

Scott D. Stoller

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RESEARCH INTERESTS

Design, analysis, optimization, testing, and verification of software, with emphases on concurrency, security, and incremental computation.

EDUCATION

- 09/1991 - 08/1996: **Cornell University.** Ph.D., Computer Science, May 1997. GPA: 4.1
09/1990 - 05/1991: **Cornell University.** Ph.D. Candidate, Physics. GPA: 4.0
09/1986 - 05/1990: **Princeton University.** B.A., Physics, *summa cum laude*, May 1990. GPA: 4.1

RESEARCH AND WORK EXPERIENCE

- 09/2009 - present: **Stony Brook University**, Computer Science Dept.
Professor
- 09/2003 - 08/2009: **Stony Brook University**, Computer Science Dept.
Associate Professor
- 09/2000 - 08/2003: **Stony Brook University**, Computer Science Dept.
Assistant Professor
- 08/1996 - 08/2000: **Indiana University**, Computer Science Dept., Bloomington, IN
Assistant Professor
- 09/1993 - 08/1996: **Cornell University**, Computer Science Dept.
Graduate Research Assistant with Professor Fred B. Schneider
- 06/1994 - 08/1994: **DEC Systems Research Center**, Palo Alto, CA
Research Intern with Dr. John DeTreville
- 06/1993 - 08/1993: **AT&T Bell Labs**, Murray Hill, NJ
Member of Technical Staff, working with Dr. Douglas J. Howe
- 09/1991 - 05/1993: **Cornell University**, Computer Science Dept.
Graduate Research Assistant with Professor Robert L. Constable
- 06/1990 - 08/1990: **Hoffmann-La Roche, Inc.**, Nutley, NJ
Employee in MIS Department
- 06/1989 - 08/1989: **Eastman Kodak Co., Engineering Research Center**, Rochester, NY
Intern in Optical Device Group with Dr. John Debesis
- 06/1988 - 08/1988: **Princeton University**, Department of Physics
Research Assistant with Professor Daniel Marlowe
- 06/1987 - 08/1987: **Sony Corporation of America, Inc.**, Park Ridge, NJ
Intern in Advertising Department, developing database system

AWARDS AND HONORS

- Best Paper Award, 2nd International Conference on Runtime Verification (RV 2011).
- Outstanding Community Service Award, IEEE Technical Committee on Security and Privacy, 2009.
- Best Paper Award, 2005 Haifa Verification Conference.
- NASA Turning Goals Into Reality Award for Engineering Innovation, 2003. Awarded to the Java PathFinder Team. I am named as a team member for my contributions.
- Office of Naval Research Young Investigator Award, 2002.
Two Young Investigators in Computer Science were selected in 2002.
- National Science Foundation CAREER Award, 1999.
- Teaching Excellence Recognition Award, Indiana University, 1999.
- IBM Graduate Fellow, 1993-1994.
- National Science Foundation Graduate Fellow, 1990-1993.
- Graduated *summa cum laude*, Princeton University, 1990.
- Apker Award Finalist, American Physical Society, 1990.
Four finalists are selected annually for excellence in undergraduate research.
- Kodak Scholar, with full-tuition scholarship, 1988-1990.
- Manfred Pyka Memorial Physics Prize, Physics Dept., Princeton University, 1989.
- Kusaka Memorial Physics Prize, Physics Dept., Princeton University, 1988.

GRANTS

1. Principal Investigator, *Java Client of the Model-Independent Analysis*. Brookhaven National Laboratory, \$12,765, 2010–2011.
2. co-Principal Investigator, *Survivable Software*, with Scott A. Smolka, Principal Investigator, and Radu Grosu, Klaus Havelund, and Erez Zadok co-Principal Investigators. Air Force Office of Scientific Research, \$687,692, 2009–2011.
3. Principal Investigator, *The Implementation of the Asynchronous Case of the EPICS-DDS Middleware for the Accelerator High-Level Environment*. Brookhaven National Laboratory, \$12,399, 2009–2009.
4. co-Principal Investigator, *Invariant Rules for Software Producibility and Assurance*, with Yanhong Liu, Principal Investigator. Office of Naval Research, Software and Cyberspace Information Assurance, \$282,719, 2009–2010.
5. co-Principal Investigator, *Proactive Techniques for Preserving System Integrity: A Basis for Robust Defense Against Malware*, with R. Sekar, Principal Investigator, and C.R. Ramakrishnan, co-Principal Investigator. National Science Foundation, Cybertrust Program, \$1,000,000, 2008–2012.
6. co-Principal Investigator, *Center for Information Protection: A Multi-University Industry/University Collaborative Research Center*, with R. Sekar, Principal Investigator, and Tzi-cker Chiueh, Rob Johnson, C.R. Ramakrishnan, Radu Sion, and Erez Zadok, co-Principal Investigators. National Science Foundation, Industry/University Cooperative Research Centers (I/UCRC) Program, \$249,985, 2007–2012.

7. Principal Investigator, *A Framework for Analyzing and Ensuring Trust in Service-Oriented Architectures*, with R. Sekar and C.R. Ramakrishnan, co-Principal Investigators. Office of Naval Research, Multidisciplinary University Research Initiative (MURI), \$2,082,541, 2007–2012.
8. co-Principal Investigator, *Deductive Spreadsheets for Security Policy Specification and Analysis*, with C.R. Ramakrishnan, Principal Investigator, and I.V. Ramakrishnan, and David Warren, co-Principal Investigators. National Science Foundation, Cybertrust Program, \$400,000, 2006–2010.
9. co-Principal Investigator, *Clarity and Efficiency in Design*, with Yanhong Liu, Principal Investigator. National Science Foundation, Science of Design Program, \$203,924, 2006–2008.
10. Project Director, *Grant for Distinguished Lecture Series and Stony Brook Computing Society*. Citigroup Foundation, \$15,000, 2006–2007.
11. Principal Investigator, *Tools for Detecting and Reconciling Security Policy Conflicts*, with Yanhong Liu, co-Principal Investigator. This is a subcontract from an Office of Naval Research (ONR) project in collaboration with Elizabeth Leonard, Myla Archer, and Connie Heitmeyer at the U.S. Naval Research Laboratory. \$145,000 (estimate), 2006–2008.
12. co-Principal Investigator, *A Plan for Developing a Multi-University Industry/University Collaborative Research Center on Cyber Security*, with R. Sekar, Principal Investigator, and Tzi-cker Chiueh, C.R. Ramakrishnan, Radu Sion, and Erez Zadok, co-Principal Investigators. National Science Foundation, Industry/University Cooperative Research Centers (I/UCRC) Program, \$9,987, 2005–2006.
13. co-Principal Investigator, *Runtime-Monitoring and Model Checking for High-Confidence Systems Software*, with Erez Zadok, Principal Investigator, and Radu Grosu, Yanhong Liu, and Scott A. Smolka, co-Principal Investigators. National Science Foundation, Computer Systems Research—Advanced Execution Systems, \$830,000, 2005–2009.
14. Project Director, *Grant for Distinguished Lecture Series and Stony Brook Computing Society*. Citigroup Foundation, \$15,000, 2005–2006.
15. Principal Investigator, *Generating Efficient Trust Management Software from Policies*, with Yanhong A. Liu, co-Principal Investigator. Office of Naval Research, Special Competition for Critical Infrastructure Protection (CIP) and High Confidence, Adaptable Software (SW) of the Multidisciplinary Research Program of the University Research Initiative (MURI), \$367,068, 2004–2006.
16. Project Director, *Grant for Distinguished Lecture Series and Stony Brook Computing Society*. Citigroup Foundation, \$15,000, 2004–2005.
17. co-Principal Investigator, *Scholarship for Service*, with R. Sekar, Principal Investigator, and Tzi-cker Chiueh, I.V. Ramakrishnan, and Erez Zadok, co-Principal Investigators. National Science Foundation, Federal Cyber Corps: Scholarship for Service, \$2,459,061, 2004–2011.
18. co-Principal Investigator, *Capacity Expansion in Information Assurance*, with R. Sekar, Principal Investigator, and Yow-Jian Lin, I.V. Ramakrishnan, and Erez Zadok, co-Principal Investigators. National Science Foundation, Federal Cyber Corps: Scholarship for Service, \$199,883, 2003–2006.
19. Project Director, *Grant for Distinguished Lecture Series and Stony Brook Computer Science Society*. Citigroup Foundation, \$10,000, 2003–2004.
20. co-Principal Investigator, *Model Checking for Detecting Computer System Vulnerabilities*, with C.R. Ramakrishnan, Principal Investigator, and I.V. Ramakrishnan, R. Sekar, and S. Smolka, co-Principal Investigators. National Science Foundation, Information Technology Research (ITR), \$925,000, 2002–2007.

