

SAMEER KARKAL PAI, Ph.D.

301 E. 47th Street, New York, NY 10017

Email: skp27@cornell.edu Citizenship: United States Citizen

OBJECTIVE Seeking a position that will utilize my skills in research, analytical reasoning, communication and management to add to the value and growth of an organization.

EDUCATION

CORNELL UNIVERSITY

Ph.D. in Electrical and Computer Engineering

August, 2008

Ph.D. Thesis: "Co-Design of Sensor Networking Technology and Privacy Policy"

Minors: Information Science, Applied Mathematics

M.S. in Electrical and Computer Engineering

January, 2008

Graduate Advisor and Committee Chair: Dr. Stephen B. Wicker

Committee Members: Dr. Geri Gay, Dr. Zygmunt J. Haas

G.P.A.: 4.16 (4.3 = A+)

UNIVERSITY OF CALIFORNIA, BERKELEY

Graduate Exchange Scholar, Electrical Engineering and Computer Science

June, 2006 – August, 2006

Advisor: Dr. S. Shankar Sastry

November, 2006 – August, 2007

RUTGERS UNIVERSITY

B.S. with Highest Honors in Electrical and Computer Engineering

May, 2003

Rutgers School of Engineering Dean's List (1999-2003)

G.P.A.: 3.95/4.00

Graduate coursework in Electrical and Computer Engineering

Fall 2003

AWARDS

National Science Foundation IGERT Fellowship (2006-08)

Rutgers Undergraduate Research Fellowship (2002-03)

International Association of Privacy Professionals (IAPP) & KPMG Award (2007)

Donald R. Knapp Scholarship (2001-03)

UC Berkeley Phi Kappa Sigma Erdelatz Memorial Prize (2007)

Wells Scholarship (2002)

Cornell University Graduate Fellowship (2004-05)

Rutgers Class of 1925 Scholarship (2001)

HONORS

Cornell Nominee for the Dolores Zohrab Liebmann Fellowship (2007), National Science Foundation Graduate Research Fellowship Honorable Mention (2005), Three-Year Electrical and Computer Engineering Fellowship at University of Illinois at Urbana-Champaign (2004, Declined), Eta Kappa Nu, Electrical Engineering Honor Society (2001), Tau Beta Pi, Engineering Honor Society (2001), Golden Key Honor Society (2001)

EXPERIENCE

UNIVERSITY OF CALIFORNIA, BERKELEY BOALT SCHOOL OF LAW, Berkeley / San Francisco, California

CENTER FOR INFORMATION TECHNOLOGY RESEARCH IN THE INTEREST OF SOCIETY, (CITRIS)

Researcher at the Samuelson Law, Technology & Public Policy Clinic

June 2007 – August 2007

Technical Consultant

March 2008

Technical Consultant / CITRIS Development Engineer

June 2008 – September 2008

- Researching privacy policies for the use of public video surveillance networks and systems in San Francisco
- Advising the City of San Francisco on the effectiveness and efficiency of the City's camera surveillance program
- Conducted technology audits of public video surveillance cameras, networks and systems in San Francisco
- Conducted technology and policy audits of Chicago's camera surveillance program
- Assisted with research pertaining to organizational adherence to California's S.B. 27 "Shine the Light" Law
- Attended conferences and workshops on computer privacy, computer security, and computing and the law sponsored by the Berkeley Center for Law and Technology and the American Bar Association
- Collaborated with Jennifer King, Chris Hoofnagle, Maryanne McCormick, and Deirdre Mulligan

CORNELL WIRELESS INTELLIGENT SYSTEMS LABORATORY, Ithaca, New York

Graduate Research Assistant

July 2004-August 2008

- Researched wireless ad hoc sensor network design, mitigation of misbehavior in these networks using distributed trust systems, and impact of security and public policy decisions on privacy issues in sensor networks
- Researched privacy policies for the use of public video surveillance networks and systems in the city of San Francisco
- Mentored three undergraduate students and eight Master of Engineering students from Cornell and Smith College in the development of a wireless ad hoc sensor network testbed deployed in Cornell's Herbert F. Johnson Museum of Art
- Initiated and helped to direct a multi-institution, cross-disciplinary undergraduate/Master of Engineering project in sensor network design and deployment involving the disciplines of Art, Computer and Information Science, Electrical and Computer Engineering, and Law
- Worked as a part of the NSF Team for Research in Ubiquitous Secure Technologies (TRUST, www.truststc.org) in collaboration with principle investigators Prof. Pamela Samuelson, Dr. Shankar Sastry, and Dr. Stephen Wicker
- Completed nonlinear systems training in complex networks, gene regulation, machine/organism locomotion/manipulation, and pattern formation with Dr. John Guckenheimer, Dr. Chris Myers, Dr. James Sethna, and Dr. Steven Strogatz
- Completed a training course for the IAPP Certified Information Privacy Professional (CIPP) exam

