

Raquel Hill

Education

University of Illinois Urbana, IL

August 2003- July 2005 Post Doctoral Research Associate

Harvard University Cambridge, MA

November 2002 PhD Computer Science

- Dissertation: Sticky QoS: A Scalable Framework for Resource Reservations.
- Advisor: H.T. Kung

Georgia Institute of Technology Atlanta, GA

March 1993 MS Computer Science

June 1991 BS Computer Science with Honors

Publications

J. Al-Muhtadi, R. Hill, R. Campbell, D. Mickunas, Context and Location-Aware Encryption for Pervasive Computing Environments, to appear in the Proceedings of the 4th IEEE Conference on Security in Pervasive Computing, and Communications, March 2006, Pisa, Italy

R. Hill, S. Myagmar, R. Campbell, Threat Analysis of GNU Software Radio, *to appear in the proceedings of the 6th World Wireless Congress*, May 2005, San Francisco, CA

A. Lee, J. Boyer, C. Drexelius, P. Naldurg, R. Hill, R. Campbell, Supporting Dynamically Changing Authorizations in Pervasive Communication Systems, *to appear in the proceedings of the 2nd International Conference on Security in Pervasive Computing*, April 2005, Boppard, Germany.

R. Hill, J. Wang, K. Nahrstedt, Quantifying Non-Functional Requirements: A Process Oriented Approach, *in the Proceedings of the 12th IEEE International Requirements Engineering Conference*, Kyoto, Japan, September 2004.

J. Al-Muhtadi, R. Hill, R. Campbell, A Privacy Preserving Overlay for Active Spaces, *Ubicomp Privacy Workshop in conjunction with the Sixth International Conference on Ubiquitous Computing*, Nottingham, England, September 2004.

R. Hill, G. Sampemane, A. Ranganathan, R. Campbell, Towards a Framework for Automatically Satisfying Security Requirements, *in the proceedings of the Workshop on Specification and Automated Processing of Security Requirements in conjunction with the 19th IEEE International Conference on Automated Software Engineering*, Linz Austria, September 2004.

R. Hill, J. Wang, K. Nahrstedt, Towards a Framework for Quantifying Non-Functional Requirements, *Grace Hopper Celebration of Women in Computing*, October 2004.

- Publications**
- R. Hill, J. Al-Muhtadi, R. Campbell, A. Kapadia, P. Naldurg, A. Ranganathan, A Middleware Architecture for Securing Ubiquitous Computing Cyber Infrastructures, *5th ACM/IFIP/USENIX International Middleware Conference*, October 2004, to appear in *IEEE Distributed Systems Online*, September 2004.
- R. Hill, Sticky QoS: A Scalable Framework for Resource Reservations, Doctoral Dissertation in Computer Science, Harvard University Division of Engineering and Applied Sciences, November 2002.
- R. Hill, H.T. Kung, A Diff-Serv enhanced Admission Control Scheme, in the *Proceedings of the IEEE Global Telecommunications Conference, GLOBECOM 2001*, November, 2001.
- Submitted**
- A. Faber, Y. Sun, M. Gupta, K. Connelly, R. Hill, A. Mutsuddi, The Power of the Admin Versus the Security of the User. Submitted.
- Invited Talks**
- “Establishing a Trusted Computing Base for Software Defined Radio”, Information Security Institute, Johns Hopkins University, February 2005, Baltimore, Maryland.
- “Towards a Framework for Automatically Satisfying Security Requirements”, Department of Computer Science, Queens University, October 2004, Kingston, Ontario, Canada.
- “Overlay QoS”, Department of Computer Science, Auburn University, February 2004, Auburn, Alabama.
- “Distributed Admissions Control for Sticky QoS”, *Ninth Annual Conference for African-American Researchers in the Mathematical Sciences*, June 2003, West LaFayette, Indiana.
- “Distributed Admissions Control for Sticky QoS”. *Sixth Inform Telecommunications Conference*, March, 2002, Boca Raton, Florida.
- Panels**
- R. Hill, R. Campbell, “Understanding, Managing and Securing Ubiquitous Computing Environments”, *Grace Hopper Celebration of Women in Computing*, October 2004, Chicago, Illinois.
- Teaching**
- Lecturer, Georgia Institute of Technology**
- Spring - Summer 2003 - Introduction to Computer Engineering, ECE2030.** This course illuminates the design and operation of digital computing systems using VLSI technology. Topics include: function definition, switch and wire design, Boolean functions, combinational logic, memory, state machines, sequential logic, binary arithmetic, micro architecture, instruction sets, controller, assembly language.
- Teaching Fellow Fall 1999, Fall 2000 - Computer Networks, CS143.** Taught sections that covered topics of switch design, routing protocols, TCP/IP, queuing theory, etc. Created problems for homework assignments and exams. Assisted students with programming assignments. Graded assignments and exams.
- Spring 2000 - Network Design Projects, “Service Oriented Computing”, CS144/244.** Advised project teams and helped them to formulate ideas for their design projects.