21. Principal Investigator, *Checking Critical Software for Concurrent, Distributed, Open, Secure Systems*. Office of Naval Research, Young Investigator Program, \$300,000, 2002–2006.
22. co-Principal Investigator, *Enterprise Protection Planning*, with Tzi-cker Chiueh, R. Sekar, and Erez Zadok, co-Principal Investigators. National Institute of Justice, subcontract from Dolphin Technologies, \$90,000, 2003–2003.
23. Project Director, *Grant for Distinguished Lecture Series and Stony Brook Computer Science Society*. Citigroup Foundation, \$10,000, 2002–2003.
24. co-Principal Investigator, *Program Transformation and Analysis for Reactive Systems*, with Yanhong A. Liu, Principal Investigator. Office of Naval Research, \$337,691, 2000–2003.
25. Principal Investigator, *Automated Analysis of Security and Fault-Tolerance of Distributed Systems*. National Science Foundation, CAREER Award, \$205,000, 1999–2003.
26. Principal Investigator, *Transformational Development of Reactive Systems*. Office of Naval Research, \$121,521, 1999–2002. This is one part of a 3-part grant with Yanhong A. Liu and Robert A. Paige as Principal Investigators on the other parts.
27. co-Principal Investigator, *A General and Powerful Method for Program Optimization*, with Yanhong A. Liu, Principal Investigator. National Science Foundation, \$130,038, 1997–2000.

PUBLICATIONS

Ph.D. Thesis

1. Scott D. Stoller. *A Method and Tool for Analyzing Fault-Tolerance in Systems*. Cornell University, Ithaca, NY, May 1997.

Journal Publications

2. Amit Sasturkar, Ping Yang, Scott D. Stoller, and C. R. Ramakrishnan. Policy Analysis for Administrative Role Based Access Control. *Theoretical Computer Science* 412(44):6208-6234, October 2011.
3. Xiaowan Huang, Justin Seyster, Sean Callanan, Ketan Dixit, Radu Grosu, Scott A. Smolka, Scott D. Stoller, and Erez Zadok. Software Monitoring with Controllable Overhead. *International Journal on Software Tools for Technology Transfer*, 2011.
4. Scott D. Stoller, Ping Yang, Mikhail Gofman, and C. R. Ramakrishnan. Symbolic Reachability Analysis for Parameterized Administrative Role Based Access Control. *Computers & Security* 30(2-3):148-164, March-May 2011.
5. Rahul Agarwal, Saddek Bensalem, Eitan Farchi, Klaus Havelund, Yarden Nir-Buchbinder, Scott D. Stoller, Shmuel Ur, and Liqiang Wang. Detection of Deadlock Potentials in Multi-Threaded Programs. *IBM Journal of Research and Development* 54(5), September/October 2010.
6. Yanhong A. Liu and Scott D. Stoller. From Datalog Rules to Efficient Programs with Time and Space Guarantees. *ACM Transactions on Programming Languages and Systems*, 31(6):1-38, August 2009.
7. Yaniv Eytani, Klaus Havelund, Scott D. Stoller, and Shmuel Ur. Toward a Framework and Benchmark for Testing Tools for Multi-Threaded Programs. *Concurrency and Computation: Practice & Experience*, 19(3):267-279, August 2006.
8. Scott D. Stoller and Ernie Cohen. Optimistic Synchronization-Based State-Space Reduction. *Formal Methods in System Design*, 28(3):263-289, May 2006.

9. Liqiang Wang and Scott D. Stoller. Runtime Analysis of Atomicity for Multi-threaded Programs. *IEEE Transactions on Software Engineering*, 32(2):93-110, February 2006.
10. Scott D. Stoller and Fred B. Schneider. Automated Analysis of Fault-Tolerance in Distributed Systems. *Formal Methods in System Design*, 26(2):183-196, March 2005.
11. Yanhong A. Liu, Scott D. Stoller, Ning Li, and Tom Rothamel. Optimizing Aggregate Array Computations in Loops. *ACM Transactions on Programming Languages and Systems (TOPLAS)*, 27(1):91-125, January 2005.
12. Yanhong A. Liu and Scott D. Stoller. Eliminating Dead Code on Recursive Data. *Science of Computer Programming*, 47(2-3):221-242, May–June 2003.
13. Yanhong A. Liu and Scott D. Stoller. Dynamic Programming via Static Incrementalization. *Higher-Order and Symbolic Computation*, 16(1-2):37-62, March–June 2003.
14. Scott D. Stoller. Model-Checking Multi-Threaded Distributed Java Programs. *International Journal on Software Tools for Technology Transfer*, 4(1):71-91, October 2002.
15. Yanhong A. Liu, Scott D. Stoller, and Tim Teitelbaum. Strengthening Invariants for Efficient Computation. *Science of Computer Programming*, 41(2):139-172, October 2001.
16. Scott D. Stoller. Detecting Global Predicates in Distributed Systems with Clocks. *Distributed Computing*, 13(2):85–98, April 2000.
17. Scott D. Stoller. Leader election in asynchronous distributed systems. *IEEE Transactions on Computers*, 49(3):283-284, March 2000.
18. Yanhong A. Liu, Scott D. Stoller, and Tim Teitelbaum. Static Caching for Incremental Computation. *ACM Transactions on Programming Languages and Systems*, 20(3):546–585, May 1998.
19. Scott D. Stoller and Fred B. Schneider. Verifying programs that use causally-ordered message-passing. *Science of Computer Programming*, 24(2):105–128, 1995.
20. Scott D. Stoller. Addendum to “Proof rules for flush channels”. *IEEE Transactions on Software Engineering*, 20(8):664, August 1994.
21. Scott D. Stoller, William Happer, and Freeman J. Dyson. Transverse spin relaxation in inhomogeneous magnetic fields. *Physical Review A*, 44(11):7459–7477, 1991.

Encyclopedia Articles

22. Scott D. Stoller. Computer Communications Software. In John G. Webster, editor, *Encyclopedia of Electrical and Electronics Engineering*, volume 3. John Wiley & Sons, 1999.
23. Scott D. Stoller. Trust Management in Databases. In Henk C. A. van Tilborg and Sushil Jajodia, editors, *Encyclopedia of Cryptography and Security*, 2nd edition, pages 1326-1327. Springer, 2011.

Book Chapters

24. Yanhong A. Liu and Scott D. Stoller. Dynamic Programming via Static Incrementalization. In Olivier Danvy, Harry Mairson, Fritz Henglein, and Alberto Pettorossi, editors, *Automatic Program Development: A Tribute to Robert Paige*. Springer-Verlag, 2008.
25. Yanhong A. Liu and Scott D. Stoller. Role-Based Access Control: A Corrected and Simplified Specification. In Cliff Wang, Steven King, Ralph Wachter, Robert Herklotz, Chris Arney, Gary Toth, David Hislop, Sharon Heise, and Todd Combs, editors, *Department of Defense Sponsored Information Security Research: New Methods for Protecting Against Cyber Threats*. Wiley, 2007.

26. Devika Subramanian, Cheuk-San Wang, Scott Stoller, Arjun Kapur, and Ka-Pui Chai. Creative synthesis of mechanisms from specification. In Steven Kim, editor, *Creativity in Design: Methods, Models and Tools*. Morgan Kaufmann, 1992.

