

# Joshua Serratelli Schiffman

PhD Candidate

Computer Science and Engineering • Pennsylvania State University

*Office:* 344 IST Building • University Park, PA 16802

*Home:* 3181 Shellers Bend Unit 2 • State College, PA 16801

*Email:* jschiffm@cse.psu.edu • *Homepage:* www.joshschiffman.org

---

## Education

Current Status:

The Pennsylvania State University

Ph.D., Computer Science and Engineering

Candidacy Exam: Passed Spring 2007

Intended Graduation Date: Spring 2011

Advisor: Trent Jaeger (tjaeger@cse.psu.edu)

The Pennsylvania State University, May 2009

M.S., Computer Science and Engineering

Thesis: Efficient and Scalable Verification of Distributed System Integrity Using SHIMA

Advisor: Trent Jaeger (tjaeger@cse.psu.edu)

The Pennsylvania State University, May 2006

B.S., Computer Science, GPA: 3.89.

Honors in Computer Science

Minors in Mathematics and Japanese Language

Thesis: Efficient Valid Scope Determination in a Mobile Broadcast Environment

Thesis Supervisor: Dr. Wang-Chien Lee

## Research Experience

- **Research Assistant** *Penn State University*, University Park, PA. August 2006 - Current  
Advised by Dr. Trent Jaeger  
Research in system security and trusted computing.
- **Lead Graduate Student**, *Systems and Internet Infrastructure Security (SIIS) Laboratory*, *The Pennsylvania State University*, August. 2010 - Present  
Administrative and logistical lead student in the SIIS lab. Ran weekly meetings of 12+ members, met with students individually for mentoring and development of leadership and research skills. Responsible for most daily operational activities in the lab.

## Industrial Experience

- **Research Intern** *Samsung Electronics R&D*, San Jose, CA. Summer 2009  
Researched distributed cloud computing application security for mobile devices.
- **Research Co-op** *IBM T. J. Watson Research Center*, Hawthorne, NY. July 2008 - September 2008  
Research in virtual machine security and stream computing.

- **Technical Intern** *Lockheed Martin*, King of Prussia, PA. Summer, 2005, 2006  
Developed web application prototypes for the Coast Guard's Deepwater program. Improved corporate web application for internal requisitions. Automated data entry for the Pennsylvania State Police.
- **Technology Intern** *Commerce Bank*. Summer, 2003  
Maintained bank servers, and created reports and aided help desk staff.

## Awards and Honors

- ACM CCS Conference Student Travel Grant Award 2009
- ACM CCS Workshop Student Travel Grant Awards 2009, 2010
- University Graduate Fellowship Award 2008-2009
- USENIX Association Student Travel Stipend 2007-2010
- IEEE Security and Privacy Travel Grant 2009
- Penn State College of Engineering Fellowship 2006-2007
- ACM SIGMOD Undergraduate Scholarship
- Lockheed Martin Engineering Scholars Award
- Admitted to the Phi Kappa Phi Honors Society

## Affiliations

- Association for Computing Machinery (ACM)
- The Institute of Electrical and Electronics Engineers (IEEE)
- USENIX Advanced Computing Systems Association

## Publications

### Journals

1. Divya Muthukumar, Joshua Schiffman, Mohamed Hassan, Anuj Sawani, Vikhyath Rao, Trent Jaeger, Protecting the Integrity of Trusted Applications in Mobile Phone Systems, To appear in *Security and Communication Networks*, 2010
2. Trent Jaeger and Joshua Schiffman, Outlook: Cloudy with a Chance of Security Challenges and Improvements, *IEEE Security & Privacy Magazine*, vol.8, no.1, pp.77-80, Jan.-Feb. 2010
3. Lee, K.C.K., Schiffman J., Zheng, B., Lee, W.C., Leong, H.V. Round-Eye: A system for tracking nearest surroundings in moving object environments. *The Journal of Systems and Software*, 80:2063-2076, 2007.

### Conferences

4. Patrick Traynor, Joshua Schiffman, Thomas La Porta, Patrick McDaniel, Abhrajit Ghosh, and Farooq Anjum, Constructing Secure Localization Systems with Adjustable Granularity, *Proceedings of the IEEE Global Communications Conference (GLOBECOM)*, December, 2010. Miami FL.

