly supervised with J. H. Conway).
Jeffrey Westbrook, "Algorithms and data structures for dynamic graph problems," Princeton University, 1989.
Heather Booth, "Fast algorithms on graphs and trees," Princeton University, 1991.
Xiaofeng Han, "An algorithmic approach to extremal graph problems," Princeton University, 1991.
Neal Young, "Competitive paging and dual-guided weighted caching and matching algorithms," Princeton University, 1991.
Adam L. Buchsbaum, "Data-structural bootstrapping and catenable deques," Princeton University, 1993.
Brandon Dixon, "Minimum spanning tree verification, fast priority queues, and massively parallel factoring," Princeton University, 1993.
Monika Rauch, "Fully dynamic graph algorithms and their data structures," Princeton University, 1993.

Ramesh Sitaraman, "Communication and fault tolerance in parallel computers," Princeton University, 1993.
Lesley R. Matheson, "Multigrid algorithms on massively parallel computers," Princeton University, 1994.
Haim Kaplan, "Purely functional lists," Princeton University, 1997.
Peter Yianilos, "Topics in computational hidden state modeling," Princeton University, 1997.
Kostas Tsioutsiouliklis, "Maximum flow techniques for network clustering," Princeton University, 2002.
Loukas Georgiadis, *Linear-Time Algorithms for Dominators and Related Problems*, 2005.
Renato F. Werneck, *Design and Analysis of Data Structures for Dynamic Trees*, 2006.
Sidhhartha Sen, *New Systems and Algorithms for Scalable Fault Tolerance*, 2013.

PATENTS

1. J. Bentley, D. Sleator, and R. E. Tarjan, U. S. Patent 4,796,003, *Data Compaction,* 1989.

2. B. Pinkas, S. Haber, R. E. Tarjan, and T. Sander, U. S. Patent 7,149,899, *Establishing a Secure Channel with a Human User*, 2006.

3. J. Horning, W. Sibert, R. E. Tarjan, U. Maheshwari, W. Horne, A. Wright, L. Matheson, and S. Owicki, U. S. Patent 7,430,670, *Software self-defense systems and methods*, Sept. 30, 2008.

4. W. Horne, L. Matheson, C. Sheehan, and R. E. Tarjan, U. S. Patent 7,581,103, *Software self-checking systems and methods*, 2009.

5. Y. Zhou, A. Kothari, R. Swaminathan, R. E. Tarjan, and A. Zhang, U.S. Patent 7,594,016, *Calculating numbers of servers for tiers of a multi-tiered system*, 2009.

6. R. E. Tarjan, B. Zhang, and Y. Zhou, U. S. Patent 7,680,641*, Identifying a minimum cut and/or a maximum flow using balancing of vertex excesses*, 2010.

7. W. Horne, U. Maheshwari, R. E. Tarjan, J. Horning, W. Sibert, L. Matheson, A. Wright, and S. Owicki, U. S. patent 7,739,511, *Systems and methods for watermarking software and other media*, 2010.

8. Y. Zhou, R. E. Tarjan, and B. Zhang, U. S. Patent 7,742,906, *Balancing collections of vertices in a network*, 2010.

9. W. Horne, U. Maheshwari, R. E. Tarjan, J. Horning, W. Sibert, L. Matheson, A. Wright, and S. Owicki, U. S. Patent 7,770,016, *Systems and methods for watermarking software and other media*, 2010.

10. J. Horning, W. Sibert, R. E. Tarjan, U. Maheshwari, W. Horne, A. Wright, L. Matheson, and S. Owicki, U. S. Patent 7.779.270, *Software self-defense systems and methods*, 2010.

11. J. Horning, W. Sibert, R. Tarjan, U. Maheshwari, W. Horne, A. Wright, L. Matheson, and S. Owicki, U.S. Patent 7,779,394, *Software self-defense systems and methods*, 2010.

12. N. Mishra, R. Schreiber, and R. E. Tarjan, U. S. Patent 7,818,272, *Method for discovery of clusters of objects in an arbitrary undirected graph using a difference between a fraction of internal connections and maximum fraction of connections by an outside object*, 2010.

13. J. Horning, W. Sibert, R. E. Tarjan, U. Maheshwari, W. Horne, A. Wright, L. Matheson, and S. Owicki, U. S. Patent 7,823,135, *Software self-defense systems and methods*, 2010.

14. Y. Zhou, A. Kothari, K. Chauduri, R. Swaminathan, and R. E. Tarjan, U. S. Patent 7,886,055, *Allocating resources in a system having multiple tiers*, 2011.