Refereed Conference/Workshop Publications

27. Michael Gorbovitski, Yanhong A. Liu, Scott D. Stoller, and Tom Rothamel. Composing Transformations for Instrumentation and Optimization. In *Proceedings of the 2012 ACM SIGPLAN Workshop on Partial Evaluation and Semantics-Based Program Manipulation (PEPM)*. ACM Press, 2012.
28. Puneet Gupta, Scott D. Stoller, and Zhongyuan Xu. Abductive Analysis of Administrative Policies in Rule-based Access Control. In *Proceedings of the Seventh International Conference on Information Systems Security (ICISS 2011)*. Lecture Notes in Computer Science. Springer-Verlag, 2011.
29. Scott D. Stoller, Ezio Bartocci, Justin Seyster, Radu Grosu, Klaus Havelund, Scott A. Smolka, and Erez Zadok. Runtime Verification with State Estimation. In *Proceedings of the 2nd International Conference on Runtime Verification (RV 2011)*. Lecture Notes in Computer Science. Springer-Verlag, 2011. **Received the conference's Best Paper Award.**
30. Justin Seyster, Prabakar Radhakrishnan, Samriti Katoch, Abhinav Duggal, Scott D. Stoller, and Erez Zadok. Redflag: A Framework for Analysis of Kernel-Level Concurrency. In *Proceedings of the 11th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP 2011)*. Lecture Notes in Computer Science. Springer-Verlag, 2011.
31. Zhichao Li, Radu Grosu, Koundinya Muppalla, Scott A. Smolka, Scott D. Stoller, and Erez Zadok. Model Discovery for Energy-Aware Computing Systems: An Experimental Evaluation. In *Proceedings of the First International Workshop on Energy Consumption and Reliability of Storage Systems (ERSS 2011)*. IEEE Computer Society Press, 2011.
32. Zhichao Li, Radu Grosu, Priya Sehgal, Scott A. Smolka, Scott D. Stoller, and Erez Zadok. On the Energy Consumption and Performance of Systems Software. In *Proceedings of the 4th Annual International Systems and Storage Conference (SYSTOR 2011)*. ACM Press, 2011.
33. Scott D. Stoller. Trust Management for Web Services. In *Proceedings of the 6th International Conference on Network and Service Management (CNSM)*, pages 262-265. IEEE Computer Society Press, 2010.
34. Michael Gorbovitski, Yanhong A. Liu, Scott D. Stoller, Tom Rothamel, and K. Tuncay Tekle. Alias Analysis for Optimization of Dynamic Languages. In *Proceedings of the 2010 Dynamic Languages Symposium (DLS)*. ACM Press, 2010.
35. Justin Seyster, Ketan Dixit, Xiaowan Huang, Radu Grosu, Klaus Havelund, Scott A. Smolka, Scott D. Stoller, and Erez Zadok. Aspect-Oriented Instrumentation with GCC. In *Proceedings of the 1st International Conference on Runtime Verification (RV 2010)*, volume 6418 of Lecture Notes in Computer Science, pages 405-420. Springer-Verlag, 2010.
36. Yanhong A. Liu, Michael Gorbovitski, and Scott D. Stoller. A Language and Framework for Invariant-Driven Transformations. In *Proceedings of the 8th International Conference on Generative Programming and Component Engineering (GPCE)*. ACM Press, 2009. Acceptance rate: 31%
37. Leena Unnikrishnan and Scott D. Stoller. Parametric Heap Usage Analysis for Functional Programs. In *Proceedings of the 8th International Symposium on Memory Management (ISMM)*. ACM Press, 2009. Acceptance rate: 47%

38. Scott D. Stoller, Ping Yang, Mikhail Gofman, and C. R. Ramakrishnan. Symbolic Reachability Analysis for Parameterized Administrative Role Based Access Control. In *Proceedings of the 14th ACM Symposium on Access Control Models and Technologies (SACMAT)*. ACM Press, 2009. Acceptance rate: 32%
39. Puneet Gupta and Scott D. Stoller. Verification of Security Policy Enforcement in Enterprise Systems. In *Proceedings of the 24th IFIP International Information Security Conference (SEC)*, volume 297 of IFIP Advances in Information and Communication Technology. Springer-Verlag, 2009. Acceptance rate: 22%
40. Qichang Chen, Liqiang Wang, Zijiang Yang, and Scott D. Stoller. HAVE: Integrated Dynamic and Static Analysis for Atomicity Violations. In *Proceedings of the 12th International Conference on Fundamental Approaches to Software Engineering (FASE)*, volume 5503 of Lecture Notes in Computer Science, pages 425-439. Springer-Verlag, 2009. Acceptance rate: 24%
41. Mikhail I. Gofman, Ruiqi Luo, Ayla C. Solomon, Yingbin Zhang, Ping Yang, and Scott D. Stoller. RBAC-PAT: A Policy Analysis Tool for Role Based Access Control. In *Proceedings of the 15th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, volume 5505 of Lecture Notes in Computer Science, pages 46-49. Springer-Verlag, 2009. Acceptance rate for tool papers: 36%
42. Scott D. Stoller. Trust Management and Trust Negotiation in an Extension of SQL. In *Proceedings of the 4th International Symposium on Trustworthy Global Computing (TGC 2008)*, volume 5474 in Lecture Notes in Computer Science, pages 186-200. Springer-Verlag, 2009. Acceptance rate: 46%
43. Michael Gorbovitski, K. Tuncay Tekle, Tom Rothamel, Scott D. Stoller, and Yanhong A. Liu. Analysis and Transformations for Efficient Query-Based Debugging. In *Proceedings of the 8th IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM)*. IEEE Computer Society Press, 2008. Acceptance rate: 38%
44. Michael Gorbovitski, Tom Rothamel, Yanhong A. Liu, and Scott D. Stoller. Efficient Runtime Invariant Checking: A Framework and Case Study. In *Proceedings of the 6th International Workshop on Dynamic Analysis (WODA 2008)*. ACM Press, 2008. Acceptance rate: 48%
45. Anu Singh, C. R. Ramakrishnan, I. V. Ramakrishnan, Scott D. Stoller, and David S. Warren. Security Policy Analysis using Deductive Spreadsheets. In *Proceedings of the 5th Workshop on Formal Methods for Security Engineering (FMSE)*. ACM Press, 2007. Acceptance rate: 29%
46. Scott D. Stoller, Ping Yang, C.R. Ramakrishnan, and Mikhail I. Gofman. Efficient Policy Analysis for Administrative Role Based Access Control. In *Proceedings of the 14th ACM Conference on Computer and Communications Security (CCS)*. ACM Press, 2007. Acceptance rate: 18%
47. Rahul Agarwal and Scott D. Stoller. Run-Time Detection of Potential Deadlocks for Programs with Locks, Semaphores, and Condition Variables. In *Proceedings of the 2006 Workshop on Parallel and Distributed Systems: Testing and Debugging (PADTAD)*. ACM Press, 2006.
48. Katia Hristova, Tom Rothamel, Yanhong A. Liu, and Scott D. Stoller. Efficient Type Inference for Secure Information Flow. In *Proceedings of the 2006 ACM SIGPLAN Workshop on Programming Languages and Analysis for Security (PLAS)*. Acceptance rate: 56%
49. Amit Sasturkar, Ping Yang, Scott D. Stoller, and C.R. Ramakrishnan. Policy Analysis for Administrative Role Based Access Control. In *Proceedings of the 19th Computer Security Foundations Workshop (CSFW)*. IEEE Computer Society Press, 2006. Acceptance rate: 26%
50. Liqiang Wang and Scott D. Stoller. Accurate and Efficient Runtime Detection of Atomicity Errors in Concurrent Programs. In *Proceedings of the ACM SIGPLAN 2006 Symposium on Principles and Practice of Parallel Programming (PPoPP)*, pages 137-146. ACM Press, 2006. Acceptance rate: 27%

