

# Curriculum Vitae (Abbreviated version)

## Richard J. Anderson

Department of Computer Science and Engineering  
University of Washington  
Box 352350  
Seattle, WA 98195-2350  
206-543-4305  
anderson@cs.washington.edu  
<http://www.cs.washington.edu/homes/anderson>

Home:  
5011 9th Ave. NE  
Seattle, WA 98105  
206-632-7760

### Current Position

Full Professor, Department of Computer Science and Engineering, Univ. of Washington, since 1998.

Associate Professor, Department of Computer Science and Eng., Univ. of Washington, 1991–1998.

Assistant Professor, Department of Computer Science and Eng., Univ. of Washington, 1986–1991.

### Education

Ph.D., Computer Science, Stanford University, January, 1986. Advisor: Prof. Ernst Mayr. Thesis title: *The Complexity of Parallel Algorithms*.

B.A., Mathematics, Reed College, Portland, Oregon, June, 1981.

### Experience

Department of Computer Science and Automation, Indian Institute of Science, Bangalore, India.  
Visiting Professor of Computer Science, 1993-1994.

Mathematical Sciences Research Institute, Berkeley, California. Postdoctoral research fellow, 1985-1986.

### Honors and Awards

Best Paper Award, 1996 ACM Symposium on User Interface Software and Technology.

Indo-American Fellowship, Indo-US Subcommission on Education and Culture, Award to support sabbatical visit to the Indian Institute of Science, Bangalore, India, 1993-1994.

Fulbright Senior Scholar Award (declined), 1993-1994.

NSF Presidential Young Investigator Award, 1987-1992.

NSF Graduate Fellowship, Stanford University, 1981-1984.

### Grants

NSF KDI Grant “A Framework for Particle Simulation from Proteins to Planetesimals”, with G. Lake and T. Quinn, \$1,000,000 over 3 years, September, 1999.

NSF Grant “Applications of Algorithmic Techniques,” \$118,000 over 2 years, August 1997.

NSF ESS Planning Grant, “Applying Model Checking to Large Software System Specifications,” with D. Notkin and P. Beame, \$70,000 over one year, August 1997.

NSF Grant “An Experimental Study of Parallel and Distributed Algorithms,” \$150,000 over 2 years, September 1992.

NSF Institutional Infrastructure Award, “High Performance Parallel/Distributed Computing,” with A. Borning, T. DeRose, H. Levy, D. Notkin, E. Lazowska, L. Snyder, S. Tanimoto, and J. Zahorjan, \$1,600,377 over 4 years, July 1992.

NSF/DARPA Parallel Computing Award, with P. Beame and L. Ruzzo, \$200,000 over 3 years, May, 1989.

NSF Presidential Young Investigator Award, \$62,500 per year over 5 years, January, 1987.

#### **Ph.D. Student Supervision**

Omid Madani, expected completion, June 2000, “Markov Decision Processes”.

William Chan, Ph.D., December 1999, “Symbolic Model Checking for Large Software Specifications,” (co-advised with Paul Beame and David Notkin).

João Setubal, Ph.D., September, 1992, “Implementation of Parallel Network Flow Algorithms.”

Simon Kahan, Ph.D., October, 1991, “Real-Time Processing of Moving Data.” (Co-advised with Paul Beame.)

Erik Brisson, Ph.D., August, 1990, “Representation of  $d$ -Dimensional Geometric Objects.”

#### **Departmental Service (Last Five Years)**

1999-2000 Department Executive Committee, Professional Master’s Program Coordinator, Masters Admissions Committee (Chair), Tutored Video Instruction Coordinator, Faculty Recruiting Committee.

1998-1999 Professional Master’s Program Coordinator, Masters Admissions Committee (Chair), Educational Technology and Distance Learning

1997-1998 Professional Masters Program Coordinator, Masters Admissions (ch), Extension Liaison

1996-1997 Graduate Admissions (Chair), Department Executive Committee, Professional Masters Program Coordinator.

1995-1996 Graduate Admissions (Chair), Department Executive Committee, Professional Masters Program Coordinator, Departmental Retreat Organizer.

#### **Teaching (Last Five Years)**

1999-2000 CSE 598, Complexity Theory (G), CSE 521, Design and Analysis of Algorithms (G).

1998-1999 CSE 143, Introductory Programming II (U), CSE 321, Discrete Structures (U), CSE 522, Advanced Algorithms (G).

1997-1998 CSE 341, Programming Languages (U), CSE 321, Discrete Structures (U), CSE 521, Design and Analysis of Algorithms (G)

1996-1997 CSE 326, Data Structures (U), CSE 341, Programming Languages (U).

