ANNE ROGERS

Personal Data

Birthdate: June 29, 1962
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Education

Carnegie Mellon University, Pittsburgh, Pennsylvania
B.S. in Mathematics, May, 1983.
Cornell University, Ithaca, New York
M.S. in Computer Science, June, 1988.
Cornell University, Ithaca, New York
Ph.D. in Computer Science, August, 1990.
Thesis title: Compiling for Locality of Reference
Thesis advisor: Keshav Pingali

Professional Appointments

University of Chicago, Chicago, Illinois
[August 2002 - present] Associate Professor, Department of Computer Science.
[October 2012 - June 2016] Associate Chair, Department of Computer Science.
AT&T Labs – Research, Florham Park, New Jersey
[May 2001 - July 2002] Technology Consultant, Software Systems Research Department.
[July 1996 - April 2001] Principal Technical Staff Member, Software Systems Research Department.
Princeton University, Princeton, New Jersey
[September 1990 - June 1997] Assistant Professor, Department of Computer Science.
University of Wisconsin-Madison, Madison, Wisconsin,
[January 1994 - August 1994] Visiting Assistant Professor, Computer Sciences Department.

Publications

Conference Papers

"In Search of Simplicity: A Self-Organizing Group Communication Overlay", M. Ripeanu, A. Iamnitchi, I. Foster, and A. Rogers, *First IEEE International Conference on Self-Adaptive and Self-Organizing Systems*, Boston, MA, (July 2007).

"An Application-Specific Database", K. Fisher, C. Goodall, K. Högstedt, A. Rogers. *Proceedings of 8th Biennial Workshop on Data Bases and Programming Languages (DBPL '01)*, Rome, Italy (Sept. 2001).

"Hancock: A Language for Extracting Signatures from Data Streams", Corinna Cortes, K. Fisher, D. Pregibon, A. Rogers, and F. Smith. In *Proceedings of the Sixth International Conference on Knowledge Discovery and Data Mining*, pages 9–17, Boston, Massachusetts, (Aug. 2000). Won Best Research Paper Award.

"Hancock: A Language for Processing Very Large-Scale Data", with D. Bonachea, K. Fisher, and F. Smith, Proceedings of the Second Usenix Symposium on Domain Specific Languages, Austin, Texas (Oct, 1999).

"Linear-Time Pointer-Machine Algorithms for Least Common Ancestors, MST Verification, and Dominators", with A. Buchsbaum, H. Kaplan, and J. Westbrook, Proceedings of the 30th ACM Symp. on Theory of Computing, Dallas, Texas (May 1998).

"Parallel Speech Recognition", with S. Phillips, Proceedings of Eurospeech '97, Rhodes, Greece (September, 1997).

"Ace: Linguistic Mechanisms for Customizable Protocols", with M. Raghavachari, Proceedings of the Seventh ACM SIGPLAN Symposium on Principles & Practice of Parallel Programming (PPOPP), Las Vegas, Nevada. (June, 1997).

"The Performance Impact of Incomplete Bypassing in Processor Pipelines", with P. Ahuja and D. Clark, Proceedings of 28th IEEE/ACM Annual International Symposium on Micro-Architecture, Ann Arbor, Michigan (November, 1995).

"Software Caching and Computation Migration in Olden", with M. Carlisle, Proceedings of the Fifth ACM Symposium on Principles and Practice of Parallel Programming, Santa Barbara, California (1995).

"Efficient Support for Irregular Applications on Distributed-Memory Machines", with M. Hill, J. Larus, S. Mukherjee, J. Saltz, and S. Sharma, Proceedings of the Fifth ACM Symposium on Principles and Practice of Parallel Programming, Santa Barbara, California (1995).

"Where is Time Spent in Message-Passing and Shared-Memory Programs?", with S. Chandra and J. Larus, Proceedings of the Sixth International Conference on Architectural Support for Programming Languages and Operating Systems, San Jose, California (1994).

"Application-specific Protocols for User-level Shared Memory", with M. Hill, B. Falsafi, J. Larus, A. Lebeck, S. Reinhardt, I. Schoinas, and D. Wood, Proceedings of Supercomputing '94, Washington, D.C. (1994).

"A Comparison of Techniques used for Mapping Parallel Algorithms to Message-Passing Multiprocessors", with M. Dikaiakos and K. Steiglitz, Proceedings of the Sixth IEEE Symposium on Parallel and Distributed Processing, Dallas, Texas (1994).

"FAST: A Functional Algorithm Simulation Testbed", with M. Dikaiakos and K. Steiglitz, Proceedings of the International Workshop on Modeling, Analysis and Simulation of Computer and Telecommunications Systems - MASCOTS'94 IEEE-Computer Society Press, (1994)

"Software Support for Speculative Loads", with K. Li, Proceedings of the Fifth International Conference on Architectural Support for Programming Languages and Operating Systems, Boston, Massachusetts (1992).