51. Yanhong A. Liu and Scott D. Stoller. Querying Complex Graphs. In *Proceedings of the Eighth International Symposium on Practical Aspects of Declarative Languages (PADL 2006)*, volume 3819 of Lecture Notes in Computer Science, pages 199-214. Springer-Verlag, 2005. Acceptance rate: 47%
52. Rahul Agarwal, Liqiang Wang, and Scott D. Stoller. Detecting Potential Deadlocks with Static Analysis and Runtime Monitoring. In *Proceedings of the 2005 Haifa Verification Conference, Parallel and Distributed Systems: Testing and Debugging (PADTAD) Track*, volume 3875 of Lecture Notes in Computer Science, pages 191-207. Springer-Verlag, 2005. **Received the conference's Best Paper Award.** Acceptance rate: 45%
53. Rahul Agarwal, Amit Sasturkar, Liqiang Wang, and Scott D. Stoller. Optimized Run-Time Race Detection And Atomicity Checking Using Partial Discovered Types. In *Proceedings of the 20th IEEE International Conference on Automated Software Engineering (ASE)*, pages 233-242. IEEE Computer Society Press, 2005. Acceptance rate: 10%
54. Yanhong A. Liu, Scott D. Stoller, Michael Gorbovitski, Tom Rothamel, and Yanni Ellen Liu. Incrementalization Across Object Abstraction. In *Proceedings of the ACM SIGPLAN 2005 Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA)*. ACM Press, 2005. Acceptance rate: 18%
55. Liqiang Wang and Scott D. Stoller. Static Analysis of Atomicity for Programs with Non-Blocking Synchronization. In *Proceedings of the ACM SIGPLAN 2005 Symposium on Principles and Practice of Parallel Programming (PPoPP)*. ACM Press, 2005. Acceptance rate: 31%
56. Amit Sasturkar, Rahul Agarwal, Liqiang Wang, and Scott D. Stoller. Automated Type-Based Analysis of Data Races and Atomicity. In *Proceedings of the ACM SIGPLAN 2005 Symposium on Principles and Practice of Parallel Programming (PPoPP)*. ACM Press, 2005. Acceptance rate: 31%
57. Yanhong A. Liu and Scott D. Stoller. A Declarative Framework for Transformation and Translation. In *Proceedings of the Second International Conference on Knowledge Economy and Development of Science and Technology (KEST)*. Tsinghua University Press and Springer-Verlag, 2004.
58. Yanhong A. Liu, Tom Rothamel, Fuxiang Yu, Scott D. Stoller, and Nanjun Hu. Parametric Regular Path Queries. In *Proceedings of the 2004 ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*, pages 219-230. ACM Press, 2004. Acceptance rate: 19.5%
59. Beata Sarna-Starosta and Scott D. Stoller. Policy Analysis for Security-Enhanced Linux. In *Proceedings of the 2004 Workshop on Issues in the Theory of Security (WITS)*, pages 1-12, 2004. Acceptance rate: 47%
60. Rahul Agarwal and Scott D. Stoller. Type Inference for Parameterized Race-Free Java. In *Proceedings of the Fifth International Conference on Verification, Model Checking and Abstract Interpretation (VMCAI)*, volume 2937 of Lecture Notes in Computer Science, pages 149-160. Springer-Verlag, 2004. Acceptance rate: 32%
61. Liqiang Wang and Scott D. Stoller. Run-Time Analysis for Atomicity. In *Proceedings of the Third Workshop on Runtime Verification (RV)*, volume 89(2) of Electronic Notes in Theoretical Computer Science. Elsevier, 2003. Acceptance rate: 75%
62. Yanhong A. Liu and Scott D. Stoller. From Datalog Rules to Efficient Programs with Time and Space Guarantees. In *Proceedings of the Fifth ACM-SIGPLAN International Conference on Principles and Practice of Declarative Programming (PPDP)*. ACM Press, 2003. Acceptance rate: 50%
63. Yanhong A. Liu and Scott D. Stoller. Optimizing Ackermann's function by incrementalization. In *Proceedings of the 2003 ACM SIGPLAN Workshop on Partial Evaluation and Semantics-Based Program Manipulation (PEPM)*, pages 85-91. ACM Press, 2003.

64. Scott D. Stoller and Ernie Cohen. Optimistic Synchronization-Based State-Space Reduction. In *Proceedings of the 9th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, volume 2619 of Lecture Notes in Computer Science, pages 489-504. Springer-Verlag, 2003. Acceptance rate: 25%
65. Leena Unnikrishnan, Scott D. Stoller, and Yanhong A. Liu. Optimized Live Heap Bound Analysis. In *Proceedings of the 4th International Conference on Verification, Model Checking and Abstract Interpretation (VMCAI)*, volume 2575 of Lecture Notes in Computer Science, pages 70-85. Springer-Verlag, 2003. Acceptance rate: 47%
66. Scott D. Stoller. A Bound on Attacks on Authentication Protocols. In *Proceedings of the 2nd IFIP International Conference on Theoretical Computer Science (TCS) in the 17th IFIP World Computer Congress*, pages 588-600. Kluwer, 2002. Acceptance rate: 37%
67. Scott D. Stoller. Testing Concurrent Java Programs Using Randomized Scheduling. In *Proceedings of the Second Workshop on Runtime Verification (RV)*, volume 70(4) of Electronic Notes in Theoretical Computer Science, pages 143-158. Elsevier, 2002. Acceptance rate: 48%
68. Scott D. Stoller. Domain Partitioning for Open Reactive Systems. In *Proceedings of the International Symposium on Software Testing and Analysis (ISSTA)*, pages 44-54. ACM Press, 2002. Acceptance rate: 19%
69. Yanhong A. Liu and Scott D. Stoller. Program Optimization Using Indexed and Recursive Data Structures. In *Proceedings of the 2002 ACM SIGPLAN Workshop on Partial Evaluation and Semantics-Based Program Manipulation (PEPM)*, pages 108-118. ACM Press, 2002. Acceptance rate: 50%
70. Radu Grosu, Yanhong A. Liu, Scott Smolka, Scott D. Stoller, and Jingyu Yan. Automated Software Engineering Using Concurrent Class Machines. In *Proceedings of the 16th IEEE International Conference on Automated Software Engineering (ASE)*, pages 297-304. IEEE Computer Society Press, 2001. Acceptance rate: 20%
71. Yanhong A. Liu, Ning Li, and Scott D. Stoller. Solving Regular Tree Grammar Based Constraints. In *Proceedings of the 8th International Static Analysis Symposium (SAS)*, volume 2126 of Lecture Notes in Computer Science, pages 213-233. Springer-Verlag, 2001. Acceptance rate: 34%
72. Leena Unnikrishnan, Scott D. Stoller, and Yanhong A. Liu. Automatic Accurate Live Memory Analysis for Garbage-Collected Languages. In *Proceedings of the ACM SIGPLAN Workshop on Languages, Compilers, and Tools for Embedded Systems (LCTES)*, pages 102-111. ACM Press, 2001. Acceptance rate: 29%
73. Scott D. Stoller. A Bound on Attacks on Payment Protocols. In *Proceedings of the 16th Annual IEEE Symposium on Logic in Computer Science (LICS)*, pages 61-70. IEEE Computer Society Press, 2001. Acceptance rate: 35%
74. Scott D. Stoller and Yanhong A. Liu. Transformations for Model Checking Distributed Java Programs. In *Proceedings of the 8th International SPIN Workshop on Model Checking of Software*, volume 2057 of Lecture Notes in Computer Science. Springer-Verlag, 2001. Acceptance rate: 50%
75. Scott D. Stoller. Model-Checking Multi-Threaded Distributed Java Programs. In *Proceedings of the 7th International SPIN Workshop on Model Checking of Software*, volume 1885 of Lecture Notes in Computer Science. Springer-Verlag, 2000. Acceptance rate: 55%
76. Scott D. Stoller, Leena Unnikrishnan, and Yanhong A. Liu. Efficient Detection of Global Properties in Distributed Systems Using Partial-Order Methods. In *Proceedings of the 12th International Conference on Computer-Aided Verification (CAV)*, volume 1855 of Lecture Notes in Computer Science. Springer-Verlag, 2000. Acceptance rate: 38%