15. W. Horne, L. Matheson, C. Sheehan, and R. E. Tarjan, U. S. Patent 8,001,388, *Software self-checking systems and methods*, 2011.

16. W. Horne, U. Maheshwari, R. E. Tarjan, J. J. Horning, W. O. Sibert, L. R. Matheson, A. K. Wright, and S. S. Owicki, U. S. Patent 8140850, *Systems and methods for watermarking software and other media*, 2012.

17. R. S. Screiber, A. Ene, N. Milosavljevic, R. E. Tarjan, and M. Shah, U. S. Patent 8209742, *Computer-implemented method for obtaining a biclique cover in a bipartite dataset*, 2012.

18. B. Pinkas, S. Haber, R. E. Tarjan, and T. Sander, U. S. Patent 8220036, *Establishing a secure channel with a human user*, 2012.

19. W. Horne, U. Maheshwari, R. E. Tarjan, J. J. Horning, W. O. Sibert, L. R. Matheson, A. K. Wright, and S. S. Owicki, U. S. Patent 8335924, *Systems and methods for watermarking software and other media*, 2012.

20. W. G. Horne, L. R. Matheson, C. Sheehan, and R. E. Tarjan, U. S. Patent 8352747, *Software self-checking systems and methods*, 2013.

21. W. Horne, U. Maheshwari, R. E. Tarjan, J. J. Horning, W. O. Sibert, L. R. Matheson, A. K. Wright, and S. S. Owicki, U. S. Patent 8370634, *Systems and methods for watermarking software and other media*, 2013.

22. W. G. Horne, L. R. Matheson, C. Sheehan, and R. E. Tarjan, U. S. Patent 8387022, *Software self-checking systems and methods*, 2013.

23. M. C. Vargas-Magana, C. A. Santos, C. Valencia, L. H. Ramshaw, R. E. Tarjan, I. Lopez-Sanchez, and M. T. Gonzalez Diaz, U.S. Patent 8639562, *Cost entity matching*, 2014.

24. W. G. Horne, L. R. Matheson, C.Sheehan, and R. E. Tarjan, U. S. Patent 8713326, *Software self-checking systems and methods*, 2014.

25. W. G. Horne, U. Maheshwari, R. E. Tarjan, J. J. Horning, W. O. Sibert, L. R. Matheson, A. K Wright, and S. S. Owicki, U. S. Patent 8892893, *Systems and methods for watermarking software and other media*, 2014.

PUBLICATIONS

BOOKS

R. E. Tarjan, *Data Structures and Network Algorithms,* CBMS 44, Society for Industrial and Applied Mathematics, Philadelphia, PA, 1983.

G. Polya, R. E. Tarjan, D. R. Woods *Notes on Introductory Combinatorics,* Birkhäuser, Boston, MA, 1983.

REFEREED JOURNAL ARTICLES AND BOOK CHAPTERS

1. J. Hopcroft and R. E. Tarjan, "A V^2 algorithm for determining isomorphism of planar graphs," *Information Processing Letters* 1(1971), pp. 32-34.

2. C. R. Miller and R. E. Tarjan, "An analytical positive manifold algorithm for use with latent class analysis," *Multivariate Behavioral Research* (1971), pp. 363-372.

3. J. Hopcroft and R. E. Tarjan, "Planarity testing in *V* log *V* steps: extended abstract," *IFIP Congress 71: Foundations of Information Processing*, TA-2, North-Holland, Amsterdam (1971), pp. 18-22.

4. R. E. Tarjan, "Determining whether a groupoid is a group," *Information Processing Letters* 1 (1972), pp. 120-124.

5. R. E. Tarjan, "Sorting using networks of queues and stacks," *Journal ACM* 19 (1972), pp. 341-346.

6. R. E. Tarjan, "Depth-first search and linear graph algorithms," *SIAM Journal on Computing* 1 (1972), pp. 146-160; preliminary version in *Conf. Record Twelfth Annual Symp. on Switching and Automata Theory* (1971), pp. 114-121.

7. J. Hopcroft and R. E. Tarjan, "Isomorphism of planar graphs (working paper)" *Complexity of Computer Computations*, R.E.Miller and J.W. Thatcher, eds., Plenum Press, New York (1972), pp. 131-152.

8. J. Hopcroft and R. E. Tarjan, "A *V* log *V* algorithm for isomorphism of triconnected planar graphs," *Journal of Computer and System Sciences* 7 (1973), pp. 323-331.

