

Avik Chaudhuri

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- RESEARCH AREAS
- **Computer and Web Security, Programming Languages, Specification and Verification**
Links to papers, software, and a research statement can be found at the URL above.
- EDUCATION
- **University of California at Santa Cruz, USA**
Ph.D. in Computer Science (2004–2008)
 - **Indian Institute of Technology, New Delhi, India**
Dual Degree (B.Tech. + M.Tech.) in Computer Science and Engineering (1999–2004)
- EMPLOYMENT
- **Post-doctoral Research Associate** (Winter 2009–)
Department of Computer Science, University of Maryland at College Park
Advisor: Jeffrey Foster
 - **Graduate Student Researcher** (Winter 2005–Fall 2008)
Computer Science Department, University of California at Santa Cruz
Advisor: Martín Abadi
 - **Research Intern** (Summer 2006)
Rigorous Software Engineering, Microsoft Research India
Mentor: Sriram Rajamani
 - **Teaching Assistant** (Fall 2003, Spring 2004)
Department of Computer Science and Engineering, Indian Institute of Technology, New Delhi
Logic for Computer Science, Instructor: Astrid Kiehn
Programming Languages, Instructor: Sanjiva Prasad
 - **Visiting Student Researcher** (Summer 2003)
NICTA + School of Computer Science and Engineering, University of New South Wales, Sydney
Mentor: Sethu Ramesh
 - **Student Intern** (Summer 2002)
Projet Cristal, INRIA, Rocquencourt
Mentor: Gérard Huet
- PH.D. THESIS
- **Foundations of Access Control for Secure Storage**
Advisor: Martín Abadi
- PUBLICATIONS
- **Static Typing for Ruby on Rails**
David An, Avik Chaudhuri, and Jeffrey Foster
IEEE/ACM Conference on Automated Software Engineering (ASE), to appear, 2009
 - **PCAL: Language Support for Proof-Carrying Authorization Systems**
Avik Chaudhuri and Deepak Garg
European Symposium on Research in Computer Security (ESORICS), pp. 184–199, 2009
 - **A Concurrent ML Library in Concurrent Haskell**
Avik Chaudhuri
ACM International Conference on Functional Programming (ICFP), pp. 269–280, 2009
 - **Language-Based Security on Android**
Avik Chaudhuri
ACM Workshop on Programming Languages and Analysis for Security (PLAS), pp. 1–7, 2009

- **A Type System for Data-Flow Integrity on Windows Vista**
Avik Chaudhuri, Prasad Naldurg, and Sriram Rajamani
ACM SIGPLAN Notices 43(12):9–20, 2009
(Award paper, PLAS 2008)
 - **EON: Modeling and Analyzing Dynamic Access Control Systems with Logic Programs**
Avik Chaudhuri, Prasad Naldurg, Sriram Rajamani, Ganesan Ramalingam, and Subbu Velaga
ACM Conference on Computer and Communications Security (CCS), pp. 381–390, 2008
 - **On Secure Distributed Implementations of Dynamic Access Control**
Avik Chaudhuri
LICS/CSF Workshop on Computer Security (FCS-ARSPA-WITS), pp. 93–107, 2008
 - **Automated Formal Analysis of a Protocol for Secure File Sharing on Untrusted Storage**
Bruno Blanchet and Avik Chaudhuri
IEEE Symposium on Security and Privacy (S&P), pp. 417–431, 2008
 - **Formal Analysis of Dynamic, Distributed File-System Access Controls**
Avik Chaudhuri and Martín Abadi
IFIP Conference on Formal Methods for Systems (FORTE), pp. 99–114, LNCS, 2006
 - **Dynamic Access Control in a Concurrent Object Calculus**
Avik Chaudhuri
International Conference on Concurrency Theory (CONCUR), pp. 263–278, LNCS, 2006
 - **Secrecy by Typing and File-Access Control**
Avik Chaudhuri and Martín Abadi
IEEE Computer Security Foundations Symposium/Workshop (CSF), pp. 112–123, 2006.
 - **Formal Security Analysis of Basic Network-Attached Storage**
Avik Chaudhuri and Martín Abadi
ACM Workshop on Formal Methods in Security Engineering (FMSE), pp. 43–52, 2005
- UNDER REVIEW ○ **SCanDroid: Automated Security Certification of Android Applications**
Adam Fuchs, Avik Chaudhuri, and Jeffrey Foster
Submitted to IEEE Symposium of Security and Privacy (S&P), 2010
- **Liberalizing Dependency**
Avik Chaudhuri
Submitted to European Symposium on Programming (ESOP), 2010
- OTHER WORK ○ **A Generic Automated Proof-Carrying Framework**
M.Tech. Thesis, Indian Institute of Technology, New Delhi, 2004
Advisor: Sanjiva Prasad
- **Validation of Mobile Code under Transformations**
Avik Chaudhuri and Sanjiva Prasad
Technical Report, Indian Institute of Technology, New Delhi, 2004
 - **Symbolic Forced Simulation: Interface Generation for SoCs**
Avik Chaudhuri, Arcot Sowmya, and Sethu Ramesh
Technical Report, University of New South Wales, Sydney, 2003
 - **Polytypic Structured Editing**
Avik Chaudhuri and Sanjiva Prasad
Technical Report, Indian Institute of Technology, New Delhi, 2003
 - **A Distributed Structured Editor for ML**
Avik Chaudhuri and Gérard Huet
Technical Report, INRIA Rocquencourt, 2002
- SOFTWARE ○ **Rubyx: Symbolic Analysis of Ruby Scripts** (in progress)
Avik Chaudhuri, Jeffrey Foster, and David An

