

Adam J. Aviv

CONTACT INFORMATION Adam J. Aviv
Computer Science Department
Swarthmore College
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RESEARCH INTERESTS **Computer Security; Networks and Network Security; Smartphone Security; Privacy;** Usable Security; Computer Science and Computer Security Education.

EDUCATION & PROFESSIONAL EXPERIENCE

United States Naval Academy, Annapolis, MD USA

Assistant Professor of Computer Science
August 2013 - Present

- Research: Computer and Network Security, Smartphone Security
- Teaching: SI-110 Introduction to Cyber Security Technical Foundations (Fall 2013)

Swarthmore College, Swarthmore, PA USA

Visiting Assistant Professor of Computer Science
September 2012 - August 2013

- Teaching: CS-43 Computer Networks (Fall 2012)
CS-71 Software Engineer: Mobile Development (Spring 2013)
CS-35 Data-Structures and Algorithms (Spring 2013)

University of Pennsylvania, Philadelphia, PA USA

Ph. D., in Computer and Information Science
September 2007 - August 2012

- Advisor: Professors Jonathan M. Smith and Matt Blaze
- Area of Study: Computer, Network and Smartphone Security

M.S.E, Computer and Information Science
September 2007 - December 2009

- Advisor: Professor Jonathan M. Smith
- Area of Study: Computer and Network Security

AT&T Labs Research, Florham Park, NJ USA

Summer Intern 2011 and 2012
No-Cost Collaborator: August 2011 - Present

- Mentors: Trevor Jim, Shobah Venkataraman and Oliver Spatscheck
- Area of Study: Mobile and Smartphone Security

Columbia University, New York, NY USA

B.S., Computer Science
September 2003 - May 2007

- Advisor: Professor Angelos Keromytis

REFEREED
PUBLICATIONS

1. John Sonshak, **Adam J. Aviv**, Jonathan M. Smith. *Bridging the Data Gap: Data Related Challenges in Evaluating Large Scale Collaborative Security Systems*. To Appear in in the 6th Workshop on Cyber Security Evaluation and Testing (CSET'13). August, 2013.
2. **Adam J. Aviv**, Ben Sapp, Matt Blaze, and Jonathan M. Smith. *Practicality of Accelerometer Side-Channel on Smartphones*. Annual Computer Security Applications Conference (ACSAC'12). December, 2012.
3. **Adam J. Aviv**, Micah Sherr, Matt Blaze, and Jonathan Smith. *Privacy-Aware Message Exchanges for Geographically Routed Human Movement Networks*. Computer Security - ESORICS 2012. Pg. 181–198. September, 2012.
4. **Adam J. Aviv**, Vin Mannino, Thanat Owlarn, Seth Shannin, Kevin Xu, and Boon Thau Loo. *Experiences in teaching an educational user-level operating systems implementation project*. SIGOPS Oper. Syst. Rev. 46, 2 (July 2012), 80-86.
5. **Adam J. Aviv** and Andreas Haeberlen. *Challenges in Experimenting with Botnet Detection Systems*. In proceedings of the 4th Workshop on Cyber Security Experimentation and Test (CSET'11). August 8, 2011.
6. Andrew West, **Adam J. Aviv**, Jian Chang, and Insup Lee. *Spam Mitigation using Spatio-Temporal Reputation from Blacklist History*. In proceedings of the 26th Annual Computer Security Application conference (ACSAC'10). December, 2010.
7. **Adam J. Aviv**, Micah Sherr, Matt Blaze, and Jonathan M. Smith. *Evading Cellular Data Monitoring with Human Movement Networks*. In proceedings of the 5th Usenix Workshop on Hot Topics in Security (HotSec'10). August 11, 2010.
8. **Adam J. Aviv**, Katherine Gibson, Evan Mossop, Matt Blaze, Jonathan M. Smith. *Smudge Attacks on Smartphone Touch Screens*. In the proceedings of the 4th Usenix Workshop on Offensive Technologies (WOOT'10). August 10, 2010.
9. Jason Reed, **Adam J. Aviv**, Daniel Wagner, Andreas Haeberlen, Benjamin Pierce, and Jonathan M. Smith. *Differential Privacy for Collaborative Security*, In the Proceeding of the Third European Workshop on System Security (EuroSec '10). March, 2010. Paris, France.
10. Andrew G. West, **Adam J. Aviv**, Jian Chang, Vinayak S. Prabhu, Matt Blaze, Sampath Kannan, Insup Lee, Jonathan M. Smith, and Oleg Sokolsky. *QuantM: A Quantified Trust Management System*. Proceedings of the Second European Workshop on System Security (EuroSec '09). pg. 28-35. 31 March 2009. Nuremberg, Germany.
11. **Adam Aviv**, Pavol Cerný, Sandy Clark, Eric Cronin, Gaurav Shah, Micah Sherr, and Matt Blaze. *Security Evaluation of ES&S Voting Machines and Election Management System*. Usenix EVT '08: Electronic Voting Technology Workshop, July 28-29, 2008.
12. Maritza L. Johnson, Chaitanya Atreya, **Adam J. Aviv**, Steven M. Bellovin, and Gail E. Kaiser. *RUST: A Retargetable Usability Testbed for Web Site Authentication Technologies*. Usenix UPSEC '08: Usability, Psychology, and Security, 2008