9. M. Blum, R. Floyd, V. Pratt, and R. Rivest, and R. E. Tarjan, "Time bounds for selection," *Journal of Computer and System Sciences* 7 (1973), pp. 448-461.

10. J. Hopcroft and R. E. Tarjan, "Algorithm 447: Efficient algorithms for graph manipulation," *Communications ACM* 16 (1973), pp. 372-378.

11. J. Hopcroft and R. E. Tarjan, "Dividing a graph into triconnected components," *SIAM Journal on Computing* 2 (1973), pp. 135-158.

12. R. E. Tarjan, "Enumeration of the elementary circuits of a directed graph," *SIAM Journal on Computing* 2 (1973), pp. 211-216.

13. R. E. Tarjan, "A note on finding the bridges of a graph," *Information Processing Letters* 2 (1974), pp. 160-161.

14. R. E. Tarjan, "Finding dominators in directed graphs," *SIAM Journal on Computing* 3 (1974), pp. 62-89; preliminary version in *Proc. Seventeenth Annual Princeton Conf. on Inf. Sciences and Systems* (1973), pp. 414-418.

15. R. E. Tarjan, "A new algorithm for finding weak components," *Information Processing Letters* 3 (1974), pp. 13-15.

16. J. Hopcroft and R. E. Tarjan, "Efficient planarity testing," *Journal ACM* 21 (1974), pp. 549-568.

17. R. E. Tarjan, "A good algorithm for edge-disjoint branching," *Information Processing Letters* 3 (1974), pp. 52-53.

18. R. E. Tarjan, "Testing flow graph reducibility," *Journal of Computer and System Sciences* 9 (1974), pp. 355-365; preliminary version in *Proc. Fifth Annual ACM Symp.on Theory of Computing* (1973), pp. 96-107.

19. R. E. Tarjan, "Efficiency of a good but not linear set union algorithm," *Journal ACM* 22 (1975), pp. 215-225.

20. R. Read and R. E. Tarjan, "Bounds on backtrack algorithms for listing cycles, paths, and spanning trees," *Networks* 5 (1975), pp. 237-252.

21. J. Misra and R. E. Tarjan, "Optimal chain partitions of trees," *Information Processing Letters* 4 (1975), pp. 24-26.

22. S. Even and R. E. Tarjan, "Network flow and testing graph connectivity," *SIAM Journal on Computing* 4 (1975), pp. 507-518.

23. S. Goodman, S. Hedetniemi, and R. E. Tarjan, "*b*-matchings in trees," *SIAM Journal on Computing* 5 (1976), pp. 104-108.

24. D. Rose, R. E. Tarjan and G. Lueker, “Algorithmic aspects of vertex elimination on graphs," *SIAM Journal on Computing* 5 (1976), pp. 266-283.

25. R. E. Tarjan, “Edge-disjoint spanning trees and depth-first search,” *Acta Informatica* 6 (1976), pp. 17l-185.

26. G. Ehrlich, S. Even, and R. E. Tarjan, “Intersection graphs of curves in the plane," *Journal of Combinatorial Theory* 21 (1976), pp. 8-20.

27. S. Even and R. E. Tarjan, “A combinatorial problem which is complete in polynomial space," *Journal ACM* 23 (1976), pp. 710-719; preliminary version in *Proc. Seventh Annual ACM Symp. on Theory of Computing* (1975), pp. 66-71.

28. R. E. Tarjan, “Graph theory and Gaussian elimination," *Sparse Matrix Computations*, J.R. Bunch and D.J. Rose, eds., Academic Press, New York (1976), pp. 3-22.

29. R. E. Tarjan, “Iterative algorithms for global flow analysis,” *Algorithms and Complexity: New Directions and Recent Results*, J. F. Traub, ed., Academic Press, New York (1976), pp. 71-102.

30. K. Eswaran and R. E. Tarjan, “Augmentation problems," *SIAM Journal on Computing* 5 (1976), pp. 653-665.

31. M. R. Garey, D. S. Johnson, and R. E. Tarjan, “The planar Hamiltonian circuit problem is NP-complete," *SIAM Journal on Computing* 5 (1976), pp. 704-714.

32. D. Cheriton and R. E. Tarjan, “Finding minimum spanning trees,” *SIAM Journal on Computing* 5 (1976), pp. 724-742.

33. S. Even and R. E. Tarjan, “Computing an *st*-numbering,” *Theoretical Computer Science* 2 (1976), pp. 339-344.

34. G. Markowsky and R. E. Tarjan, “Lower bounds on the lengths of node sequences in directed graphs,” *Discrete Mathematics* 16 (1976), pp. 329-337.