- **SCanDroid: Automated Security Certification of Android Applications**
Avik Chaudhuri, Adam Fuchs, and Jeffrey Foster
- **DRails: Static Typing of Web Applications in Ruby on Rails**
David An, Avik Chaudhuri, and Jeffrey Foster
- **PCAL: Language Support for Systems with Proof-Carrying Authorization**
Avik Chaudhuri and Deepak Garg
- **CML/CH: A Concurrent ML Library in Haskell**
Avik Chaudhuri [supported by Benjamin Franksen]
- **EON: Security Analysis of Dynamic Systems with Logic Programs**
Avik Chaudhuri, Subbu Velaga, Prasad Naldurg, Ganesan Ramalingam, and Sriram Rajamani
- **StrEd: A Distributed Structured Editor for ML**
Avik Chaudhuri and Gérard Huet

INVITED
TALKS

- **Language-Based Security on Mobile Device Platforms**
Programming Languages Day, IBM Research New York, 2009
- **Towards Provably Secure and Correct Systems**
Languages and Runtimes Group, Adobe Advanced Technology Labs, 2009
Cloud Computing Futures Group, Microsoft Research Redmond, 2009
Programming Languages and Compilers Group, University of California at Los Angeles, 2008
- **Automated Security Analysis of File System Protocols**
RSE Seminar, Microsoft Research India, 2008
Security Group, Bell Labs, 2008
- **Deriving Secure Distributed Implementations of State Machines**
Short talk, IEEE Computer Security Foundations Symposium, 2008
- **Dynamic Labels and Static Types for Protection on Operating Systems**
RSE Seminar, Microsoft Research India, 2006
Software Engineering Seminar, University of California at Santa Cruz, 2006
- **Proof-Carrying Code: Towards Genericity**
Logic Seminar, NICTA and University of New South Wales, Sydney, 2003

REVIEWING
ACTIVITIES

- **Program committee member**
PLAS 2010, FMSE 2008
- **External reviewer (selected venues)**
CSF, POPL, ICALP, ESOP, FSTTCS, JCS, CACM

AWARDS

- **Best Paper Award PLAS 2008.**
- **UCSC Regent's Fellowship 2004, 2007.**

REFERENCES

- **Martín Abadi** (Microsoft Research Silicon Valley, University of California at Santa Cruz)
Email: abadi@cs.ucsc.edu
<http://users.soe.ucsc.edu/~abadi/home.html>
 - **Jeffrey Foster** (University of Maryland at College Park)
Email: jfoster@cs.umd.edu
<http://www.cs.umd.edu/~jfoster>
 - **Sriram Rajamani** (Microsoft Research India)
Email: sriram@microsoft.com
<http://research.microsoft.com/~sriram>
 - **Bruno Blanchet** (École Normale Supérieure, CNRS, INRIA)
Email: blanchet@di.ens.fr
<http://www.di.ens.fr/~blanchet/index-eng.html>
Additional references are available on request.
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