

Xinguang (Steve) Sheng

CONTACT INFORMATION

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EDUCATION

Carnegie Mellon University, Pittsburgh, Pennsylvania

Ph.D. Engineering and Public Policy

September 2009

- Dissertation: *A Policy Analysis of Phishing Countermeasures*
- Advisor: Prof. Lorrie Cranor

M.S. Engineering and Public Policy

December 2006

University of Pennsylvania, Philadelphia, Pennsylvania

M.S. Computer and Information Science (GPA: 3.9)

May 2002

B.S. Computer Science and Engineering, Magna Cum Laude

May 2001

RESEARCH EXPERIENCE

Carnegie Mellon University, Pittsburgh, Pennsylvania

Graduate Researcher

August 2004 – August 2009

Policy Analysis for Phishing Countermeasures

- Analyzed the phishing lifecycle both from an attacker's and defender's perspective.
- Developed a set of anti-phishing recommendations for stakeholders.
- Interviewed 31 experts from law enforcement, academia, service providers, and registries to validate and prioritize these recommendations.

Anti-phishing Phil Game

- Funded by the National Science Foundation to improve users' trust experience online
- Initiated and led weekly meetings for 2 months with 5 colleagues to design the game.
- Developed the prototype game and supervised a designer to implement it.
- Evaluated the game with a user study of 6000 users, the game improved novice Internet users' ability to detect phishing scams from 29% to 77%.
- **Impact:** The game was named No.9 of the top 25 radical research projects by Network World in 2008, was played over 200,000 rounds between 9/07 - 9/08, written in over 30 news articles, commercialized by Wombat Securities, being used in the US State Department, US air force, Department of Energy, and translated into three languages.

Bringing Municipal Wifi to Pittsburgh

- Developed a strategy to spread broadband wireless Internet access throughout the city.
- Collaborated with 3 colleagues and managed a team of 20 students.
- Designed a wireless network and estimated its operating costs for 6 years, developed a regression model to predict revenues based on city demographics.
- Identified 5 potential business models, and performed a cost benefit analysis and risk analysis for each model.
- Concluded that the wholesale retail model best achieves the city's objective, but financial risk existed, and suggested the city provide financial incentives to the wholesaler.
- Presented the recommendations to the City Council, published a paper at the 35th Telecommunications Research and Policy conference (Washington DC 2007).

Toolkit for Automated Privacy Policy Analysis

- Collaborated with one CMU colleague and 3 researchers from IBM.
- Created a software toolkit to collect and analyze machine readable privacy policies.
- Used the toolkit to survey 300 privacy policies of 50 US financial institutions posted online

between 1999 and 2005.

- Written and published the paper in the Journal of Law and Policy for the Information Society.

PROFESSIONAL
EXPERIENCE

Internet Corporation for Assigned Names and Numbers (ICANN)

Senior Technical Analyst, Policy Department

Sep 2009 – Present

- Support projects of ICANN's Security and Stability Advisory Committee (SSAC)
- Provide research support for projects in the policy department

Carnegie Mellon University

Project Manager, Engineering and Public Policy Senior Project

Sep 2006 – Jan 2007

- Designed course materials for the class
- Shared responsibilities for lectures, exams homework assignments, and grades

University of Pennsylvania

Data Manager, School of Medicine

Jun 2002 – Jul 2004

- Developed and managed clinical databases for Alzheimer's disease research.
- Initiated and led the center's computing system upgrade effort.
- Participated in writing research grant proposals.

PEER-REVIEWED
PUBLICATIONS

Sheng, S., Holbrook, M., Kumaraguru, P., Downs, J. and Cranor, L. 2010. Who Falls for Phish? A Demographic Analysis of Phishing Susceptibility and Effectiveness of Interventions. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (Atlanta, Georgia, USA, April 22 - 27, 2010). CHI 2010.

Sheng, S., Kumaraguru, P., Acquisti, A., Cranor, L., and Hong, J. 2009. Improving phishing countermeasures: An analysis of expert interviews. In Proceedings of the fourth eCrime Researchers Summit (eCrime 2009), October 15-16, 2009, Tacoma, WA.

Sheng, S., Wardman, B., Warner, G., Cranor, L., Hong, J., and Zhang, C. An empirical analysis of phishing blacklists. In Proceedings of the 6th Conference in Email and Anti-Spam (Mountain view, CA, July 16 - 17 2009). CEAS 2009.

Sheng, S., Magnien, B., Kumaraguru, P., Acquisti, A., Cranor, L. F., Hong, J., and Nunge, E. 2007. Anti-Phishing Phil: the design and evaluation of a game that teaches people not to fall for phish. In Proceedings of the 3rd Symposium on Usable Privacy and Security (Pittsburgh, Pennsylvania, July 18 - 20, 2007). SOUPS '07, vol. 229. ACM, New York, NY, 88-99.

Sheng, S. and Cranor, L. 2006. An Evaluation of the Effectiveness of US Financial Privacy Legislation Through the Analysis of Privacy Policies. In *I/S: A Journal of Law and Policy for the Information Society*, Volume 2, Number 3, Fall 2006, pp. 943-979.