"Message Ordering in Multiprocessors with Synchronous Communication", with M.D. Dikaiakos and K. Steiglitz, Proceedings of the 1992 International Conference on Parallel Processing, Chicago, Illinois. (1992)

"Compiling for Locality", with K. Pingali, Proceedings of the 1990 International Conference on Parallel Processing, Chicago, Illinois. (1990)

"Process Decomposition Through Locality of Reference", with K. Pingali, Proceedings of the ACM SIGPLAN '89 Conference on Programming Language Design and Implementation, Portland, Oregon. (1989)

"Compiling Programs for Distributed Memory Architectures", with K. Pingali, Proceedings of the Fourth Hypercube Concurrent Computers and Applications Conference, Monterey, California. (1989)

"Attribute Propagation by Message Passing", with A. Demers and F.K. Zadeck, Proceedings of the ACM SIGPLAN '85 Symposium on Language Issues in Programming Environments, Seattle, Washington. (1985)

Book Chapters

"Hancock: A language for analyzing transactional data streams" with C. Cortes, K. Fisher, D. Pregibon, A. Rogers, and F. Smith. *Data Stream Management: Processing High-Speed Data Streams (Data-Centric Systems and Applications)*, Springer Verlag (Aug. 2008).

"Lazy Contract Checking for Immutable Data Structures", R. Findler, S. Guo, and A. Rogers. *Implementation of Functional Languages: 19th International Symposium IFL 2007 Freiburg, Germany Sept. 27-29*, Springer-Verlag, LNCS (summer 2008).

"UMM: A Dynamically Adaptive, Unstructured, Multicast Overlay", with M. Ripenau, I. Foster and A. Iamnitchi, *Service Management and Self-Organization in IP-based Networks*, (2005).

"Supporting Dynamic Data Structures with Olden", with M. Carlisle, *Compiler Optimization for Scalable Parallel Systems: Languages, Compilation Techniques and Run Time Systems*, Edited by S. Pande and D. Agarwal, Springer-Verlag, LNCS 1808 (2001).

"Understanding Language Support for Irregular Parallelism," with M. Raghavachari, *Parallel Symbolic Languages and Systems*, Edited by R. Halstead, T. Ito, and C. Queninnec, Springer Verlag LNCS 1068 (1996).

"Functional Algorithm Simulation," with M. D. Dikaiakos and K. Steiglitz, *Performance Modeling and Simulation of Advanced Computer Systems*, Edited by Bagchi, Walrand and Zobrist, Gordon and Breach. (1996)

"Early Experiences with Olden", with M. Carlisle, L.J. Hendren, and J.H. Reppy, *Languages and Compilers for Parallel Computing*, Edited by M. Wolfe, Springer Verlag LNCS 768 (1994)

"Supporting SPMD Execution for Dynamic Data Structures", with L.J. Hendren and J.H. Reppy, *Languages and Compilers for Parallel Computing*, Edited by U. Banerjee, D. Gelernter, A. Nicolau, and D. Padua, Springer Verlag LNCS 757 (1994).

"Compiler Parallelization of SIMPLE for a Distributed Memory Machine", with K. Pingali, *Languages, Compilers, and Run-time Environments for Distributed Memory Machines*, Edited by J. Saltz and P. Mehrotra, MIT Press, Cambridge, Massachusetts (1992).

Journal Articles

"In Search of Simplicity: A Self-Organizing Group Communication Overlay", M. Ripeanu, A. Iamnitchi, I. Foster, and A. Rogers, *Concurrency and Computation: Practice & Experience*, May 2010 (v22, n7).

"Linear-Time Algorithms For Dominators and Other Path-Evaluation Problems", with A. L. Buchsbaum, L. Georgiadis, H. Kaplan, and R. E. Tarjan, and J. R. Westbrook, *Siam Journal on Computing*, July 2008 (v38, n4).

"Corrigendum: A New Simpler Linear-Time Dominators Algorithm.", with A. L. Buchsbaum, H. Kaplan, and J. R. Westbrook *ACM Transactions on Programming Languages and Systems*, May 2005 (v27, n5).

"Hancock: A language for analyzing transactional data streams", with C. Cortes, K. Fisher, D. Pregibon, and F. Smith, *ACM Transactions on Programming Languages and Systems*, March 2004 (v26, n2).

"Visualizing and Analyzing Software Infrastructures", with A. Buchsbaum, Y. Chen, H. Huang, E. Koutsofious, J. Mocenigo, M. Jankowsky, and S. Mancoridis, *IEEE Software*, October 2001 (v18, n5).

"Ace: A Language for Parallel Programming with Customizable Protocols", with M. Raghavachari, in *ACM Transactions on Computer Systems*, 1999 (v17, n3).