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UNIVERSITY OF CALIFORNIA, BERKELEY ROBOTICS AND INTELLIGENT MACHINES LABORATORY
NATIONAL SCIENCE FOUNDATION, TRUST, SCIENCE AND TECHNOLOGY CENTER, Berkeley, California
Graduate Student Researcher

June 2006 – August 2006

November 2006 – August 2007

- Researched mitigation of misbehavior in sensor networks using distributed trust systems and conducted game theoretic analysis of distributed trust/reputation systems
- Researched the impact of security and public policy decisions on privacy issues in sensor networks
- Conducted wireless sensor networks research under the guidance of Dr. Shankar Sastry and Dr. Stephen Wicker
- Collaborated with Professor Deirdre Mulligan on research relating to public policy on privacy in technology

CENTER FOR ADVANCED INFORMATION PROCESSING (CAIP), Piscataway, New Jersey

C.A.I.P. Researcher

December 2003-July 2004

- Researched delay and throughput in single and multi-hop wireless networks
- Made a performance analysis of the 802.11 Medium Access Control layer with a focus on the hidden station effect under the guidance of Dr. John Sucec and Dr. Ivan Marsic

Undergraduate Researcher in the Visualization Laboratory (VizLab)

May 2001-July 2003

- Researched interactive 3-D navigation of media streams based on spatial position with Dr. Steele Arbeeny and Dr. Deborah Silver and aided in the development process of the IMAGO system
- Helped develop, process and test 3-D VRML terrain models using airplane flyby pictures, GIS and CAD data

MOTOROLA, INC., South Plainfield, New Jersey

PCS Sector, Software Engineer (Engine and Call Performance Team)

May 2002-August 2003

- Designed, developed and deployed an automated voice recognition testing suite, a memory block parsing tool, and a cellular phone software/hardware interface tool (Panther Terminal) for TDMA, CDMA and GSM cellular phones
- Inspector/Coder/Reader in code and document inspections, which follow the Fagan process
- Conducted phone field testing and tracked call performance in North America
- Trained in Six Sigma, Digital Six Sigma Fundamentals, and multiple cellular phone standards

TUTORING

RUTGERS OFFICE OF DISABILITIES SERVICES, New Brunswick, New Jersey

Note-taker

2003-04

- Assisted students with disabilities with the task of taking notes in lectures for Topics in Mathematics, Differential Equations, Bio-fluid Mechanics and Engineering Economics

RUTGERS LEARNING RESOURCE CENTER, Piscataway, New Jersey

Peer Tutor

2001-02

- Tutored students in Mathematics, Physics and Economics

RELEVANT SKILLS

Operating Systems: Windows, UNIX, LINUX, TinyOS

Programming Languages: C/C++, Python, Visual Basic, basic Java, FORTRAN 90/95, VHDL, basic nesC

Web: HTML, VRML, PHP and mySQL

Software Applications: Microsoft Office, Adobe Suite, LaTeX, Maple, Matlab, Spice, Rational Rose, ClearCase, Subversion

Simulation Tools: basic OPNET and ns2

Standards: IEEE 802.11, IEEE 802.15.4, ANSI IS-54, IS-136, GSM, CDMA basics

Languages: English, intermediate Spanish, intermediate Konkani

Other: Westlaw and Lexis-Nexis Database Search

COURSEWORK

Logic and Reasoning • Calculus • Linear Algebra • Multivariable Calculus • Differential Equations • Engineering Mechanics • Linear Systems • Numerical Methods for Nonlinear Systems • Nonlinear Dynamics and Chaos • Real Analysis • Probability • Stochastic Processes • Information Theory • Control Theory • Economic Principles & Problems • Money and Banking • Engineering Economics • Game Theory • Applications of Game Theory and Operations Research to IT • Algorithmic Game Theory • Principles of Electrical Engineering • Electronic Devices • Digital Electronics • Digital Logic Design • Digital System Design • Computer Architecture • Digital Signal Processing • Acoustics • Principles of FORTRAN • Principles of C++ • Data Structures • Operating Systems • Communication Networks • Wireless Networks • Mobile Computing • Software Engineering • Human-Computer Interaction Design • Coding for Policy and Regulating Design • Psychology • Abnormal Psychology • Social Network Analysis and Social Processes • Social Networks