13. **Adam J. Aviv**, Michael E. Locasto, Shaya Potter, and Angelos D. Keromytis. *SSARES : Secure Searchable Automated Remote Email Storage*. In Proceedings of the 23rd Annual Computer Security Applications Conference (ACSAC'07), pp. 129 - 138. December 2007, Miami Beach, FL.

NON-REFEREED
PUBLICATIONS

1. **Adam J. Aviv**. *Security Side Channels Enabled by Smartphone User Interaction*. Ph.D. Thesis, University of Pennsylvania. October, 2012.
2. Daniel Kim, Kevin Su, Andrew G. West, and **Adam J. Aviv**. *CleanURL: A Privacy Aware Link Shortener*. University of Pennsylvania Technical Report MS-CIS-12-12. July, 2012.
3. **Adam J. Aviv**, Vin Mannino, Thanat Owlarn, Seth Shannin, Kevin Xu, and Boon Thau Loo. *Experiences in Teaching an Educational User-Level Operating Systems Implementation Project*. Technical Report MS-CIS-12-02. University of Pennsylvania. January, 2012.
4. **Adam J. Aviv**, Guarav Shah, Matt Blaze. *Steganographic Timing Channels*. Technical Report MS-CIS-11-18. University of Pennsylvania. Posted December, 2011.
5. **Adam J. Aviv**. Detection of Peer-to-Peer Botnets. Adam J. Aviv. In Partial Fulfillment of the University of Pennsylvania's WPE-II Requirement. March 16, 2011.
6. **Adam J. Aviv**, Micah Sherr, Matt Blaze, Jonathan M. Smith. *Moving Targets: Geographic Routed Human Movement Networks*. Technical Report, MS-CIS-10-12. University of Pennsylvania. Posted March 2010.
7. Andrew G. West, **Adam J. Aviv**, Jian Chang, and Insup Lee. *Mitigating Spam Using Spatio-Temporal Reputation*. Technical Report MS-CIS-10-04, University of Pennsylvania. Posted February, 2010.
8. Patrick McDaniel, Matt Blaze, and Giovanni Vigna (Team Leads) et al.. *EVEREST: Evaluation and Validation of Election-Related Equipment, Standards and Testing*. Part of the Ohio Secretary of State EVEREST Review of electronic voting machines. December 2007
9. **Adam J. Aviv**, Michael E. Locasto, Shaya Potter, and Angelos D. Keromytis. *SSARES : Secure Searchable Automated Remote Email Storage*. In the Columbia Computer Science Student Research Symposium, Fall 2006.

TEACHING
EXPERIENCE

1. **Instructor**: Data-Structures and Algorithms, Spring 2013, CS 35 (Swarthmore College)
2. **Instructor**: Software Engineering: Mobile Development, Spring 2013. CS 71 (Swarthmore College)
3. **Instructor**: Computer Networks, Fall 2012. CS 43 (Swarthmore College)
4. Head TA: Operating Systems, Fall 2011. CIS 380 (University of Pennsylvania)

5. **Instructor:** Python Programming, Spring 2010. CIS 192. (University of Pennsylvania)
6. Head TA: Operating System, Fall 2010, CIS 380. (University of Pennsylvania)
7. **Instructor:** Introduction to Python, Spring 2009. CIS 39904. (University of Pennsylvania)
8. Head TA: Operating System, Fall 2009, CIS 380. (University of Pennsylvania)
9. Grader: Introduction to Python, Spring 2008. CIS 39904. (University of Pennsylvania)
10. TA: Operating System, Fall 2008, CIS 380/381. (University of Pennsylvania)
11. TA: Introduction to Computer Science, Spring 2007, COMS W1001. (Columbia University)
12. TA: Introduction to Computer Science, Fall 2006, COMS W1001. (Columbia University)