77. Yanhong A. Liu and Scott D. Stoller. From Recursion to Iteration: What Are the Optimizations? In *Proceedings of the 2000 ACM SIGPLAN Workshop on Partial Evaluation and Semantics-Based Program Manipulation (PEPM)*. ACM Press, 2000. Also published in *ACM SIGPLAN Notices*, 34(11), November 1999, pages 73-82. Acceptance rate: 55%
78. Yanhong A. Liu and Scott D. Stoller. Eliminating Dead Code on Recursive Data. In *Proceedings of the 6th International Static Analysis Symposium (SAS)*, volume 1694 of *Lecture Notes in Computer Science*, pages 211-231. Springer-Verlag, 1999. Acceptance rate: 43%
79. Scott D. Stoller and Leena Unnikrishnan. Automated Symbolic Timing Analysis for Distributed Systems. In *Proceedings of the Fifth International Conference for Young Computer Scientists (ICYCS)*. International Academic Publishers, 1999.
80. Yanhong A. Liu and Scott D. Stoller. Dynamic Programming via Static Incrementalization. In *Proceedings of the European Symposium on Programming (ESOP)*, volume 1576 of *Lecture Notes in Computer Science*, pages 288-305. Springer Verlag, 1999. Acceptance rate: 41%
81. Scott D. Stoller and Fred B. Schneider. Automated Stream-Based Analysis of Fault-Tolerance. In *Proceedings of the Fifth International Symposium on Formal Techniques in Real-Time and Fault-Tolerant Systems (FTRTFT)*, volume 1486 of *Lecture Notes in Computer Science*, pages 113-122. Springer Verlag, 1998.
82. Scott D. Stoller and Yanhong A. Liu. Efficient Symbolic Detection of Global Properties in Distributed Systems. In Alan J. Hu and Moshe Y. Vardi, editors, *Proceedings of the 10th International Conference on Computer-Aided Verification (CAV)*, volume 1427 of *Lecture Notes in Computer Science*, pages 357-368. Springer Verlag, 1998. Acceptance rate: 34%
83. Yanhong A. Liu and Scott D. Stoller. Loop Optimization for Aggregate Array Computations. In *Proceedings of the IEEE Computer Society 1998 International Conference on Computer Languages (ICCL)*, pages 262-271. IEEE Computer Society Press, 1998. Acceptance rate: 30%
84. Scott D. Stoller. Detecting Global Predicates in Distributed Systems with Clocks. In *Proceedings of the Eleventh International Workshop on Distributed Algorithms (WDAG)*, volume 1320 of *Lecture Notes in Computer Science*, pages 185-199. Springer-Verlag, 1997. Acceptance rate: 34%
85. Scott D. Stoller and Fred B. Schneider. Automated Analysis of Fault-Tolerance in Distributed Systems. In *Proceedings of the First ACM SIGPLAN Workshop on Automated Analysis of Software (AAS)*, pages 33-44, 1997.
86. Yaron Minsky, Robbert van Renesse, Fred B. Schneider, and Scott D. Stoller. Cryptographic Support for Fault-Tolerant Distributed Computing. In *Proceedings of the Seventh ACM SIGOPS European Workshop*, pages 109-114, 1996. Acceptance rate: 28%
87. Yanhong A. Liu, Scott D. Stoller, and Tim Teitelbaum. Discovering Auxiliary Information for Incremental Computation. In *Proceedings of the 23rd Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL)*, pages 157-170. ACM Press, 1996. Acceptance rate: 23%
88. Scott D. Stoller and Fred B. Schneider. Faster Possibility Detection by Combining Two Approaches. In Jean-Michel Helary and Michel Raynal, editors, *Proceedings of the Ninth International Workshop on Distributed Algorithms (WDAG)*, volume 972 of *Lecture Notes in Computer Science*, pages 318-332. Springer-Verlag, 1995. Acceptance rate: 38%
89. Scott D. Stoller and John D. DeTreville. Storage Replication and Layout in Video-on-Demand Servers. In *Proceedings of the Fifth International Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV)*, volume 1018 of *Lecture Notes in Computer Science*, pages 327-338. Springer-Verlag, 1995. Acceptance rate: 23%

90. Douglas J. Howe and Scott D. Stoller. An Operational Approach to Combining Classical Set Theory and Functional Programming Languages. In Masami Hagiya and John C. Mitchell, editors, *Proceedings of the International Symposium on Theoretical Aspects of Computer Software (TACS)*, volume 789 of *Lecture Notes in Computer Science*, pages 36–55. Springer-Verlag, 1994. Acceptance rate: 50%

Other Conference/Workshop Publications

91. Yanhong A. Liu, Bo Lin, and Scott D. Stoller. Programming and Optimizing Distributed Algorithms: An Overview. In *Proceedings of the 8th International Conference & Expo on Emerging Technologies for a Smarter World (CEWIT 2011)*. IEEE Press, 2011.
92. Sean Callanan, Daniel J. Dean, Michael Gorbovitski, Radu Grosu, Justin Seyster, Scott A. Smolka, Scott D. Stoller, and Erez Zadok. Software Monitoring with Bounded Overhead. In *Proceedings of the 2008 NSF Workshop on Next Generation Software (NGS)*. IEEE Computer Society Press, 2008.
93. Scott D. Stoller and Yanhong A. Liu. Security Policy Languages and Enforcement. In *Proceedings of the Third Russian National Conference on Mathematics and Information Technology Security (MaBIT)*, October 2004.
94. Klaus Havelund, Scott D. Stoller, and Shmuel Ur. Benchmark and Framework for Encouraging Research on Multi-Threaded Testing Tools. In *Proceedings of the Workshop on Parallel and Distributed Systems: Testing and Debugging (PADTAD)*, April 2003.
95. Scott D. Stoller. A Reduction for Automated Verification of Authentication Protocols. In *Proceedings of the 1999 Workshop on Formal Methods and Security Protocols (FMSP)*, July 1999.
96. Scott D. Stoller. Brief Announcement: Lower and Upper Bounds for Attacks on Authentication Protocols. In *Proceedings of the Eighteenth ACM Symposium on Principles of Distributed Computing (PODC)*, May 1999.
97. Scott D. Stoller. Justifying Finite Resources for Adversaries in Automated Analysis of Authentication Protocols. In *Proceedings of the 1998 Workshop on Formal Methods and Security Protocols (FMSP)*, June 1998.

Miscellaneous Publications

98. Shmuel Ur and Scott D. Stoller. Workshop Summary: 6th Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD). In *Proceedings of the 2008 International Symposium on Software Testing and Analysis (ISSTA)*. ACM Press, 2008.
99. Scott D. Stoller. Automated Analysis of Security and Fault-Tolerance of Distributed Systems. *ACM SIGSOFT Software Engineering Notes* 25(1), January 2000.
100. Y. Annie Liu and Scott D. Stoller. ETAPS'99 Report. *ACM SIGPLAN Notices*, 34(6):16-17, June 1999, and *Bulletin of the EATCS*, 68:196-197, June 1999.
101. Scott D. Stoller. Conference Report: Twelfth IEEE Computer Security Foundations Workshop. In Paul Syverson, editor, *Cipher: Newsletter of the IEEE Computer Society's Technical Committee on Security and Privacy*, Electronic Issue 33, August 12, 1999.
102. Scott D. Stoller. Conference Report: Workshop on Formal Methods and Security Protocols. In Avi Rubin and Paul Syverson, editors, *Cipher: Newsletter of the IEEE Computer Society's Technical Committee on Security and Privacy*, Electronic Issue 28, July 13, 1998.

Posters

- Zhongyuan Xu and Scott D. Stoller. Role Mining with Multiple Metrics. At the 8th International Conference & Expo on Emerging Technologies for a Smarter World (CEWIT 2011), November 3, 2011.
- Puneet Gupta, Scott D. Stoller, and Zhongyuan Xu. Decentralized Administration of Rule-Based Security Policies. At the 8th International Conference & Expo on Emerging Technologies for a Smarter World (CEWIT 2011), November 3, 2011.
- Y. Annie Liu, K. Tuncay Tekle, and Scott D. Stoller. Role Activation Analysis for Trust Management Policies. At the 2009 CEWIT Conference, October 1, 2009.
- Leena Unnikrishnan and Scott D. Stoller. Parametric Heap Usage Analysis for Functional Programs. At the 10th Annual IBM Programming Languages Day, IBM T.J. Watson Research Center, Hawthorne, NY, May 7, 2009.
- Puneet Gupta and Scott D. Stoller. Security Policy Enforcement in Enterprise Systems. At the 2008 CEWIT Conference, October 16, 2008.
- Puneet Gupta and Scott D. Stoller. Security Policy Enforcement in Enterprise Systems. At the Digital Identity Systems Workshop (DISW), September 20, 2007.
- Rahul Agarwal, Amit Sasturkar, Liqiang Wang, and Scott D. Stoller. Optimized Run-time Race Detection and Atomicity Checking Using Partial Discovered Types. At the ACM SIGPLAN 2005 Conference on Programming Language Design and Implementation (PLDI), June 12, 2005.
- Michael Gorbovitski, Tom Rothamel, Yanhong Liu, and Scott D. Stoller. Implementing Incrementalization Across Object Abstraction. At the ACM SIGPLAN 2005 Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), October 17-20, 2005.