Downs, J., Holbrook, M., **Sheng, S.**, and Cranor, L. 2010. Who Falls for Phish? A Demographic Analysis of Phishing Susceptibility and Effectiveness of Interventions. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (Atlanta, Georgia, USA, April 22 - 27, 2010). CHI 2010.

Kumaraguru, P., **Sheng, S.**, Acquisti, A., Cranor, L., and Hong, J. 2009 Teaching Johnny not fall for phish. In *Transactions on Internet Technology*, 2009

Kumaraguru, P., **Sheng, S.**, Acquisti, A., Cranor, L., and Hong, J. 2008. Lessons from a real world evaluation of anti-phishing training. In Proceedings of the third eCrime Researchers Summit (eCrime 2008), October 15-16, 2008, Atlanta, GA

Cranor, L., Egelman, S., **Sheng, S.**, McDonald, A., and Chowdhury, A. 2008. P3P Deployment on Websites. In the Journal of Electronic Commerce Research and Applications (ECRA), December

2008.

Kumaraguru, P., **Sheng, S.**, Acquisti, A., Cranor, L., and Hong, J. 2007. Getting Users Pay Attention to Anti-Phishing Education: Evaluation of Retention and Transfer. In *Proceedings of 2007 eCrime Research Summit*, 4-5 October 2007, Pittsburgh, PA

Peha, J., Gilden, B., Savage, R., **Sheng, S.**, Yankiver, B. 2007. Finding an Effective Sustainable Model for a Wireless Metropolitan-Area Network: Analyzing the Case of Pittsburgh. In *The 35rd Research Conference on Communication, Information and Internet Policy (TPRC)*, Sep 29 - Sep 30, 2007

POSTERS

Sheng, S., L. Broderick, J. Hyland, and C. Koranda. Why Johnny Still Cant Encrypt: Evaluating the Usability of Email Encryption Software. In Proceedings of the 6th Symposium on Usable Privacy and Security: SOUPS 06, 2006.

P. Kumaraguru, S. Sheng, A. Acquisti, L. Cranor, and J. Hong. Anti-Phishing Education. In the Proceedings of The International Conference on E-Learning in the Workplace (ICELW), 2008.

Lorrie Faith Cranor, Aleecia M. McDonald, Serge Egelman, and **Steve Sheng**. 2006 Privacy Policy Trends Report. CyLab Privacy Interest Group, January 31, 2007

PRESENTATIONS AND INVITED TALKS

Invited talk, "Phishing Countermeasures: A policy Analysis ," National Chiao Tung University, Taipei Taiwan ROC, Jan 2010

Oral Presentation, "Improving Phishing Countermeasures: An Analysis of Expert Interviews," eCrime 2009 (electronic crime research conference), Tacoma, WA, October 2009

Oral Presentation, "An Empirical Analysis of Phishing Blacklists," CEAS 2009 (Conference on Email Anti Spam), Mountain View, CA, June 2009

Invited talk, "Effectiveness of email filtering and web warning for phishing," Invited talk. 2008 Anti-Phishing working group general meeting, Atlanta GA, October 2008.

Invited talk, "Teaching Johnny not to fall for phish," 2008 Counter eCrime Operations Summit, Tokyo Japan, May 2008

Invited talk, "Overview of Supporting Trust decisions," (IIS) Institute of Information Science in Academia Sinica, Taipei Taiwan ROC, Jan 2008

PROGRAM COMMITTEES AND REVIEWERS

- ACM Communications 2006 - 2007 (Reviewer)
- Journal of Information Systems Frontiers, 2010 (Reviewer)
- Conference on Email Anti Spam 2010 (Program Committee)
- Electronic Crime Research Conference 2010 (Program Committee)

MEMBERSHIP

- Association for Computing Professionals (ACM)
- International Electrical Engineering (IEEE)

SELECTED NEWS ARTICLES

- "Don't just talk about security - do something!" by M.E. Kabay, Network World Security Strategies Alert, January 22, 2009.
- "Play Anti-Phishing Phil And Learn How To Spot Phishing Attacks," by Chris Walters, Consumerist, Jan 2 2009
- "25 Radical Network Research Projects You Should Know About," NetworkWorld, April 2008 (Anti-phishing Phil was No. 9)
- "CMU Develops Scam-Busting Online Game," CNet News, September 2007
- "Web Tool Detects Something Phishy," Pittsburgh Tribune Review, December 2007
- "Carnegie Mellon's Online Game Helps People Recognize Internet Scams," by Regina Sass, Associated Press, 28 September 2007.
- "CMU Group Discusses City's Wi-Fi Options," Pittsburgh Tribune Review, February 2007
- "Carnegie Mellon Engineering Students Tapped To Help City Develop Broadband Wireless Strategy," by Chriss Swaney, Carnegie Mellon University, February 8 2007 '

AWARDS

Portugal Fellow 2008, for research in anti-phishing technology
Magna Cum Laude, 2001