PROFESSIONAL ACTIVITIES

Reviewer for IPSN'08, NetCri'07, ISWPC'07, DCOSS'06, IPSN'06, ICC'05, ICDCS'05, SECON'05, IEEE TDSC
IEEE Journal on Selected Areas in Communications, and ACM Transactions on Sensor Networks, Provided
Logistical and Program Support for TRUST WISE 2008 Conference

ACTIVITIES

ASHA for Education at Cornell (2005-2006) • Engineering Governing Student Association (2004) • Encourage Young Engineering Students (EYES) Club (2004) • IEEE Student Member • Cornell Engineering Open House Representative

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PUBLICATIONS "An Evaluation of the Effectiveness of San Francisco's Community Safety Cameras," (co-author) September/October 2008.

S. Pai "Co-Design of Sensor Networking Technology and Privacy Policy," Ph.D. Dissertation, Cornell University, May 2008.

S. Pai, M. Meingast, T. Roosta, S. Bermudez, S. Wicker, D. Mulligan, and S. S. Sastry, "Confidentiality in Sensor Networks: Transactional Information," Submitted, October 2006, Revised August 2007, IEEE Security and Privacy Magazine; to appear in the July/August 2008 issue.

T. Roosta, S. Pai, P. Chen, S. S. Sastry, S. Wicker, "The Inherent Security of Routing Protocols in Ad-Hoc and Sensor Networks," In the 50th Annual IEEE Global Communications Conference (IEEE GLOBECOM'07), November 2007, Washington, DC.

M. Meingast, S. Pai, S. Wicker, S. S. Sastry, "Privacy in Camera Networks, A Technical Perspective," EECS Department, University of California, Berkeley, Technical Report UCB/EECS-2007-94, July 2007.

S. Pai, T. Roosta, S. Wicker, and S. S. Sastry, "Using Social Network Theory Towards Development Of Wireless Ad hoc Network Trust," In the 3rd IEEE International Symposium on Security in Networks and Distributed Systems (SSNDS'07), May 2007, Niagara Falls, Ontario, Canada.

S. Pai, P. Kuryloski, H. Yip, S. Yenamandra, S. Wicker, K. Boehner, and G. Gay, "Networks Of Sensors In Public Spaces: Combining Technology With Art," In the IEEE International Symposium on Ubiquitous Computing and Intelligence (UCI'07), May 2007, Niagara Falls, Ontario, Canada.

P. Kuryloski, S. Pai, S. Wicker, Y. Xue, "MedSN System for In-Home Patient Monitoring: Architecture, Privacy and Security" In the Joint Conference on High Confidence Medical Devices, Software, and Systems (HCMDSS'07) and Medical Device Plug-and-Play Interoperability (MD PnP'07), June 2007, Boston, MA.

F. Hung, S. Pai, and I. Marsic, "Performance Modeling and Analysis of the IEEE 802.11 Distributed Coordination Function In Presence Of Hidden Stations," In the IEEE Military Communications Conference (MILCOM'06), October 2006, Washington, DC.

S. Pai, G. Gay, S. Wicker, K. Boehner, "A Sensor Network Testbed in a Public Museum Space: Technology, Art, and the Privacy Horizon," To Be Submitted.

S. Pai, T. Roosta, S. Wicker, S. S. Sastry, "Game Theoretic Modeling of Trust in Networks of Bayesian-Learning Sensors," To Be Submitted.

S. Pai, P. Kuryloski, B. Kot, G. Gay, and S. Wicker, "Simulating Dynamic Socio-Techno Networks," To Be Submitted.

POSTERS

"Inherent Security of Routing Protocols in Ad Hoc and Sensor Networks," co-author on poster in NSF TRUST STC Fall Conference, October 2007, Ithaca, NY & GLOBECOM'07, November 2007, Washington, DC.

"Secure Cooperative Routing in Sensor Networks," co-author on poster in NSF TRUST STC Fall Conference, October 2007, Ithaca, NY.

