BINA RAMAMURTHY

226 Bell Hall, University at Buffalo (SUNY), Buffalo, NY 14260-2000

PROFESSIONAL PREPARATION

University of Madras, India	Electronics Engineering	B.E.(Honors), 1979
University of Madras, India	Computer Engineering	M.E., 1982
Wichita State University, Kansas	Computer Science	M.S., 1984
SUNY at Buffalo, New York	Electrical Engineering	Ph.D., 1997

APPOINTMENTS

1997–	Teaching Assistant Professor, Department of Computer Science and Engineering, University at Buffalo
1986–97	Lecturer, Department of Computer Science, University at Buffalo
1984–86	Lecturer, Department of Computer Science and Math, SUNY at Brockport, New York

REFEREED PUBLICATIONS

1. P. Gopalam, B. Ramamurthy and A. Cartwright, "Java Enabled Opto-Electronic Learning Tools and a Supporting Framework", Proceedings of the American Society for Engineering Education (ASEE) Annual Conference, Alburquerque, NM, 2001.

2. P. Ventura, and B. Ramamurthy,"The Translator Pattern: Ubiquity of Content", submitted to ACM SIGPLAN 2001 Conference on Programming Language Design and Implementation (ACM PLDI01), Snowbird, UT, 2001.

3. N.D. Vu and B. Ramamurthy, "Some Results About Choice Functions And Closure Operations", submitted to ACM Conference on Special Interest Group on Managment of Data/ Principles of Database Design (SIGMOD/PODS), Santa Barabara, CA, 2001.

4. B. Ramamurthy, S.J. Upadhyaya and B. Bhargava, "Design and analysis of a hardware-assisted checkpointing and recovery scheme for distributed applications", *IEEE Transactions on Knowledge and Data Engineering*, Vol.12, No. 2, pp.174-186, March/April 2000.

5. B. Ramamurthy, S.J. Upadhyaya and R.K. Iyer, "An object-oriented testbed for the evaluation of checkpointing and recovery systems", *IEEE Int. Symposium on Fault Tolerant Computing (FTCS-27)*, Seattle, WA, pp. 194-203, June 1997.

6. S. J. Upadhyaya, B. Ramamurthy, "Concurrent Process Monitoring With No Reference Signatures ", *IEEE Transactions on Computers*, Vol.43, no.4, pp.475-480, April 1994.

7. B. Ramamurthy, and A. C. Melton Jr., "A Synthesis of Software Measures and The Cyclomatic Number", *IEEE Transactions on Software Engineering*, vol.14, No. 8, pp.1116-1121, August 1988.

WORKSHOP PARTICIPATION and OTHER PUBLICATIONS

1. A. Thakkar and B. Ramamurthy,"An Event Pipeline Pattern", presented at the workshop on Jini Patterns at *OOPSLA 2000*, Minneapolis, MN.

2. B. Ramamurthy, "Industrial Training Know-how for Educators", workshop presented at *ACM SIGCSE 2000*, Austin, TX.

3. B. Ramamurthy "Learning and Teaching Object Technology", Technical Report, Computer Science and Engineering Department, BOF session at *ACM SIGCSE 1999*, New Orleans, LA.

4. B. Ramamurthy "Future of CS2 Workshop", Technical Report, Computer Science and Engineering Department, presented at *OOPSLA 1998*, Vancouver, BC.

5. B. Ramamurthy and S.J. Upadhyaya, "Watchdog Processor-Assisted Fast Recovery in Distributed Systems", *Fifth International Working Conference on Dependable Computing for Critical Applications*, Urbana-Champaign, IL, pp.125-134,September 1995.

6. B. Ramamurthy and S. J. Upadhyaya, "Concurrent Process Monitoring in RISC based Computer Systems", *IASTED International Conference on Reliability, Quality Control and RISK Assessment*, Cambridge, MA, pp.117-120, October 1993.

SYNERGISTIC ACTIVITIES

1. Java Center: Working with UB Development Office to set up a Java Center that with form a technolgoical alliance with the local corporation requiring information tchnology assistance.

2. Short Course and Industrial Training: Developed short courses to train personal from the local industry. Topics include: Object-oriented design, Embedded system design using UML, Programming in C++, Programming in Java, Component-based Design and Programming.