35. R. E. Tarjan, “Finding optimum branchings,” *Networks* 7 (1977), pp. 24-35.

36. R. E. Tarjan, “Graph algorithms in chemical computation,” *Transactions of American Chemical Society* 46 (1977), pp. 1-20.

37. W. Paul, R. E. Tarjan, and J. Celoni, “Space bounds for a game on graphs,” *Math. Systems Theory* 10 (1977), pp. 239-251; preliminary version in *Proc. Eighth Annual ACM Symp. on Theory of Computing* (1976), pp. 149-160.

38. R. E. Tarjan and A. Trojanowski, “Finding a maximum independent set,” *SIAM Journal on Computing* 6 (1977), pp. 537-546.

39. D. Rose and R. E. Tarjan, "Algorithmic aspects of vertex elimination on directed graphs," *SIAM Journal of Applied Mathematics* 34 (1978), pp. 176-197.

40. R. E. Tarjan, "Complexity of monotone networks for computing conjunctions," *Annals of Discrete Mathematics* 2 (1978), pp. 121-133.

41. R. E. Tarjan, "Complexity of combinatorial algorithms," *SIAM Review* 20 (1978), pp. 443-456.

42. M. R. Garey, D. S. Johnson, F. P. Preparata, and R. E. Tarjan, "Triangulating a simple polygon," *Information Processing Letters* 7 (1978), pp. 175-179.

43. W. Paul and R. E. Tarjan, "Time-space trade-offs in a pebble game," *Acta Informatica* 10 (1978), 111-115; preliminary version in *Automata, Languages, and Programming, Fourth Colloquium* (1977), University of Turku, Finland, pp. 365-369.

44. M. R. Garey and R. E. Tarjan, "A linear-time algorithm for finding all feedback vertices," *Information Processing Letters* 7 (1978), pp. 274-276.

45. R. Lipton and R. E. Tarjan, "A separator theorem for planar graphs," *SIAM Journal of Applied Mathematics* 36 (1979), pp. 177-189; preliminary version in *Proc. Conf. on Theoretical Comp. Science* (1977), University of Waterloo, Waterloo, Ontario, Canada, pp. 1-10.

46. R. E. Tarjan, "A class of algorithms which require non-linear time to maintain disjoint sets," *Journal of Computer and System Sciences* 19 (1979), pp. 110-127.

47. M. R. Brown and R. E. Tarjan, "A fast merging algorithm," *Journal ACM* 26 (1979), pp. 211-226.

48. B. Aspvall, M. F. Plass, and R. E. Tarjan, "A linear-time algorithm for testing the truth of certain quantified Boolean formulas," *Information Processing Letters* 8 (1979), pp. 121-123.

49. R. Lipton, D. Rose and R. E. Tarjan, "Generalized nested dissection," *SIAM Journal on Numerical Analysis* 16 (1979), pp. 346-358.

50. T. Lengauer and R. E. Tarjan, "A fast algorithm for finding dominators in a flow graph," *Transactions on Programming Languages and Systems* I (1979), pp. 121-141.

51. R. E. Tarjan, "Applications of path compression on balanced trees," *Journal ACM* 26(1979), pp. 690-715.

52. R. E. Tarjan and A. C. Yao, "Storing a sparse table," *Communications ACM* 22 (1979), pp. 606-611.

53. D. J. Rose, A. Sherman, R. E. Tarjan, and G. Whitten, "Algorithms and software for in-core factorization of sparse symmetric positive definite matrices," *Computers and Structures* 10 (1979), pp. 411-418.

54. R. Lipton and R. E. Tarjan, "Applications of a planar separator theorem," *SIAM Journal on Computing* 9 (1980), pp. 615-627; preliminary version in *Proc.18th Annual Symp. on Foundations of Comp. Science* (1977), pp. 162-170.

55. P. J. Downey, R. Sethi, and R. E. Tarjan, "Variations on the common subexpression problem," *Journal ACM* 27 (1980), pp. 758-771.

56. J. R. Gilbert, T. Lengauer, and R. E. Tarjan, "The pebbling problem is complete in polynomial space," *SIAM Journal on Computing* 9 (1980), pp. 513-524; preliminary version in *Proceedings Eleventh Annual ACM Symposium on Theory of Computing* (1979), pp. 237-248.

57. M. R. Brown and R. E. Tarjan, "Design and analysis of a data structure for representing sorted lists," *SIAM Journal on Computing* 9 (1980), pp. 594-614.