"Parallel Speech Recognition", with S. Phillips, in *International Journal on Parallel Programming.*, 1999 (v27, n4).

"A New, Simpler Linear-Time Dominators Algorithm", with A. Buchsbaum, H. Kaplan, and J. Westbrook. in *ACM Transactions on Programming Languages and Systems*, 1998 (v20, n6).

"Software Caching and Computation Migration in Olden", with M. Carlisle, in *Journal of Parallel and Distributed Computing*, 1996 (v38, n2).

"Functional Algorithm Simulation of the Fast Multipole Method: Architectural Implications", with M. Dikaiakos and K. Steiglitz, *Parallel Processing Letters* (World Scientific Publisher), 1996 (v6, n1).

"Supporting Dynamic Data Structures on Distributed-Memory Machines", with M. Carlisle, L.H. Hendren and J.H. Reppy. *ACM Transactions on Programming Languages and Systems*, March, 1995 (v17, n2).

"A Comparison Study of Heuristics for Mapping Parallel Algorithms to Message Passing Microprocessors", with M. Dikaiakos and K. Steiglitz, *Journal of Parallel Algorithms and Applications*, 1995 (v10, N3-4).

"Compiling for Distributed Memory Architectures", with K. Pingali, *IEEE Transactions on Parallel and Distributed Systems*, March, 1994 (v5, n3).

Unpublished Manuscripts

Hancock Manual, K. Fisher, K. Hogstedt, A. Rogers, and F. Smith. August, 2000, (revised March, 2001 and July 2002). Available at www.research.att.com/projects/hancock.

"A Study of the Effects of Ordering, Partitioning, and Factorization Algorithms on Distributed Sparse Cholesky Factorization" with M. Raghavachari, Princeton University, Department of Computer Science, Technical Report number TR-505-96.

An Analysis of a Combined Hardware-software Mechanism for Speculative Loads", with S. Damianakis and K. Li, Princeton University, Department of Computer Science, Technical Report number TR-455-94.

Compiling for Locality of Reference, PhD thesis, Cornell University, August 1990.

Patents

"System and apparatus for recognizing speech", with S. Phillips, Patent no. 6,374,212, 2002.

Awards

Arthur L. Kelly Faculty Prize for Exceptional Service in the Physical Sciences Division, The University of Chicago, 2014.

Llewellyn John and Harriet Manchester Quantrell Award for Excellence in Undergraduate Teaching, 2010.

2001 AT&T Outstanding New Mentor Award.

Best Research Paper Award, Sixth International Conference on Knowledge Discovery and Data Mining (KDD'2000).

Department & University Service at The University of Chicago

Director, Masters Program in Computer Science, Sp'15-present

Faculty Co-Director, Masters Program in Computational Analysis and Public Policy, Sp'13-present

Committe of the Council of the Faculty Senate A'15-Sp 16

Council of the Faculty Senate A'03-S'06, A'14-Sp'17

Director of Graduate Studies, Department of Computer Science, A'05-S'11, A'12-W'15

College Council A'05-S'08

Courses Taught at The University of Chicago

Computer Science with Applications 1 (CMSC 12100) A'08 A'09, A'10, A'11, A'12, A'13, A'14, A'15

Computer Science with Applications 2 (CMSC 12200) W'09, W'10, W'11, W'12, W'13, W'14,W'15, W'16

Computer Science with Applications 3 (CMSC 12300) Sp'14

Computer Architecture (CMSC 22200/32200) S'03. W'06, S'07, S'08

Introduction to Computer Science II (CMSC 15200) W'07, W'08

Networks and Distributed Systems (CMSC 23300/33300) W'07, A'07, Sp'10

Introduction to Computer Systems (CMSC 15400), A'03, A'04, A'05, S'06, S'09

Introduction to Computer Systems (CSPP 52011), A'03, A'04

Introduction to Formal Languages (CMSC 28000), W'03

Topics in Software Systems: Ubiquitous, but protected, access to longitudinal medical records. (CMSC 33601), S'03

Computer Architecture (CSPP 52010), A'02.

Ph.D. Students Supervised

Mukund Raghavachari, Ace: A Programming Interface for Application-Specific Protocols. (January 1998) Machines.

Arthur Watson, Structured Testing: Analysis and Extensions. (January 1997)

Martin Carlisle, Olden:Supporting Dynamic Data Structures on Distributed Memory Machines. (May 1996)

Marios Dikaiakos, Fast: Functional Algorithmic Simulation Testbed (with K. Steiglitz). (January 1994)

Member Ph.D. Student Committees

Timothy Armstrong (June 2015)

Quan Tram Pham (August 2014)

Matthew Rocklin (August 2013)

Borja Sotomayor (August 2010)

Chuang Liu (June 2006)

Matei Ripeanu (August 2005)