TUTORIALS

- Trust Management.
 - MITRE Corp., McLean, VA, May 24, 2006.
 - MITRE Corp., Bedford, MA, May 23, 2006.
 - 21st Annual Computer Security Applications Conference (ACSAC), Tucson, AZ, December 5, 2005.

PRESENTATIONS

Invited Presentations at Conferences and Meetings

1. Security Policy Analysis. IBM Research / Stevens / Columbia Security and Privacy Day, IBM T. J. Watson Research Center, Hawthorne, NY, November 13, 2006.
2. Checking Atomicity in Concurrent Java Programs. Parallel and Distributed Systems: Testing and Debugging (PADTAD) Track of the 2005 Haifa Verification Conference, Haifa, Israel, November 15, 2005.
3. Software Model Checking: Where It Is and Where It's Heading. Software Testing Track of the 2005 Haifa Verification Conference, Haifa, Israel, November 14, 2005.
4. Research Directions for Improving Development of High-Assurance High-Performance Software Systems. Panel on Software Development, Quality, and Metrics. DoD University Research Initiative (URI) Workshop on Critical Infrastructure Protection and High Confidence, Adaptable Software, Annapolis, MD, August 18, 2004.

5. Towards Automated Verification of Software Through Type Discovery. Third International Workshop on Automated Verification of Infinite-State Systems (AVIS), Barcelona, Spain, April 4, 2004.

Other Presentations at Conferences and Meetings

6. Symbolic Reachability Analysis for Parameterized Administrative Role-Based Access Control. Security and Privacy Day, The City University of New York (CUNY), May 20, 2011.
7. Symbolic Reachability Analysis for Parameterized Administrative Role Based Access Control. 14th ACM Symposium on Access Control Models and Technologies (SACMAT), Stresa, Italy, June 4, 2009.
8. Trust Management and Trust Negotiation in an Extension of SQL. 4th International Symposium on Trustworthy Global Computing (TGC), Barcelona, Spain, November 3, 2008.
9. Software Monitoring with Bounded Overhead. 2008 NSF Workshop on Next Generation Software (NGS), Miami, FL, April 13, 2008.
10. Efficient Policy Analysis for Administrative Role Based Access Control. 14th ACM Conference on Computer and Communications Security (CCS), Alexandria, VA, October 31, 2007.
11. Efficient Policy Analysis for Administrative Role Based Access Control. Third Northeastern Verification Meeting, NEC Laboratories America, Princeton, NJ, May 18, 2007.
12. Security Policy Analysis. Second Northeast Verification Meeting, New York University, New York, NY, October 13, 2006.
13. Efficient Type Inference for Secure Information Flow. 2006 ACM SIGPLAN Workshop on Programming Languages and Analysis for Security (PLAS), Ottawa, Canada, June 10, 2006.
14. Detecting Potential Deadlocks with Static Analysis and Runtime Monitoring. Parallel and Distributed Systems: Testing and Debugging (PADTAD) Track of the 2005 Haifa Verification Conference, Haifa, Israel, November 15, 2005.
15. Checking Atomicity in Concurrent Java Programs. IFIP Working Group 2.2 (Formal Description of Programming Concepts) Meeting, Kandestederne, Denmark, September 2005.
16. Security Policy Languages and Enforcement. Third Russian National Conference on Mathematics and Information Technology Security (MaBIT), Moscow, Russia, October 28, 2004.
17. Policy Analysis for Security-Enhanced Linux. 2004 Workshop on Issues in the Theory of Security (WITS), Barcelona, Spain, April 3, 2004.
18. Optimistic Synchronization-Based State-Space Reduction. 9th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS), Warsaw, Poland, April 11, 2003.
19. Optimistic Synchronization-Based State-Space Reduction. 57th Meeting of IFIP Working Group 2.1 (Algorithmic Languages and Calculi), New York, NY, April 2, 2003.
20. A Bound on Attacks on Authentication Protocols. 2nd IFIP International Conference on Theoretical Computer Science (TCS), part of the 17th IFIP World Computer Congress, Montreal, Canada, August 27, 2002.
21. Testing Concurrent Java Programs Using Randomized Scheduling. Second Workshop on Runtime Verification (RV), Copenhagen, Denmark, July 26, 2002.
22. Domain Partitioning for Open Reactive Systems. International Symposium on Software Testing and Analysis (ISSTA), Rome, Italy, July 22, 2002.

23. Domain Partitioning for Open Reactive Systems. Third Annual IBM Programming Languages Day, IBM T.J. Watson Research Center, Hawthorne, NY, May 7, 2002.
24. Generation of Environments for Distributed Programs. Seminar on Specification and Analysis of Secure Cryptographic Protocols, Schloß Dagstuhl, Germany, September 25, 2001.
25. A Bound on Attacks on Payment Protocols. 16th Annual IEEE Symposium on Logic in Computer Science (LICS), Boston, MA, June 16, 2001.
26. Transformations for Model Checking Distributed Java Programs. 8th International SPIN Workshop on Model Checking of Software, Toronto, Canada, May 20, 2001.
27. Model-Checking Multi-Threaded Distributed Java Programs. 7th International SPIN Workshop on Model Checking of Software, Palo Alto, CA, September 1, 2000.
28. Efficient Detection of Global Properties in Distributed Systems Using Partial-Order Methods. 12th International Conference on Computer-Aided Verification (CAV), Chicago, IL, July 17, 2000.
29. From Recursion to Iteration: What Are the Optimizations? 2000 ACM SIGPLAN Workshop on Partial Evaluation and Semantics-Based Program Manipulation (PEPM), Boston, MA, January 22, 2000.
30. Eliminating Dead Code on Recursive Data. Sixth International Static Analysis Symposium (SAS), Venice, Italy, September 23, 1999.
31. Automated Symbolic Timing Analysis for Distributed Systems. Fifth International Conference for Young Computer Scientists (ICYCS), Nanjing, China, August 19, 1999.
32. A Reduction for Automated Verification of Authentication Protocols. Workshop on Formal Methods and Security Protocols (FMSP), Trento, Italy, July 5, 1999.
33. Automated Stream-Based Analysis of Fault-Tolerance. Fifth International Symposium on Formal Techniques in Real-Time and Fault-Tolerant Systems (FTRTFT), Lyngby, Denmark, September 17, 1998.
34. Efficient Symbolic Detection of Global Properties in Distributed Systems. Tenth International Conference on Computer-Aided Verification (CAV), Vancouver, Canada, July 1, 1998.
35. Justifying Finite Resources for Adversaries in Automated Analysis of Authentication Protocols. Workshop on Formal Methods and Security Protocols (FMSP), Indianapolis, IN, June 25, 1998.
36. Automated Analysis of Authentication Protocols. IFIP Working Group 2.3 (Programming Methodology) Meeting, Bloomington, IN, June 2, 1998.
37. Detecting Global Predicates in Distributed Systems with Clocks. Eleventh International Workshop on Distributed Algorithms (WDAG), Saarbrücken, Germany, September 25, 1997.
38. Automated Analysis of Fault-Tolerance in Distributed Systems. First ACM Workshop on Automated Analysis of Software (AAS), Paris, France, January 14, 1997.
39. Faster Possibility Detection by Combining Two Approaches. Ninth International Workshop on Distributed Algorithms (WDAG), Le Mont St. Michel, France, September 15, 1995.
40. Storage Replication and Layout in Video-on-Demand Servers. Fifth International Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV), Durham, NH, April 21, 1995.
41. An Operational Approach to Combining Classical Set Theory and Functional Programming Languages. Theoretical Aspects of Computer Software (TACS), Sendai, Japan, April 19, 1994.