5. Joshua Schiffman, Xinwen Zhang and Simon Gibbs. DAAuth: Fine-grained Authorization Delegation for Distributed Web Application Consumers, *to appear at POLICY '10: Proceedings of the 2010 IEEE International Symposium on Policies for Distributed Systems and Networks*, July, 2010. Washington, DC.
6. Sandra Rueda, Boniface Hicks, Dave King, Thomas Moyer, Joshua Schiffman, Yogesh Sreenivasan, Trent Jaeger, and Patrick McDaniel. An Architecture for Enforcing End-to-End Access Control Over Web Applications, *SACMAT '10: 15th ACM symposium on Access Control Models and Technologies*, June 2010. Pittsburgh, PA.
7. Joshua Schiffman, Thomas Moyer, Christopher Shal, Trent Jaeger, and Patrick McDaniel. Justifying Integrity Using a Virtual Machine Verifier, *ACSAC '09: Proceedings of the 25th Annual Computer Security Applications Conference*, December 2009. Honolulu, HI. (19.0% acceptance rate)
8. Thomas Moyer, Kevin Butler, Joshua Schiffman, Patrick McDaniel, and Trent Jaeger. Scalable Web Content Attestation, *ACSAC '09: Proceedings of the 25th Annual Computer Security Applications Conference*, December 2009. Honolulu, HI. (19.0% acceptance rate)
9. Ken C. K. Lee, Josh Schiffman, Baihua Zheng, Wang-chien Lee, Valid Scope Computation for Location-Dependent Spatial Query in Mobile Broadcast Environments, *17th ACM Conference on Information and Knowledge Management*, October 2008.
10. Divya Muthukumar, Anuj Sawani, Joshua Schiffman, Brian M. Jung, Trent Jaeger, Measuring Integrity on Mobile Phone Systems, *SACMAT '08: 13th ACM symposium on Access Control Models and Technologies*, June 2008.
11. Luke St.Clair, Joshua Schiffman, Trent Jaeger, and Patrick McDaniel, Establishing and Sustaining System Integrity via Root of Trust Installation, *ACSAC '07: 23rd Annual Computer Security Applications Conference*, December 2007.
12. Ken C. K. Lee, Josh Schiffman, Baihua Zheng, Wang-Chien Lee and Hong Va Leong. Tracking Nearest Surrounders in Moving Object Environments. In *IEEE International Conference on Pervasive Services*, 2006.

## **Workshops**

13. Joshua Schiffman, Thomas Moyer, Hayawardh Vijayakumar, Trent Jaeger, and Patrick McDaniel. Seeding Clouds with Trust Anchors. *1st ACM Cloud Computing Security Workshop*, October 2010. Chicago, IL
14. Xinwen Zhang, Joshua Schiffman, Simon Gibbs, Anugeetha Kunjithapatham, and Sangoh Jeong. Securing Elastic Applications on Mobile Devices for Cloud Computing, *1st ACM Cloud Computing Security Workshop*, November 2009. Chicago, IL.
15. William Enck, Sandra Rueda, Yogesh Srdeenivasan, Joshua Schiffman, Luke St. Clair, Trent Jaeger, and Patrick McDaniel. Protecting Users from ‘Themselves’. *Proceedings of the 1st ACM Computer Security Architectures Workshop*, November 2007. Alexandria, VA.

## Technical Reports

16. Joshua Schiffman, Trent Jaeger, and Patrick McDaniel. Network-based Root of Trust for Installation. Technical Report NAS-TR-0135-2010, Network and Security Research Center, Department of Computer Science and Engineering, Pennsylvania State University, University Park, PA, USA, June 2010.
17. Kevin Butler, Stephen McLaughlin, Thomas Moyer, Joshua Schiffman, Patrick McDaniel, and Trent Jaeger. Firma: Disk-Based Foundations for Trusted Operating Systems. Technical Report NAS-TR-0114-2009, Networking and Security Research Center, Department of Computer Science and Engineering, Pennsylvania State University, University Park, PA, USA, May 2009.
18. Patrick Traynor, Joshua Schiffman, Thomas La Porta, Patrick McDaniel, Abhrajit Ghosh, and Farooq Anjum, Constructing Secure Localization Systems with Adjustable Granularity, Technical Report NAS-TR-0084-2007, Network and Security Research Center, Department of Computer Science and Engineering, Pennsylvania State University, University Park, PA, USA, December 2007. (superseded by Constructing Secure Localization Systems with Adjustable Granularity)

## Miscellaneous

19. Joshua Schiffman, 19th USENIX Security Symposium Conference Summaries. *USENIX ;login Magazine*, December 2010.
20. Joshua Schiffman, 17th USENIX Security Symposium Conference Summaries. *USENIX ;login Magazine*, December 2008.

## Invited Talks

1. Towards Practical Attestation: Challenges and Opportunities, *Trusted Infrastructure Workshop*, June 10, 2010. Pittsburgh, PA.

## External Service

### External Reviewer:

- USENIX Security Symposium
- ACM Computer and Communications Security Conference (CCS)
- IEEE Symposium on Security and Privacy
- ISOC Network and Distributed System Security Symposium (NDSS)
- ACM Annual Computer Security Applications Conference (ACSAC)
- ACM Symposium on Access Control Models and Technologies (SACMAT)
- ICST SecureComm
- Information Security Conference
- ACM SIGCOMM's Computer Communication Review
- Computer Networks Journal
- ACM Workshops: Scalable Trusted Computing (STC), Virtual Machine Security (VMSec), Cloud Computing Security Workshop (CCSW), SafeConfig

- USENIX Workshops: HotSec, HotCloud, WOOT
- International Workshop on Security in Systems and Networks
- IEEE International Workshop on Security in Software Engineering