PROFESSIONAL
SERVICE

1. **Program Committee**, 2013 Annual Computer Security Applications Conference
2. External Reviewer, IEEE Security and Privacy Magazine
3. External Reviewer, ACM Transactions on Mobile Computing
4. External Reviewer, 2013 Conference on Computer and Communication Security (CCS 2013)
5. External Reviewer, 2013 Symposium on Privacy Enhancing Technologies (PETS 2013)
6. **Program Committee**, 2013 USENIX Workshop on Cyber Security Experimentation and Test (CSET)
7. External Reviewer, ACM SIGMOD Demo 2012
8. External Reviewer, 13th International Conference on Ubiquitous Computing (UbiComp 2011)
9. External Reviewer, 16th Conference on Computer and Communication Security (CCS 2009)
10. External Reviewer, 18th USENIX Security Symposium (Security 2009)
11. External Reviewer, 28th Conference on Computer Communications (Infocom 2009)
12. External Reviewer, 17th USENIX Security Symposium (Security 2008)

STUDENT
RESEARCH
ADVISING

1. *Security Perception Measures for Android Password Patterns*, with student Dane Fichter and Aashish Srinivas. Independent research project. Swarthmore College. 2012 - present.
2. *Return Oriented Programming Defenses*, with student Caleb Smith. Independent research project. Swarthmore College. 2012 - present.
3. *CleanURL: A Privacy Aware Link Shortener*, with students Daniel Kim and Kevin Su. Co-advised Senior Research Project with Andrew West. Georgetown University. 2011/2012 school year.
4. *Panda People: Location Leakage in Twitter*, with student Kate Michel. Co-advised Senior Research Project with Prof. Micah Sherr. Georgetown University. 2011/2012 school year.
5. *Tablet Acoustic Side Channels*, with student Daniel Subak. Co-advised Senior Research Project with Prof. Micah Sherr. Georgetown University. 2011/2012.
6. *Smudge Attacks*, with student Evan Mossop. Research assistant. University of Pennsylvania. 2010

AWARDS AND
HONORS

1. 2010-2011 University of Pennsylvania's Center for Teaching and Learning Graduate Fellowship for Teaching Excellence.
Details on the fellows program can be found here: http://www.upenn.edu/ctl/programs_services/graduate_student_programs/graduate_fellows_program
2. 2011 University of Pennsylvania's Center for Teaching and Learning Teaching Certificate.
Details of the certificate program can be found here: http://www.upenn.edu/ctl/programs_services/graduate_student_programs/ctl_teaching_certificate
3. Computer Research Association's (CRA) Outstanding Undergraduate Researcher Honorable Mention 2007, a National Award.
4. Columbia University's Theodore R. Bashkow Award Recipient 2007. A cash prize of \$200.00 presented to a computer science senior who has excelled in independent projects. This is awarded in honor of Professor Theodore R. Bashkow, whose contributions as a researcher, teacher and consultant have significantly advanced the state of the art of computer science.

TEACHING
WORKSHOPS
ORGANIZED FOR
CTL FELLOWSHIP
AWARD

(* indicates a workshop advertised university-wide)

1. *Designing and Encouraging Good Course Projects*. October 6, 2010.
2. **Preventing and Dealing with Student Teaching*. October 20, 2010.
3. *Teaching Students to Teach Themselves*. November 22, 2010.
4. *Designing an Intro Level Course: A Computer Science Case Study in 120*. November 30, 2010.

5. **The Use and Abuse of Powerpoint*. March 1, 2011.
6. *Placing Your Teaching Within Your Department's Curriculum*. March 14, 2011
7. *Fostering Research in the Classroom: Getting Students into the Labs*. March 29, 2011.
8. *Designing a Research Seminar*. April 4, 2011.

INVITED TALKS *(excluding presentations at conferences/workshops)*

1. *Smartphone Security Side Channels: From the Interaction Layer out*. Villanova University. Villanova, PA. March 15, 2013.
2. *Challenges in Experiment with Botnet Detection Systems*. Georgia Tech. Atlanta, Georgia. September 2, 2011.
3. *Detection of Peer-to-Peer Botnets*. FBI Cyber-Crime Field Office Philadelphia. Philadelphia, Pennsylvania. April 14, 2011.
4. *Smudge Attacks On Smartphone Touchscreens*. LeHigh University. Bethlehem, Pennsylvania. February 25, 2010.
5. *Smudge Attacks On Smartphone Touchscreens*. Columbia University. New York, New York. September 29. 2010.
6. *Smudge Attacks On Smartphone Touchscreens*. Carleton University. Ottawa, Ontario. August 31, 2010.