1995-1996 CSE 326, Data Structures (U), CSE 521, Design and Analysis of Algorithms (G), CSE 142, Introduction to Programming I (U).

## Selected Publications

- Anderson, R. J., Sobti, S., “The table layout problem,” *COMPGEOM '99. Proceedings of the 15th ACM Symposium on Computational Geometry*, pages 115–123, 1999.
- Chan, W., Anderson, R. J., Beame, P., Jones, D. H., Notkin, D., and Warner, W. E., “Decoupling synchronization from local control for efficient symbolic model checking of statecharts,” *Proceedings of the 1999 International Conference on Software Engineering*, pp. 142–151, May, 1999.
- Anderson, R. J., “Tree data structures for N-body simulation,” *SIAM Journal on Computing*, 28(6):1923–1940, 1999.
- Chan, W., Anderson, R. J., Beame, P., Burns, S., Modugno, F., Notkin, D., Reese, J., “Model checking large software specifications,” *IEEE Transactions on Software Engineering*, 24(7):498–520, July 1998.
- Chan, W., Anderson, R. J., Beame, P., Notkin, D., “Improving efficiency of symbolic model checking for state-based system requirements,” *ACM SSTA*, pp. 102–112, March, 1998.
- Anderson, R. J., Woll, H., “Algorithms for the certified write all problem,” *SIAM Journal on Computing*, 26, 5, October 1997, pp. 1277–1283.
- Chan, W., Anderson, R. J., Beame, P., Notkin, D., “Combining constraint solving and symbolic model checking for a class of systems with non-linear constraints,” *CAV'97*, June, 1997, pp. 316–327.
- Anderson, R. J., Beame, P., Brisson, E., “Parallel algorithms for arrangements,” *Algorithmica*, 15 (2), 1996, pp. 104–125.
- Borning, A., Anderson, R. J., and Freeman-Benson, B., “Indigo: a local propagation algorithm for inequality constraints,” *1996 ACM UIST*, November 1996, pages 129–136. Best Paper Award.
- Anderson, R. J., Setubal, J. C., “A parallel implementation of the push-relabel algorithm for the maximum flow problem,” *Journal of Parallel and Distributed Computing*, 29 (1), 1995, pp. 17–26.
- Anderson, R. J., Simons, B., “A fast heuristic for loop parallelization,” *Parallel Processing Letters*, 4 (3), 1994, pp. 281–299.
- Anderson, R. J., “Primitives for asynchronous list compression,” *Mathematical Systems Theory*, 27, 1994, pp. 453–470.
- Anderson, R. J., Setubal, J. C., “Parallel and sequential implementations of maximum-flow algorithms” *Network Flows and Matching*, Johnson and McGeoch editors, AMS, 1993, pp. 1–18.
- Anderson, R. J., Kahan, S., and Schlag, M., “Single-layer cylindrical compaction,” *Algorithmica*, 9, 1993, pp. 293–312.
- Anderson, R. J., Miller, G. L., “Deterministic parallel list ranking,” *Algorithmica*, 6, 1991, pp. 859–868.
- Anderson, R. J., Snyder, L., “A comparison of shared and nonshared memory models of parallel computation,” *Proceedings of the IEEE*, 79, 4, April 1991, pp. 480–487.
- Aggarwal, A., Anderson, R. J., Kao, M-Y., “Parallel depth-first search in general directed graphs,” *SIAM Journal on Computing*, 19, 2, April, 1990, pp. 397–409.
- Anderson, R. J., Miller, G. L., “A simple randomized parallel algorithm for list-ranking,” *Information Processing Letters*, 33, 10 January 1990, pp. 269–273.
- Anderson, R. J., Mayr, E. W., Warmuth, M. K., “Parallel approximation algorithms for bin packing,” *Information and Computing*, 82, 3, September, 1989, pp. 262–277.
- Anderson, R. J., Lovasz, L., Shor, P., Spencer, J., Tardos, E., Winograd, S., “Disks, balls, and walls: an analysis of a combinatorial game,” *American Mathematical Monthly*, 96, 6, 1989, pp. 481–493.
- Aggarwal, A., Anderson, R. J., “A random NC algorithm for depth first search,” *Combinatorica*, 8, 1, 1988, pp. 1–12.
- Anderson, R. J., “A parallel algorithm for the maximal path problem,” *Combinatorica*, 7, 3, 1987, pp. 315–326.
- Anderson, R. J., Woll, H., “Wait-free parallel algorithms for the union-find problem,” *Proceedings of the Twenty Third Annual ACM Symposium on the Theory of Computing*, May, 1991, pp. 370–380.