RAVINDRA R. KURAMKOTE

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VISA Status: Permanent resident

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EDUCATION

Ph.D., Computer Science, University of Utah, Expected Graduation: Spring 2002.
M.S., Computer Science, Arizona State University, 1992.
B.E., Electronics and Communication, University of Mysore, 1984.

RESEARCH

Thesis: Design and Evaluation of a Multiple-Protocol Controller for Hardware Distributed Shared Memory Systems. Advisor: Professor John Carter

My thesis research improves the performance of shared memory applications by supporting multiple protocols in custom hardware with the constraints imposed by the use of commodity parts (e.g., processor, memory controller, and interconnect). This work is part of the Avalanche Multiprocessor project at Utah. Avalanche reduces communication penalty in commodity-based distributed memory multiprocessor by incorporating flexibility into both the message passing and shared memory systems. As a key research staff, I lead the design of Avalanche's shared memory system from the project's inception through its completion.

Before Avalanche, I worked on the Mach Shared Object project, in which we built a persistent object manager as a server on top of the operating system. I am currently a member of the Impulse memory system project to build an intelligent, efficient memory controller. I have been involved with this project from its conception, including the writing of the proposal.

EXPERIENCE

August 2000-Present, Software Design Engineer, Enterprise Systems Technology Lab, Hewlett-Packard.

September 1998-July 2000, Research Associate/Assistant, Impulse Project, University of Utah. Evaluation of the architectural simulators and consulting on the design of the memory controller.

October 1994-August 1998, Research Associate, Avalanche Project, University of Utah. Designed, verified, and simulated a directory-based shared memory controller.

June 1994-September 1994, Research intern, VLIW Architecture Group, Hewlett-Packard Laboratories. Simulated and tested HP's VLIW processor architecture, which was the precursor to the Intel Merced.

January 1993-May 1994, Research Assistant, Mach Shared Object Project, University of Utah. Implemented mechanisms to add flexibility at run time to the Mach operating system. Developed a transaction manager server to handle distributed transactions, an object server to manage small persistent objects, and a name server using the NFS XDR protocol interface on the UNIX platform.

September 1992-December 1992, Teaching Assistant, Department of Computer Science, University of Utah. Assisted in projects and graded homework assignments for a graduate course in Operating System.

January 1990-August 1992, Graduate Assistant, Graduate College, Arizona State University. Developed and maintained database software using FOCUS.

August 1989-December 1989, Computer Laboratory Assistant, Department of Computer Science, Arizona State University. Graded homework for an undergraduate course in Computer Literacy.

September 1985-June 1989, Field Engineer, DCM Data Products, India. Maintained hardware and developed diagnostic software for mini/micro computers.

August 1984-August 1985, Computer Engineer, Indian Express Pvt. Ltd., India. Developed and maintained hardware/software at the computer division.

COMPUTER SKILLS

Simulation and performance analysis of computer hardware systems.

Languages and tools such as C, C++, Perl, Make, and assembly languages (PA-RISC, Sparc, and X86).

Internals of operating systems such as BSD 4.4 and Mach.

Cache and bus protocols of modern processors (e.g., HP PA-7200/PA-8000 and MIPS R10000).

GRADUATE COURSES

Computer Architecture	Programming Linguistics	Structure of Programming Languages
Operating Systems	RISC Design Methodology	Distributed Operating Systems
Parallel Processing	Parallel Programming	Distributed Databases
Computer Networks	Database Design	Program Verification

SELECTED PUBLICATIONS

Ravindra Kuramkote, John Carter, and Chen-Chi Kuo, "Supporting Multiple Coherence Protocols in Programmable Shared Memory Controllers". In the Proceedings of the Eighth Workshop on Shared-memory Multiprocessors, Atlanta, April, 1999.

John Carter, Wilson Hsieh, Leigh Stoller, Mark Swanson, Lixin Zhang, Erik Brunvand, Al Davis, Chen-Chi Kuo, Ravindra Kuramkote, Michael Parker, Lambert Schaelicke and Terry Tateyama, "Impulse: Building a Smarter Memory Controller". In the Proceedings of the Fifth IEEE International Symposium on High Performance Computer Architecture, Orlando, January, 1999.

John Carter, Chen-Chi Kuo and Ravindra Kuramkote, "Design Alternatives for Shared Memory Multiprocessors". In the Proceedings of the 5th ACM/IEEE International Conference on High Performance Computing, Chennai, India, December, 1998.

Douglas B. Orr, Robert W. Mecklenburg and Ravindra Kuramkote, "Strange Bedfellows: Issues in Object Naming Under Unix". In the Proceedings of the Third International Workshop on Object Orientation in Operating Systems, Asheville, NC, December 9-10, 1993.

John B. Carter, Bryan Ford, Mike Hibler, Ravindra Kuramkote, Jeffrey Law, Jay Lepreau, Douglas B. Orr, Leigh Stoller and Mark Swanson, "FLEX: A Tool for Building Efficient and Flexible Systems". In the Proceedings of the Fourth Workshop on Workstation Operating Systems, Napa CA, October 14-15, 1993.

MISCELLANEOUS

Invited Talk: "Distributed Shared Memory in Avalanche" at Hewlett-Packard Laboratories, Palo Alto, CA on July 8, 1996.

Awards: National Merit Scholarship from the Government of India, Academic Scholarship from the Arizona State University for academic excellence during MS in Computer Science, Certificate from Upsilon Pi Epsilon, Honor Society in the Computing Sciences, Arizona State University.

Reviewing Activity: Journal for Parallel and Distributed Computing, IEEE Transactions on Parallel and Distributed Systems, Second Symposium on Operating Systems Design and Implementation, International Symposium on Computer Architecture, International EURO-PAR Conference.

Member: ACM, IEEE.