

# Prateek Saxena

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## CONTACT INFORMATION

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University of California, Berkeley  
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## RESEARCH INTERESTS

My present research focuses on web security and binary analysis. I am broadly interested in computer security and its areas of intersection with programming languages, verification, compilers and operating systems.

## EDUCATION

- Ph.D., **University of California, Berkeley, CA, USA**  
Computer Science, Expected Graduation: May 2012
  - GPA: 3.92 / 4.0
  - Thesis: *Systematic Techniques, Tools and Architecture For Securing The Web Platform*
  - Adviser: [Professor Dawn Song](#)
  - Area of Study: Computer Security, Programming Languages, Verification
- M.S., **Stony Brook University, NY, USA**  
Computer Science, Aug 2007
  - GPA: 3.98 / 4.0
  - Thesis: *Static Binary Analysis and Transformation for Sandboxing Untrusted Plugins*
  - Adviser: [Professor R. Sekar](#)
  - Area of Study: Systems Security
- B.E., Vishwakarma Institute of Technology, **University of Pune, India**  
Computer Engineering, Jun 2004
  - 1<sup>st</sup> Class with Distinction
  - Senior Year Project: *LIZARD: A Replay Debugger for GDB*

## PUBLICATIONS

1. Mike Samuel, Prateek Saxena, Dawn Song. Context-Sensitive Auto-Sanitization in Web Templating Languages Using Type Qualifiers. In the Proceedings of the 18<sup>th</sup> ACM Conference on Computer and Communications Security (CCS), Oct 2011.
2. Prateek Saxena, David Molnar, Benjamin Livshits. SCRIPTGARD: Automatic Context-Sensitive Sanitization for Large-Scale Legacy Web Applications. In the Proceedings of the 18<sup>th</sup> ACM Conference on Computer and Communications Security (CCS), Oct 2011.
3. Pieter Hooimeijer, Ben Livshits, David Molnar, Prateek Saxena, Margus Veanes. (Authors listed alphabetically). Fast and Precise Sanitizer Analysis with BEK. In the Proceedings of the 20th Usenix Security Symposium (Usenix Security), Aug 2011.
4. Joel Weinberger, Prateek Saxena, Devdatta Akhawe, Matthew Finifter, Richard Shin, Dawn Song. A Systematic Analysis of XSS Sanitization in Web Application Frameworks. In Proceedings of European Symposium on Research in Computer Security (ESORICS), Sep 2011.
5. Prateek Saxena, Devdatta Akhawe, Steve Hanna, Stephen McCamant, Feng Mao, Dawn Song. A Symbolic Execution Framework for JavaScript. In Proceedings of the 31<sup>st</sup> IEEE Symposium on Security and Privacy (IEEE S&P), May 2010.
6. Prateek Saxena, Steve Hanna, Pongsin Poosankam, Dawn Song. FLAX: Systematic Discovery of Client-side Validation Vulnerabilities in Rich Web Applications. In Proceedings of the 17th Annual Network and Distributed System Security Symposium (NDSS), Feb 2010.
7. Adam Barth, Adrienne Porter Felt, Prateek Saxena, and Aaron Boodman. Protecting Browsers

from Extension Vulnerabilities. In Proceedings of the *17th Annual Network and Distributed System Security Symposium (NDSS)*, Feb 2010.

8. Steve Hanna, Richard Shin, Devdatta Akhawe, Arman Boehm, Prateek Saxena, Dawn Song. The Emperors New APIs: On the (In)Secure Usage of New Client Side Primitives. In Proceedings of the *4th Web 2.0 Security and Privacy Workshop (W2SP)*, Oakland, May 2010.
9. Prateek Saxena, Pongsin Poosankam, Stephen McCamant, Dawn Song. Loop-Extended Symbolic Execution on Binary Programs. In Proceedings of the *18th International Symposium on Software Testing and Analysis (ISSTA)*, Jul 2009. (Supercedes TR No. UCB/EECS-2009-34, EECS Department UC, Berkeley).
10. Yacin Nadji, Prateek Saxena, Dawn Song. Document Structure Integrity: A Robust Basis for Cross-site Scripting Defense. In Proceedings of the *16th Annual Network and Distributed System Security Symposium (NDSS)*, Feb 2009.
11. Lorenzo Cavallaro, Prateek Saxena, R. Sekar. On the Limits of Information Flow Techniques for Malware Analysis and Containment. In Proceedings of the *Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA)*, Jul 2008.
12. Prateek Saxena, R. Sekar, Varun Puranik. Efficient fine-grained binary instrumentation with applications to taint-tracking. In Proceedings of the *International Symposium on Code Generation and Optimization (CGO)*, Apr 2008.
13. Dawn Song, David Brumley, Heng Yin, Juan Caballero, Ivan Jager, Min Gyung Kang, Zhenkai Liang, James Newsome, Pongsin Poosankam, Prateek Saxena. BITBLAZE: A New Approach to Computer Security via Binary Analysis. In Proceedings of the *International Conference on Information Systems Security (\*Invited paper) (ICISS)*, Dec 2008.
14. Prateek Saxena. Static Binary Analysis And Transformation For Sandboxing Untrusted Plugins. *MS Thesis*, submitted to the Department of Computer Science, Stony Brook University, Aug 2007.
15. Prateek Saxena, R. Sekar, Mithun Iyer and Varun Puranik. A Practical Technique for Containment of Untrusted Plug-ins. *Technical Report*, Secure Systems Lab, Stony Brook University, August 2008.

