

Himanshu Raj

3206 Klaus Advanced Computing Building
College of Computing, Georgia Tech
1542 Woodlake Dr NE, #F, Atlanta, GA 30329
404-717-2556
rhim@cc.gatech.edu

EDUCATION

August 2002 to August 2007
Ph.D. College of Computing
Georgia Institute of Technology, Atlanta
Thesis: Virtualization Services: Scalable Methods for Virtualizing Multicore Systems
Advisor: Prof. Karsten Schwan

August 2000 to December 2001
M.S. Computer Science
University of Florida, Gainesville
Dissertation: Integrated Alerting for Structured and Free-Text Data in TriggerMan,
Advisor: Dr. Eric N. Hanson.

July 1996 to May 2000
B.Tech. Computer Science and Engineering
Indian Institute of Technology, Guwahati
Dissertation: Visual Cryptography and Visual Authentication: Experiments and Analysis,
Advisor: Dr. Sukumar Nandi.

HONORS AND AWARDS

2004 Evaluated Outstanding Intern at IBM T.J. Watson Labs, NY
2003 Evaluated Excellent Research Intern at HP Labs, Palo Alto
2001 Evaluated Outstanding Research Assistant in Computer and Information Science and Engineering department, University of Florida
2000 Certificate of Merit, awarded by the University of Florida for academic excellence
2000 Ranked 2nd in the class of 2000, Indian Institute of Guwahati, among 75 students
1999 Certificate of Appreciation, awarded by Indian Institute of Technology, Guwahati for organizational participation in *Techniche*, the Technical Festival of IIT, Guwahati
1999 Certificate of Appreciation, awarded by Computer Science and Engineering Association, IIT Guwahati for serving as the secretary of management committee
1994 to 1996 National Scholarship for talent, awarded by Govt. of India for academic excellence
1994 Certificate of Academic Excellence, awarded by State Govt. of UP, India, for standing 21st statewide in state board higher secondary examination

ACTIVITIES

Editor, Mobile Operating Systems area at **IEEE Distributed Systems** online
(<http://dsonline.computer.org/OS/MobileOS.html>), 2003 - 2004
Member, Association of Computing Machinery (ACM), 2002 – current

THESES

Raj, H. (2001). Integrated Alerting for Structured and Free-Text Data in TriggerMan, *Published Graduate Electronic Thesis*, University of Florida, Gainesville.
Raj, H. (2000). Visual Cryptography and Visual Authentication: Experiments and Analysis, *Unpublished Undergraduate Dissertation*, Indian Institute of Technology, Guwahati.

RECENT PUBLICATIONS

- Sanjay Kumar, Himanshu Raj, Karsten Schwan, Ivan Ganey (2007) Re-architecting VMMs for Multicore Systems: The Sidecore Approach, to appear in WIOSCA 2007, in conjunction with ISCA 2007.
- Himanshu Raj, Karsten Schwan (2007) High Performance and Scalable I/O Virtualization via Self-Virtualized Devices, HPDC 2007, larger version available as CERCS tech report GIT-CERCS-06-02.
- Ada Gavrilovska, Sanjay Kumar, Himanshu Raj, Karsten Schwan et al (2007) High-Performance Hypervisor Architectures: Virtualization in HPC Systems, workshop on High Performance Virtualization (HPCVirt), in conjunction with EuroSys 2007.
- Martin Schwidewsky, Hubertus Franke, Ray Mansell, Himanshu Raj, Damien Oseik, JonhHyuk Choi (2006) Collaborative Memory Management in Hosted Linux Environments, The Ottawa Linux Symposium 2006.
- Himanshu Raj, Balasubramanian Seshasayee, Keith J. O'Hara, Ripal Nathuji, Karsten Schwan, Tucker Balch (2006) Spirits: Using Virtualization and Pervasiveness to Manage Mobile Robot Software Systems, The Second IEEE International Workshop on Self-Managed Networks, Systems & Services (SelfMan 2006).
- Keith J. O'Hara, Ripal Nathuji, Himanshu Raj, Karsten Schwan, Tucker Balch (2006) AutoPower: Toward Energy-Aware Software Systems for Distributed Mobile Robots, IEEE International Conference on Robotics and Automation, 2006, Orlando, FL.
- Himanshu Raj, Karsten Schwan (2005) Implementing a Scalable Self-Virtualizing Network Interface on an Embedded Multicore Platform, Workshop on Interaction between Operating System and Computer Architecture (in conjunction with IISWC), 2005, Austin, TX.
- Himanshu Raj, Karsten Schwan, Ripal Nathuji (2005). M-Echo: A Middleware for Morphable Data-Streaming in Pervasive Systems, Workshop on End-to-End, Sense-and-Respond Systems, Applications, and Services, 2005, Seattle, WA
- Himanshu Raj, Rich Gossweiler, Dejan Milojicic (2004). ContentCascade Incremental Content Exchange between Public Displays and Personal Devices, In *proceedings of Mobiquitous 2004*. Also available as *HPL Tech Report HPL-2004-18*.

MANUSCRIPTS IN PREPARATION

Himanshu Raj, Karsten Schwan. Extensible Virtualization in Multicore Systems.

PATENTS

A Hovering Based Content Exchange Mechanism (in collaboration with Rich Gossweiler and Dejan Milojicic, HP Labs, Palo Alto), pending, 2003.

EXPERIENCE

August 2004 to December 2004

Research Intern, K42 group at IBM T.J. Watson Research Lab, Yorktown Heights, NY (Advisor: Jimi Xenidis). Duties: Research and development related to rHype, IBM's research hypervisor and K42 operating system.

May 2004 to August 2004

Research Intern, Enterprise Linux Group at IBM T.J. Watson Research Lab, Yorktown Heights, NY. (Advisor: Dr. Hubertus Franke). Duties: Collaborative Memory Management for Linux and zVM.

May 2003 to August 2003

Research Intern, Hewlett-Packard Research Lab, Palo Alto (Advisor: Dr. Dejan Milojicic). Duties: Research and development of ContentCascade Mechanism for content exchange between a cell phone and a public display.

January 2003 till date

Research Assistant, Systems Research Group, CoC, GaTech. Duties: Research on virtualization technologies for multicore systems. Also administration of multiple Linux based server systems.

December 2001 to May 2002

Software Engineer, Velara Software Inc. (www.velara.com). Duties: Design and development of Vigilert alerting system.

August 2000 to December 2001

Research Assistant, Database Center, University of Florida. Duties: Research on database alerting techniques for TriggerMan system.

May 1999 to July 1999

Summer Intern, Novell Software India Development Center, Bangalore, India. Duties: Design and performance improvement of an API for Scalable Reliable Multicast.

RESEARCH INTERESTS

System Virtualization, Operating Systems and Distributed Systems.

TECHNICAL SKILLS

Programming Languages – C/C++, Java, Assembly (x86/IXP2400), Python, Perl, Tcl/Tk, SQL, HTML, shell scripting

Hypervisors – Xen, VMWare Workstation

Operating Systems – Linux, PalmOS, Symbian, Real Time Linux, Windows

Tools – Sun JDK, MS Visual C++, GNU Compiler Tools, IBM Cell SDK, Oracle, MS SQL server, PalmOS Development, ns2, LaTeX

Technologies – System virtualization, Linux Kernel and Device Driver Development, Intel Network Processor, IBM Cell Processor, Bluetooth, CORBA, Java (Servlets, Swing, EJB, MIDlets), Microsoft .NET, XML, ODBC/JDBC

LANGUAGES

English: Read/Write/Speak

Hindi: Read/Write/Speak

REFERENCES

Available upon request