SCOTT GARRISS

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OBJECTIVE

To research and design software systems that utilize cutting-edge mobility, security, or virtualization technology

EDUCATION

Carnegie Mellon University, Pittsburgh, PA
Ph.D. in Electrical and Computer Engineering, expected May 2008
Thesis: Efficient, Usable Theorem Proving for Distributed Access-Control Systems
Advisors: Dr. Michael K. Reiter, Dr. Lujo Bauer
GPA: 3.91 / 4.00

The University of Texas, Austin, TX
B.S. Electrical Engineering with Highest Honors, August 2002
GPA: 3.99 / 4.00

RESEARCH EXPERIENCE

Carnegie Mellon University, Pittsburgh, PA
Research Assistant, Electrical & Computer Engineering Dept., August 2002 - Present

Performed research for the *Grey* project, which is a distributed access-control system where users gain access to office doors and computer accounts through their mobile phone. The novelty of Grey lies in its use of formal logic to implement access control policy, and the fact that it has been deployed for two years and has 30 active users. In Grey, each access must be accompanied by a formal proof that the access is consistent with access-control policy; the mechanism for constructing these proofs is the focus of my thesis.

- Worked as part of a team of faculty, staff, and graduate students to develop, test, and maintain software for the Grey project
- Designed a distributed proof-construction algorithm that makes fewer network requests than previous centralized approaches
- Addressed user complaints about perceived speed by designing a proof-construction algorithm that utilizes pre-computed state to drastically decrease the computation required at the time of access
- Implemented the above algorithms for the Nokia N70 mobile phone, and deployed them as part of the Grey system
- Formally showed that the performance improvements offered by the above algorithms do not hinder the algorithm's ability to find a proof when access is authorized
- Proposed and evaluated a technique for detecting policy misconfigurations using association rule mining

IBM Research, Hawthorne, NY
Research Intern, Summer 2006

- Designed protocol for establishing trust in a kiosk using a mobile phone, a Trusted Platform Module, and x86 support for establishing a dynamic root of trust
- Implemented prototype using a Nokia N70 and a PC running the Xen hypervisor

Intel Research, Pittsburgh, PA
Research Intern, Summer 2005

- Contributed heavily to the design and analysis of a whitelisting protocol that automatically accepts email from friends and friends-of-friends before it can be incorrectly flagged as spam
- Implemented client and server prototypes in C++ using the SFS toolkit

TEACHING EXPERIENCE

Carnegie Mellon University, Pittsburgh, PA
Teaching Assistant, Applied Cryptography, Spring 2007
Teaching Assistant, Introduction to Security and Policy, Fall 2004
Teaching Assistant, Computer Security, Fall 2003

- Led review sessions and held weekly office hours
- Created and graded homework and exams

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WORK EXPERIENCE

National Instruments, Austin, TX
Hardware Engineering Intern, Summer 2002
- Designed and prototyped the hardware for a small-scale embedded system
- Developed firmware for STMicro ST92 in embedded C

Software Engineering Intern, January 2000 - August 2001
- Developed test suites for four National Instruments IO controllers using C++
- Designed a modular software architecture to aid in rapid development of future test suites

PUBLICATIONS

Efficient Proving for Practical Distributed Access-Control Systems.
L. Bauer, S. Garriss, and M. K. Reiter. 12th European Symposium on Research in Computer Security (ESORICS), Sept. 2007.

Towards Trustworthy Kiosk Computing.
S. Garriss, R. Cáceres, S. Berger, R. Sailer, L. van Doorn, and X. Zhang. 8th IEEE Workshop on Mobile Computing Systems and Applications (HotMobile), Feb. 2007.

Re: Reliable Email.
S. Garriss, M. Kaminsky, M. Freedman, B. Karp, D. Mazières, and H. Yu. 3rd Symposium on Networked Systems Design & Implementation (NSDI), May 2006.

Device-enabled Authorization in the Grey system.
L. Bauer, S. Garriss, J. M. McCune, M. K. Reiter, J. Rouse, and P. Rutenbar.
8th Information Security Conference (ISC), Sept. 2005.

Distributed Proving in Access-Control Systems.
L. Bauer, S. Garriss, and M. K. Reiter. 2005 IEEE Symposium on Security and Privacy. May 2005.

UNDER SUBMISSION

Detecting and Resolving Policy Misconfigurations in Access-Control Systems.
L. Bauer, S. Garriss, and M. K. Reiter.

Trustworthy and Personalized Computing on Public Kiosks.
S. Garriss, R. Cáceres, S. Berger, R. Sailer, L. van Doorn, and X. Zhang.

SKILLS

Programming Languages: Java, C/C++, Prolog, Perl
Environments: Linux, Windows, Symbian Series 60, Embedded (Motorola 6812, STMicro ST92)

HONORS

Laboratory for Computer Science Fellowship, August 2002 - present
Cockrell Scholarship, National Merit Scholarship, 1998-2002
Eta Kappa Nu Electrical Engineering Honor Society
Tau Beta Pi National Engineering Honor Society

LEADERSHIP

Event Organizer, Cylab Social Committee, 2007
Vice President, Graduate Student Assembly, 2004
ECE Department Representative to Graduate Student Assembly, 2003, 2005-present
Head Cook, Taos Co-op Dormitory, August 2001 - August 2002
Chair, National Instruments Intern Activity Committee, Fall 2000