"Preserving Privacy In Wireless Sensor Network-based Information Systems," co-author on poster in NSF TRUST STC Spring Conference, March 2007, Berkeley, CA.

"Privacy in Sensor Networks: Transactional Confidentiality," co-author on poster in Berkeley EECS Annual Research Symposium & NSF TRUST STC Spring Conference, February & March 2007, Berkeley, CA.

"MedSN System For In Home Patient Monitoring," co-author on poster in NSF TRUST STC Spring Conference, March 2007, Berkeley, CA.

"A Sensor Network Testbed in a Public Museum Space," co-author on poster in Berkeley EECS Annual Research Symposium & NSF TRUST STC Spring Conference, February & March 2007, Berkeley, CA.

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"Reputation Systems For Sensor Networks: Towards Intelligent Design and Game Theoretic Analysis," co-author on poster in Berkeley EECS Annual Research Symposium & NSF TRUST STC Spring Conference, February & March 2007, Berkeley, CA.

"TRUST Patient Portal Project," co-author on poster in the NSF TRUST STC Site Visit, April 2006, Berkeley, CA.

"Combining Technology with Art," co-author on poster in the NSF TRUST STC Winter Conference, January 2006, Washington D.C.

"TRUST Patient Portal Project: Real Time Patient Monitoring," co-author on poster in the NSF TRUST STC Winter Conference, January 2006, Washington D.C.

"Social Issues in Information Technology for Healthcare," co-author on poster in the NSF TRUST STC Winter Conference, January 2006, Washington D.C.

"Virtual Campus Project," author on poster in Rutgers Undergraduate Research Fellow Poster Presentation, April 2003, New Brunswick, New Jersey.

TALKS

"Using Social Network Theory Towards Development Of Wireless Ad Hoc Network Trust," talk given at NSF TRUST STC Fall Conference, October 11, 2007

"Co-design of Sensor Networking Technology and Privacy Policy," talk given at the IGERT Fall Seminar Meeting, September 25, 2007, Ithaca, NY.

"Networks Of Sensors In Public Spaces: Combining Technology With Art," talk given at the IEEE International Symposium on Ubiquitous Computing and Intelligence (UCI'07), May 22, 2007, Niagara Falls, Ontario, Canada.

"Using Social Network Theory Towards Development Of Wireless Ad hoc Network Trust," talk given at the 3rd IEEE International Symposium on Security in Networks and Distributed Systems (SSNDS'07), May 21, 2007, Niagara Falls, Ontario, Canada.

"Sensor Network Privacy and Security," (with Marci Meingast and Tanya Roosta) talk given at NSF TRUST STC Spring Conference, March 20, 2007, Berkeley, CA.

"Privacy and Trust Considerations in Wireless Ad Hoc Sensor Networks," talk given at the Cornell Wireless Networks Laboratory, November 8, 2006, Ithaca, NY.

"Privacy in Sensor Networks," talk given at the Privacy Implications of Trustworthy Information Systems Workshop, Berkeley Center for Law and Technology (BCLT), October 5, 2006, Berkeley, CA.

"Privacy and Security in Wireless Ad Hoc Sensor Networks," talk given at the IGERT Fall Seminar Meeting, September 18, 2006, Ithaca, NY.

"Combining Technology with Art: Deployment Of A Sensor Network In A Public Museum Space," talk given at the NSF TRUST STC Winter Conference, January 9, 2006, Washington D.C.

REFERENCES

References and recommendations will be provided upon request.

Dr. Stephen B. Wicker
Cornell University
Professor, Department of Electrical and Computer Engineering
386 Rhodes Hall
Ithaca, NY 14853
wicker@ece.cornell.edu

Dr. Geri K. Gay
Cornell University
Katherine J. Bissett Professor, Departments of Communication and Computer and Information Science
339 Kennedy Hall
Ithaca, NY 14853
gkg1@cornell.edu

Dr. S. Shankar Sastry
University of California, Berkeley
Professor and Dean of Engineering
Dean's Office, 320 McLaughlin Hall # 1700
Berkeley, CA 94720-1700
sastry@eecs.berkeley.edu

Prof. Deirdre K. Mulligan
University of California, Berkeley
Co-Director, Berkeley Center for Law and Technology
Professor, Boalt Law School and School of Information
Berkeley, CA 94720-1700
dmulligan@law.berkeley.edu