58. E. Coffman, M. R. Garey, D. S. Johnson and R. E. Tarjan, "Performance bounds for level-oriented two-dimensional packing algorithms," *SIAM Journal on Computing* 9 (1980), pp. 808-826.

59. T. Lengauer and R. E. Tarjan, "The space complexity of pebble games on trees," *Information Processing Letters* 10 (1980), pp. 184-188.

60. R. Karp and R. E. Tarjan, "Linear expected-time algorithms for connectivity problems," *Journal of Algorithms* 1 (1980), pp. 374-393; preliminary version in *Proc. Twelfth Annual ACM Symp. on Theory of Computing* (1980), pp. 368-377.

61. R. E. Tarjan, "A unified approach to path problems," *Journal ACM* 28 (1981), pp. 577-593.

62. R. E. Tarjan, "Fast algorithms for solving path problems," *Journal ACM* 28 (1981), pp. 594-614.

63. M. R. Garey, D. S. Johnson, B. Simons, and R. E. Tarjan, "Scheduling unit-time tasks with arbitrary release times and deadlines," *SIAM Journal on Computing* 10 (1981), pp. 256-269.

64. E. Reingold and R. E. Tarjan, "On a greedy heuristic for complete matching," *SIAM Journal on Computing* 10 (1981), pp. 676-681.

65. R. E. Tarjan, Review of *Graphs and Networks* by B.Carre, *SIAM Reviews* 23 (1981), p. 397.

66. T. Lengauer and R. E. Tarjan, "Asymptotically tight bounds on time-space trade-offs in a pebble game," *Journal ACM* 29 (1982), pp. 1087-1130.

67. J. Reif and R. E. Tarjan, "Symbolic program analysis in almost-linear time," *SIAM Journal on Computing* 11 (1982), pp. 81-93.

68. J. Valdes, R. E. Tarjan, and E. Lawler, "The recognition of series-parallel digraphs," *SIAM Journal on Computing* 11 (1982), pp. 298-313; preliminary version in *Proc. Eleventh Annual ACM Symp. on Theory of Computing* (1979), pp. 1-12.

69. R. E. Tarjan, "A hierarchical clustering algorithm using strong components," *Information Processing Letters* 14 (1982), pp. 26-29.

70. R. E. Tarjan, "Sensitivity analysis of minimum spanning trees and shortest path trees," *Information Processing Letters* XIV (1982), pp. 30-33; Corrigendum, ibid. 23 (1986), p. 219.

71. M. R. Garey, D. S. Johnson, R. E. Tarjan, and M. Yannakakis, "Scheduling opposing forests," *SIAM Journal on Algebraic and Discrete Methods* 4 (1983), pp. 72-93.

72. R. E. Tarjan, "This weak's citation classic: depth-first search and linear graph algorithms," *Current Contents/Engineering, Technology and Applied Sciences* 14 (1983), p. 20.

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74. R. E. Tarjan, "Updating a balanced search tree in $O(1)$ rotations," *Information Processing Letters* 16 (1983), pp. 253-257.

75. R. E. Tarjan, "An improved algorithm for hierarchical clustering algorithm using strong components," *Information Processing Letters* 17 (1983), pp. 37-41.

76. R. E. Tarjan, "Space-efficient implementations of graph search methods," *ACM Trans. on Math. Software* 9 (1983), pp. 326-329.

77. J. Feigenbaum and R. E. Tarjan, "Two new kinds of biased search trees," *Bell System Tech. J.* LXII (1983), pp. 3139-3158.

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79. H. N. Gabow and R. E. Tarjan, "Efficient algorithms for a family of matroid intersection problems," *J. Algorithms* V (1984), pp. 80-131.

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81. R. E. Tarjan, "A simple version of Karzanov's blocking flow algorithm," *Operations Research Letters* II (1984), pp. 265-268.

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84. P. Rosenstiehl and R. E. Tarjan, "Gauss codes, planar Hamiltonian graphs, and stack-sortable permutations," *J. Algorithms* 5 (1984), pp. 375-390.

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86. J. Gilbert, J. Hutchinson, and R. E. Tarjan, "A separator theorem for graphs of bounded genus," *J. Algorithms* 5 (1984) pp. 391-407.

87. D. D. Sleator and R. E. Tarjan, "Amortized efficiency of list update and paging rules," *Comm. ACM* 28 (1985), pp. 202-208.

88. R. E. Tarjan, "Amortized computational complexity," *SIAM J. Alg. and Disc. Meth.* 6 (1985), pp. 306-318.

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