SELECTED  
TECHNICAL  
REPORTS

PATENTS

- SCRIPTGARD: Automatic Context-Sensitive Sanitization. Filed with David Molnar, Patrice Godefroid, Benjamin Livshits, Microsoft Research. Filed in Dec 2010.
- BEK: String Operations with Transducers. Filed with David Molnar, Benjamin Livshits, Pieter Hooimeijer, Margus Veanes, Microsoft Research. Filed in Dec 2010.

AWARDS &  
FELLOWSHIPS

- Symantec Research Lab Graduate Fellowship, 2011–2012
- 1<sup>st</sup> Prize, Symantec Graduate Intern Showcase Competition, 2011
- AT&T Best Applied Security Research Paper Award, at 2010 CSAW, NYU-Poly.
- Awards for senior year research project – [LIZARD: GDB-Replay Debugger](#) (2003-2004)
  - 1<sup>st</sup> prize, India-level Project Competition, Indian Institute of Technology (IIT), Kanpur.
  - 2<sup>nd</sup> prize, International Project Contest, Indian Institute of Sciences (IISc), Bangalore.
  - 1<sup>st</sup> prize, India-level Project Competition, Bharati Vidyapeeth COE (BVP), Pune.
  - 1<sup>st</sup> prize, Systems Category – Project Competition, Pune Institute of Computer Technology (PICT), India.
- 4 India-Level Programming Contest Awards – 1<sup>st</sup> and 2<sup>nd</sup> prizes across multiple competitions in 2002, 2003 and 2004.

PROFESSIONAL SERVICE

- External reviewer for the following conferences and journals: ACM TISSEC 2011, ACM CCS 2011, ISSTA 2011, CAV 2011, CAV 2010, USENIX Security 2009
- Invited Talks: TRUST Seminar (Fall 2011), Google (Summer 2011), Mozilla (Summer 2011).

TEACHING EXPERIENCE

- **Graduate Student Instructor** CS 161 – Computer Security, Fall 2008  
University of California, Berkeley
  - Responsible for 1 hour discussion lecture, twice a week.
  - Designed exams, homeworks and 3 programming projects.
  - [Teaching Effectiveness Rating](#) : 4.2/5

PROFESSIONAL EXPERIENCE

- **Graduate Student Researcher** Aug 2007 - Present  
University of California, Berkeley, CA, USA.
- **Research Intern** July 2011 - Aug 2011  
Symantec Research Labs, Mountain View, CA, USA.
- **Research Intern** Jun 2010 - Aug 2010  
Microsoft Research, Redmond, WA, USA.
- **Graduate Student Instructor** Aug 2008 - Dec 2008  
University of California, Berkeley, with Prof. Dawn Song
- **Research Assistant** Aug 2005 - Jul 2007  
Stony Brook University, NY, USA.
- **Software Developer** Jul 2004 - Jul 2005  
GNU Tools group, Codito Technologies, India.

REFERENCES

PROF. DAWN SONG  
ASSOCIATE PROFESSOR  
675 SODA HALL  
COMPUTER SCIENCE DIVISION  
UNIVERSITY OF CALIFORNIA, BERKELEY

PROF. DAVID WAGNER  
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PROF. R. SEKAR  
PROFESSOR  
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STONY BROOK UNIVERSITY, STONY BROOK

DR. DAVID MOLNAR  
RESEARCHER, MICROSOFT RESEARCH  
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Additional references available on request.