Invited Talks at Universities and Research Institutes

42. Symbolic Reachability Analysis for Parameterized Administrative Role Based Access Control. University of Toronto, Toronto, Canada, July 21, 2009.
43. Efficient Policy Analysis for Administrative Role Based Access Control. Institute of Software, Chinese Academy of Sciences, Beijing, China, August 26, 2008.
 - Checking Atomicity in Concurrent Java Programs
 44. Microsoft Research Asia, Beijing, China, August 21, 2007.
 45. MIT, Cambridge, MA, May 22, 2006.
 46. Yale University, New Haven, CT, September 9, 2005.
 47. Institute of Software, Chinese Academy of Sciences, Beijing, China, June 24, 2005.
48. Static and Dynamic Analysis of Atomicity in Concurrent Programs. Microsoft Research, Redmond, WA, December 6, 2004.
49. Towards Automated Verification of Software Through Type Discovery. University of Toronto, Toronto, Canada, June 21, 2004.
50. Domain Partitioning for Open Reactive Systems. Stevens Institute of Technology, Hoboken, NY, November 17, 2003.
51. Checking Java Programs for Concurrent, Distributed, Open, Secure Systems. Polytechnic University, Brooklyn, NY, January 25, 2002.
52. Pretending Atomicity Based on a Common Locking Discipline. University of Pennsylvania, Philadelphia, PA, April 23, 2001.
 - Automated Verification of Security Protocols
 53. University of Pennsylvania, Philadelphia, PA, April 23, 2001.
 54. Stony Brook University, Stony Brook, NY, April 3, 2000.
 - A Bound on Attacks on Authentication Protocols
 55. University of Illinois at Chicago, Chicago, IL, November 19, 1999.
 56. Bell Laboratories (Lucent Technologies), Naperville, IL, November 18, 1999.
 57. Stony Brook University, Stony Brook, NY, October 15, 1999.
 - Automated Verification of Authentication Protocols
 58. École Normale Supérieure, Paris, France, March 19, 1999.
 59. Carnegie-Mellon University, Pittsburgh, PA, November 30, 1998.
 60. AT&T Labs Research, Florham Park, NJ, August 18, 1998.
 61. Bell Laboratories (Lucent Technologies), Murray Hill, NJ, August 19, 1998.
 - Automated Analysis of Fault-Tolerance in Distributed Systems
 62. Graduate School of the University of Science and Technology of China, Beijing, China, May 8, 1998.
 63. Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong, May 19, 1997.
 - A Method and Tool for Analysis of Fault-Tolerance

64. University of California at Davis, Davis, CA, May 9, 1996.
65. Bell Laboratories (Lucent Technologies), Murray Hill, NJ, May 7, 1996.
66. Pennsylvania State University, University Park, PA, May 3, 1996.
67. University of Waterloo, Waterloo, Ontario, Canada, April 16, 1996.
68. New York University, New York, NY, April 12, 1996.
69. Indiana University, Bloomington, IN, April 1, 1996.
70. AT&T Research, Murray Hill, NJ, March 25, 1996.

PROFESSIONAL ACTIVITIES

General Chair

22nd IEEE Computer Security Foundations Symposium (CSF), Port Jefferson, New York, July 2009.

Co-Chair

Security and Privacy Day at Stony Brook, May 2008. Co-chaired with Radu Sion and R. Sekar.

3rd Workshop on Software Model Checking, Edinburgh, UK, July 2005. Co-chaired with Willem Visser and Byron Cook.

2nd Workshop on Software Model Checking, Boulder, Colorado, July 2003. Co-chaired with Willem Visser and Byron Cook.

Workshop on Software Model Checking, Paris, France, July 2001. Co-chaired with Willem Visser.

Program Chair

6th Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD), Seattle, Washington, July 2008

Member of Steering Committee

IEEE Computer Security Foundations Symposium (CSF)

Member of Editorial Board

International Journal on Software Tools for Technology Transfer (Springer Verlag)

Co-Editor

Proceedings of the 6th Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD), 2008. ACM Press.

Proceedings of the 3rd Workshop on Software Model Checking. *Electronic Notes in Theoretical Computer Science*, 144(3), 2006. Elsevier.

Formal Methods in System Design, 26(2), March 2005. Special issue on Software Model Checking. Kluwer.

Proceedings of the 2nd Workshop on Software Model Checking. *Electronic Notes in Theoretical Computer Science*, 89(3), 2003. Elsevier.

Proceedings of the Workshop on Software Model Checking. *Electronic Notes in Theoretical Computer Science*, 55(3), 2001. Elsevier.

Member of Program Committee

17th ACM Symposium on Access Control Models and Technologies (SACMAT), Newark, New Jersey, June 2012

9th Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD), Toronto, Canada, July 2011

18th International SPIN Workshop on Model Checking of Software (SPIN), Snowbird, Utah, July 2011

Fourth International Workshop on Multicore Software Engineering (IWMSE11), Honolulu, Hawaii, May 2011

16th ACM Symposium on Access Control Models and Technologies (SACMAT), Innsbruck, Austria, June 2011

ACM SIGPLAN 2011 Workshop on Partial Evaluation and Semantics-Based Program Manipulation (PEPM), Austin, Texas, January 2011

17th International SPIN Workshop on Model Checking of Software (SPIN), Enschede, The Netherlands, September 2010

8th Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD), Trento, Italy, July 2010

2nd IEEE International Symposium on Ubisafe Computing (UbiSafe-09), Chengdu, China, December 2009

2009 Haifa Verification Conference (HVC), Haifa, Israel, October 2009

22nd IEEE Computer Security Foundations Symposium (CSF), Port Jefferson, New York, July 2009.

7th Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD), Chicago, Illinois, July 2009

16th International SPIN Workshop on Model Checking Software (SPIN), Grenoble, France, June 2009

2009 Workshop on Run-Time Verification (RV 2009), Grenoble, France, June 2009

2008 Haifa Verification Conference (HVC), Haifa, Israel, October 2008

3rd International Workshop on Flexible Database and Information Systems Technology (FlexDBIST-08), Turin, Italy, September 2008.

2008 ACM Symposium on Access Control Models and Technologies (SACMAT), Estes Park, Colorado, June 2008

2008 Workshop on Run-Time Verification (RV 2008), Budapest, Hungary, March 2008

2nd Workshop on Automated Formal Methods (AFM 2007), Atlanta, Georgia, November 2007

2007 Haifa Verification Conference (HVC), Haifa, Israel, October 2007

Workshop on Parallel and Distributed Systems: Testing and Debugging (PADTAD), London, England, July 2007

2007 Workshop on Run-Time Verification (RV 2007), Vancouver, Canada, March 2007

8th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI), Nice, France, January 2007

2006 Haifa Verification Conference (HVC), Haifa, Israel, October 2006

Workshop on Formal Aspects of Testing and Runtime Verification (FATES/RV), Seattle, Washington, August 2006

Workshop on Multithreading in Hardware and Software: Formal Approaches to Design and Verification (TV), Seattle, WA, August 2006

ACM SIGPLAN 2006 Conference on Programming Language Design and Implementation

(PLDI), Canada, June 2006

Workshop on Parallel and Distributed Systems: Testing and Debugging (PADTAD), Portland, Maine, July 2006

13th International SPIN Workshop on Model Checking Software (SPIN), Vienna, Austria, March 2006

7th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI), Charleston, SC, January 2006.