3. Curriculum Development: Established an industrial training program in the department for training legacy programmers in Object-Oriented Design and Programming.

4. Tool Development: Designed an Object-oriented Testbed for Checkpointing and Recovery (OTEC) as an extension of the tool Depend from and in collaboration with University of Illinois, at Urbana-Champaign.

GRANTS

Sun Academic Equipment Grant (SUNAEG): to set up a technology center to assist local corporations.

RESEARCH INTEREST

My Ph.D. dissertation dealt with the design and implementation of a comprehensive checkpointing and recovery scheme for distributed systems. It covered three major areas: Distributed Systems, Software Engineering and Computer Architecture. A byproduct of my dissertation was the design and implementation of a tool, Object-oriented Testbed for Evaluation of Checkpointing (OTEC).

I have diversified into applied research involving Distributed Computing, with emphasis on wireless and component based systems. The main goal of the research is to study the features needed to build a a highly interoperable and secure architecture for open distributed computing. Open distributed computing refers to collaborative computing among many large, independent distributed computing environments. Such systems are commonly used in a wide range of application areas including mobile computing, simulation, design automation, wireless world, embedded devices and appliances network, electronic marketplace just to mention a few prominent ones. Distributed computing infrastructures offer virtually unlimited connectivity and accessibility to information. Connectivity is exploited to provide collaboration among the distributed components of the system. Such collaboration relies heavily on the extent of interoperability among the various components of the distributed system. Specific issues to be addressed in this research include: (i) patterns for designing and deploying large scale systems (ii) infrastructural needs for third generation wireless domain, and (iii) Agent-based framework design for supporting electronic marketplace. I have a Ph.D. student working in the first of three issues above while the other two master's students are researching the other two issues. Currently I am directing an effort to set up an ecommerce infrastructure in the CSE department. The project is based on Enterpise Javabeans Technology and Oracle dataserver. My current research has excellent potential for attracting grants from NSF-like organization and also from industry.

TEACHING INTEREST

Teaching in the Computer and Information Systems area has become quite challenging with the fast pace of technological advances taking place in this area. To keep abreat I have participated in and conducted many national workshops on learning an teaching. I use technology for every day classroom teaching and for dissemination of course material. In most courses I teach I try to bridge the gap between a prescribed traditional core curricular requirements and the state of art technologies using innovative projects. I have also designed new courses such as CSE510 Enterpise Systems and CSE718 Distributed Systems. Latest paper I am working is on using Java Technology for exploring newer teaching methods. Effective introduction of advances in Information Technology can be achieved not only by curricular changes but also by adopting newer pedagogical frameworks such as collaborative learning and eXtreme Programming (XP). I believe I have done this quite successfully in the courses I teach.

COLLABORATORS

Doctoral Dissertation Advisor:

Dr. S.J. Upadhyaya, SUNY at Buffalo, Amherst, NY.

UB Faculty:

Computer Science and Engineering: Prof. Bharat Jayaraman;
Other Engineering Faculty: Profs. P.K. Banerjee, and G.F. Dargush (Civil, Structural & Environmental).
Prof. Alexander Cartwright (Electrical Engineering).

Other Collaborators:

Prof. Ravi Iyer, University of Illinois at Urbana-Champaign;
Prof. Austin Melton Jr., Kent State University;

Current Students at UB:

Philip Ventura (Ph.D), Amisha Thakkar (Ph.D), Pratiba Gopalam (M.S.), Eric Decker(M.S.), Adrienne Antkowiak (Ph.D).

DPARTMENTAL and UNIVERSITY SERVICES

1. Chair of Short Courses Committee.
2. Departmental advisor for undergraduate students.
3. Department representative for Discover UB, Freshman Orientation, Transfer Orientation and Parent/Perspective student Orientations.
4. Member of Educational Technology and Facilities Committee.
5. UB Faculty contact for Malaysian program. Help in the organization of CS courses at UB's branch campus in Kuala Lumpur, Malaysia.

PROFESSIONAL AFFILIATIONS

ACM, SIGCSE, IEEE-Computer Society.