Professional Experience **Indiana University**, Bloomington, Indiana, **Assistant Professor**, Joint Appointment with the Department of Computer Science and the School of Informatics, 08-2005 – Present

University of Illinois, Urbana, Illinois, **Post Doctoral Research Associate**, Joint Appointment with Department of Computer Science and NCSA, 08/2003 – 07/2005 - The focus of this appointment is to investigate security mechanisms and protocols to protect control information exchanged in ubiquitous environments such as smart rooms and create a security framework for control information protection.

Georgia Institute of Technology Atlanta, GA, **Lecturer**, within the School Electrical and Computer Engineering, 11/2002 – 08/2003

Harvard University, Cambridge, MA, **Research Assistant** 09/1998 – 09/2002
Designed a distributed reservation protocol and admission control algorithm that uses diff-serv styled packet markings to communicate a flow's admission status to routers along a communications path.

IBM Research , Hawthorne, NY, **Intern**, Summer 1999
Evaluated the effectiveness of *PathFinder: Pattern Based Packet Classifier* for multi layer protocol packet classification. Ported the classifier to Windows NT.

Digital Equipment Corporation, Cambridge, MA, **Intern**, Summer 1997
Designed and implemented the network interface for a video streaming application.

Nortel Networks , RTP, NC, **Member of Scientific Staff**, 08/1993 – 08/1996
TR303 Stack Evolution - Designed and implemented the messaging module (MCC) for a project that moved the communications stack from the digital switch (DMS 100/200) to the Integrated Digital Terminal (IDT). Also managed the integration of the MCC, Stack Interface, Application Interface and Object modules.

Path Protection Switching (PPS) - Designed and implemented the encoding and decoding of PPS messages for the DMS Accessnode and the management of PPS requests.

Association Control Robustness-Added a customer interface tool to provide information for customer debugging of communication problems between the DMS and the Remote Digital Terminal (RDT).

Hayes MicroComputer Products, Atlanta, GA, **Coop Student**, 03/1993-07/1993
Tested new modem equipment. Worked with software developers to address unresolved problems with their products.

Cray Research, Eagan, MA, **Intern**, Summer 1992
Designed and implemented a software update distribution tool that enables the tracking, monitoring and the automatic installation of software updates.

Cray Research, Chippewa Falls, WI, **Intern**, Summer 1991
Designed and implemented an assembly line database inventory system.

IBM Corporation, Atlanta, GA, **Co-op Student**, 06/1987-9/1990
Tested business application software and PS/2 product line. Built and maintained LANs for testing purposes.

Professional Activities

Served as Reviewer for National Science Foundation (NSF) Panels

Member of Program Committee for IEEE International Conference on Information Technology (ITCC) 2005, Pervasive Computing Track

Member of Technical Program Committee for IEEE International Conference on Communications 2006: Network Security and Information Assurance Symposium

Member of IEEE