

# 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
- **Programming Language Design Expert** (Summer 2010–)  
Languages and Runtimes, Adobe Advanced Technology Labs  
Manager: Bernd Mathiske
  - **Post-doctoral Research Associate** (Winter 2009–Spring 2010)  
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
- **Symbolic Security Analysis of Ruby-on-Rails Web Applications**  
Avik Chaudhuri and Jeffrey Foster  
*ACM Conference on Computer and Communications Security (CCS)*, to appear, 2010
  - **Static Typing for Ruby on Rails**  
David An, Avik Chaudhuri, and Jeffrey Foster  
*IEEE/ACM Conference on Automated Software Engineering (ASE)*, pp. 590–594, 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
- **Liberalizing Dependency**  
Avik Chaudhuri

- 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**  
Avik Chaudhuri and Jeffrey Foster
  - **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, CCS, ICALP, ESOP, FSTTCS, JCS, CACM, LMCS
- AWARDS
  - **Best Paper Award** PLAS 2008.
  - **UCSC Regents Fellowship** 2004, 2007.
- REFERENCES
  - **Martín Abadi** (Microsoft Research Silicon Valley, University of California at Santa Cruz)  
Email: [abadi@cs.ucsc.edu](mailto: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](mailto:jfoster@cs.umd.edu)  
<http://www.cs.umd.edu/~jfoster>

- **Sriram Rajamani** (Microsoft Research India)  
Email: [sriram@microsoft.com](mailto:sriram@microsoft.com)  
<http://research.microsoft.com/~sriram>
- **Bruno Blanchet** (École Normale Supérieure, CNRS, INRIA)  
Email: [blanchet@di.ens.fr](mailto:blanchet@di.ens.fr)  
<http://www.di.ens.fr/~blanchet/index-eng.html>

*Additional references are available on request.*

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