

Curriculum Vitae

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Personal

Name Martin Tompa
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Education

<i>Years</i>	<i>University</i>	<i>Department</i>	<i>Degree</i>
1970-74	Harvard	Applied Mathematics	A.B. (magna cum laude)
1974-75	Toronto	Computer Science	M.Sc.
1975-78	Toronto	Computer Science	Ph.D.

Employment

1981-84 Assistant Professor, Department of Computer Science, University of Washington.
1984-86 Associate Professor, Department of Computer Science, University of Washington.
1985-87 Research Staff Member, Theory of Computation, IBM Research Division, Thomas J. Watson Research Center.
1987-89 Manager, Theory of Computation, IBM Research Division, Thomas J. Watson Research Center.
1989- Professor, Department of Computer Science and Engineering, University of Washington.

Awards

1984-86 Presidential Young Investigator Award
1998 ACM Undergraduate Teaching Award
1999 ACM Undergraduate Teaching Award

Research

Selected Publications

1. "Time-Space Tradeoffs for Computing Functions, Using Connectivity Properties of their Circuits".
 - (a) *Proceedings of the Tenth Annual ACM Symposium on Theory of Computing*, San Diego, California, May 1978, 196-204.
 - (b) *Journal of Computer and System Sciences*, vol. 20, no. 2, April 1980, 118-132 (special issue containing selected papers from the symposium).

2. “An Optimal Solution to a Wire-Routing Problem”.
 - (a) *Proceedings of the Twelfth Annual ACM Symposium on Theory of Computing*, Los Angeles, California, April 1980, 161–176.
 - (b) *Journal of Computer and System Sciences*, vol. 23, no. 2, October 1981, 127–150 (special issue containing selected papers from the symposium).
3. “Two Familiar Transitive Closure Algorithms which Admit no Polynomial Time, Sublinear Space Implementations”.
 - (a) *Proceedings of the Twelfth Annual ACM Symposium on Theory of Computing*, Los Angeles, California, April 1980, 333–338.
 - (b) *SIAM Journal on Computing*, vol. 11, no. 1, February 1982, 130–137.
4. “The Parallel Complexity of Exponentiating Polynomials over Finite Fields” (with F. E. Fich).
 - (a) *Proceedings of the Seventeenth Annual ACM Symposium on Theory of Computing*, Providence, Rhode Island, May 1985, 38–47.
 - (b) *Journal of the ACM*, vol. 35, no. 3, July 1988, 651–667.
5. “Two Applications of Complementation via Inductive Counting” (with A. Borodin, S. A. Cook, P. W. Dymond, and W. L. Ruzzo).
 - (a) *Third Annual Conference on Structure in Complexity Theory*, Washington, D.C., June 1988, 116–125.
 - (b) *SIAM Journal on Computing*, vol. 18, no. 3, June 1989, 559–578.
6. “Zero Knowledge Interactive Proofs of Knowledge (a Digest)”. *Proceedings of the Second Conference on Theoretical Aspects of Reasoning about Knowledge*, Monterey, California, March 1988, 1–12 (invited address).
7. “Lower Bounds on the Length of Universal Traversal Sequences” (with A. Borodin and W. L. Ruzzo).
 - (a) *Proceedings of the Twenty First Annual ACM Symposium on Theory of Computing*, Seattle, Washington, May 1989, 562–573.
 - (b) *Journal of Computer and System Sciences*, vol. 45, no. 2, October 1992, 180–203 (special issue containing selected papers from the symposium).
8. “Minimal Adaptive Routing on the Mesh with Bounded Queue Size” (with D. D. Chinn and T. Leighton).
 - (a) *Proceedings of the 1994 ACM Symposium on Parallel Algorithms and Architectures*, Cape May, New Jersey, June 1994, 354–363.
 - (b) *Journal of Parallel and Distributed Computing*, vol. 34, no. 2, May 1, 1996, 154–170.
9. “An Algorithm for Finding Novel Gapped Motifs in DNA Sequences” (with E. Rocke). *Proceedings of the Second Annual International Conference on Computational Molecular Biology*, New York, NY, March 1998, 228–233.
10. “A Linear Time Algorithm for Finding All Maximal Scoring Subsequences” (with W. L. Ruzzo), *Seventh International Conference on Intelligent Systems for Molecular Biology*, Heidelberg, Germany, August 1999, 234–241.
11. “An Exact Method for Finding Short Motifs in Sequences, with Application to the Ribosome Binding Site Problem”, *Seventh International Conference on Intelligent Systems for Molecular Biology*, Heidelberg, Germany, August 1999, 262–271.

Patents

1. "Methods and apparatus for hinting a font for controlling stem width as font size and resolution of output device vary" (with D. Harel and E. Kohen). Microsoft Corporation. Patent No. 5,598,520, January 28, 1997.
2. "Methods and system for controlling intercharacter spacing as font size and resolution of output device vary" (with D. Harel and E. Kohen). Microsoft Corporation. Patent No. 5,740,456, April 14, 1998.

Professional Activities*Consulting*

1. Consultant to Boeing Aerospace Company on VLSI design, 1980.
2. Visiting Researcher, Microsoft Research, 1993-94.
3. Consultant to Rosetta Inpharmatics, 1999- .

Selected Grants

1. Principal Investigator of NSF grant MCS-8110089, "VLSI Design Aids, and Inherent Complexity of Common Problems", 6/15/81 – 5/31/84, \$52,600.
2. Principal Investigator of NSF grant DCR-8301212, "The Combinatorial Structure of Computations, and Symbolic Manipulation", 7/15/83 – 12/31/86, \$76,394.
3. Presidential Young Investigator Award, NSF grant DCR-8352093, 7/15/84 – 12/31/86, \$92,000.
4. Principal Investigator of IBM Research Contract 16980043, "Sponsored Research on the Theory of Computation", 8/1/89 – 12/31/91, \$19,893.
5. Principal Investigator of NSF grant CCR-9002891, "Exploiting Structured Computations" (with W. L. Ruzzo), 8/15/90 – 7/31/94, \$349,630.
6. Principal Investigator of NSF grant CCR-9301186, "Graph Traversal", 7/1/93 – 6/30/96, \$213,827.
7. Principal Investigator of NSF grant DBI-9601046, "Computational Problems in Physical Mapping and Sequencing" (with R. Karp and W. L. Ruzzo), 9/15/96 – 6/30/00, \$725,000.
8. Principal Investigator of NSF grant DBI-9974498, "Computational Problems in DNA Sequencing, and Regulatory and Sequence Analysis" (with R. Karp and W. L. Ruzzo), 9/1/99 – 8/31/02, \$1,292,457.

Editorial Activities

1. Program Committee member, *25th Annual Symposium on Foundations of Computer Science*, Boca Raton, Florida, October 1984.
2. Program Committee member, *Twentieth Annual ACM Symposium on Theory of Computing*, Chicago, Illinois, May 1988.
3. Program Committee member, *Twentieth-Fifth Annual ACM Symposium on Theory of Computing*, San Diego, California, May 1993.
4. Program Committee member, *Fourth Annual International Symposium on Algorithms and Computation*, Hong Kong, December 1993.
5. Program Committee chair, *37th Annual Symposium on Foundations of Computer Science*, Burlington, Vermont, October 1996.
6. Evaluation panel member, National Science Foundation Young Investigator Awards, January 1993.
7. Site visit committee member, National Institutes of Health proposed Center for Computational Biology and Bioinformatics, University of Pittsburgh, July 1999.
8. Editor, *Information and Computation*, 1984 – 1998.