Workshop on Parallel and Distributed Systems: Testing and Debugging (PADTAD), Haifa, Israel, November 2005

6th International Symposium on Automated and Analysis-driven Debugging (AADEBUG), Monterey, California, September 2005

5th Workshop on Run-Time Verification (RV 2005), Edinburgh, UK, July 2005

14th European Symposium on Programming (ESOP 2005), Edinburgh, Scotland, April 2005

2nd International Workshop on Automated Technology for Verification and Analysis (ATVA), Taipei, Taiwan, November 2004

International Symposium on Software Testing and Analysis (ISSTA 2004), Boston, Mass., July 2004

Workshop on Parallel and Distributed Systems: Testing and Debugging (PADTAD), Santa Fe, New Mexico, April 2004

4th Workshop on Run-Time Verification (RV 2004), Barcelona, Spain, April 2004

11th International SPIN Workshop on Model Checking Software (SPIN 2004), Barcelona, Spain, April 2004

3rd Workshop on Run-Time Verification (RV 2003), Boulder, Colorado, July 2003

10th International SPIN Workshop on Model Checking Software (SPIN 2003), Portland, Oregon, May 2003

Workshop on Parallel and Distributed Systems: Testing and Debugging (PADTAD), Nice, France, April 2003

Workshop on Logical Aspects of Cryptographic Protocol Verification, Paris, France, July 2001

Workshop on Formal Methods and Computer Security, Chicago, Illinois, July 2000

Reviewer (other than Member of Program Committee) for Conferences

APLAS: ASIAN Symposium on Programming Languages and Systems (2007)

ATVA: International Workshop on Automated Technology for Verification and Analysis (2005)

CAV: International Conference on Computer-Aided Verification (2000, 2006, 2008, 2011)

CC: International Conference on Compiler Construction (2004, 2011)

CCS: ACM Conference on Computer and Communications Security (2002, 2008)

CONCUR: International Conference on Concurrency Theory (2002)

DISC: International Symposium on Distributed Computing (2002, 2006)

DSN: IEEE/IFIP International Conference on Dependable Systems and Networks (2001)

ESOP: European Symposium on Programming (2002)

FSTTCS: International Conference on Foundations of Software Technology and Theoretical

Computer Science (2002)
ICDCS: International Conference on Distributed Computing Systems (2001, 2003)
ICISS: International Conference on Information Systems Security (2008)
ICLP: International Conference on Logic Programming (2006)
IPPS: IEEE International Parallel Processing Symposium (1998)
LCTES: ACM SIGPLAN Workshop on Languages, Compilers, and Tools for Embedded Systems (1998, 1999, 2001, 2002)
LICS: IEEE Symposium on Logic in Computer Science (2000)
NDSS: Network & Distributed System Security Symposium (2009)
Oakland: IEEE Symposium on Security and Privacy (2000)
PACT: International Conference on Parallel Architectures and Compilation Techniques (2006)
PADL: International Workshop on Practical Aspects of Declarative Languages (2001)
PARA: State of the Art in Scientific and Parallel Computing (2010)
PASTE: ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering (1999)
PLAS: ACM SIGPLAN Workshop on Programming Languages and Analysis for Security (2006)
PLDI: ACM SIGPLAN Conference on Programming Language Design and Implementation (2002, 2003, 2007, 2008)
PODC: ACM Symposium on Principles of Distributed Computing (1998, 2002, 2003)
POPL: ACM SIGPLAN Conference on Principles of Programming Languages (2003, 2007, 2008, 2009)
PPoPP: ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (2005, 2006)
SPDP: IEEE Symposium on Parallel and Distributed Processing (1996)
TACAS: International Conference on Tools and Algorithms for the Construction and Analysis of Systems (2010, 2011)
USENIX Security Symposium (2005, 2006)
VLDB: International Conference on Very Large Data Bases (2004)
VMCAI: Int'l. Conference on Verification, Model Checking and Abstract Interpretation (2003, 2009)
WDAG: International Workshop on Distributed Algorithms (1996)

Reviewer for Awards

ACM SIGPLAN Dissertation Award Committee Member

Reviewer for Journals

ACM Transactions on Information and Systems Security (TISSEC)
ACM Transactions on Programming Languages and Systems (TOPLAS)
ACM Transactions on Software Engineering and Methodology (TOSEM)
Computers & Security
Computing Surveys

Concurrency and Computation: Practice and Experience
Distributed Computing
Formal Aspects of Computing
Formal Methods in System Design
Higher-Order and Symbolic Computation
IEEE Transactions on Computer-Aided Design
IEEE Transactions on Information Forensics & Security
IEEE Transactions on Parallel and Distributed Systems
IEEE Transactions on Software Engineering
Information and Computation
Information Processing Letters
International Journal of Foundations of Computer Science
International Journal on Software Tools for Technology Transfer
Journal of Computer Security
Journal of Logic and Computation
Journal of Parallel and Distributed Computing
Journal of the ACM
Science of Computer Programming
Software Quality Journal
Software Testing, Verification and Reliability

Reviewer for Funding Agencies

Austrian Science Fund, 2002, 2006
Czech Science Foundation, 2011
Fonds Québécois de la Recherche sur la Nature et les Technologies, 2010
Israel Science Foundation, 2006
Maryland Industrial Partnerships Program, 2007
National Science Foundation, Committee of Visitors for Computer and Network Systems Division, 2009
National Science Foundation, Grant Proposal Review Panels, 1999, 2002, 2003, 2005, 2011
Research Council of Norway, 2002, 2003
United States-Israel Binational Science Foundation, 2005, 2007

Reviewer for Publishers

Addison-Wesley
Prentice-Hall
Wiley

Invited Participant

IFIP Working Group 2.2 (Formal Description of Programming Concepts) Meeting, Kandestederne, Denmark, August 31–September 3, 2005.

IFIP Working Group 2.1 (Algorithmic Languages and Calculi) Meeting, New York, NY, March 30–April 3, 2003.

Seminar on Specification and Analysis of Secure Cryptographic Protocols, Schloß Dagstuhl, Germany, September 23–28, 2001.

U. of Washington / Microsoft Research Summer Institute on Specifying and Checking Properties of Software, Sleeping Lady Conference Center, WA, August 12–16, 2001.

IFIP Working Group 2.3 (Programming Methodology) Meeting, Bloomington, IN, June 1–5, 1998.

IFIP Working Group 2.3 (Programming Methodology) Meeting, Ithaca, NY, July 24–28, 1995.

Participant

Int'l. Summer School on Deductive Program Design, Marktoberdorf, Germany, 1994

Int'l. Summer School on Program Design Calculi, Marktoberdorf, Germany, 1992

COURSES TAUGHT

All courses were taught at Stony Brook University unless indicated otherwise.

Advanced Computer Security (CSE 608), Fall 2008

Advanced Operating Systems (P536), Indiana University, Fall 1996, 1997, 1998, 1999

Computer Security: Attacks and Defenses (ITS 102), Spring 2009, 2010, 2011

Distributed Systems (B649), Indiana University, Spring 1997

Distributed Systems (CSE 590), Spring 2006

Fault-Tolerance and Security in Distributed Systems (B649), Indiana University, Spring 1999

Information System Design (ISE 440), Spring 2001

Network Programming (CSE 533), Fall 2001

Operating Systems (P436), Indiana University, Fall 1996, 1997, 1998, 1999

Operating Systems (CSE 306), Spring 2006

Principles of Concurrent Systems (B649), Indiana University, Spring 2000

Principles of Programming Languages (CSE 526), Spring 2003

Robust Distributed Software (CSE 647), Spring 2002

Security in Distributed Systems (B649), Indiana University, Spring 1998

Security Policy Frameworks (CSE 394), Fall 2005

Security Policy Frameworks (CSE 591/592), Spring 2005, Fall 2007

Software Engineering (CSE 308/ISE 308), Fall 2002, Spring 2004, Spring 2008, Spring 2009 (2 sections), Fall 2010 (2 sections), Fall 2011 (2 sections)

Testing and Verification of Software (CSE 647), Fall 2000

DEPARTMENTAL ACTIVITIES AT STONY BROOK UNIVERSITY

Continuous Improvement Committee (formerly ABET Executive Committee) (2009-present)
Faculty Recruiting Committee (2009-2010)
Graduate Admissions Committee (2010-present)
New Computer Science Building Committee (2008-2011)
Ph.D. Qualifier Committee (2008-present)
School of Computing Committee, Chair (2008-present)
Strategic Planning Committee (2010-present)
Undergraduate Curriculum Committee (2009-present)
Computer Science Honor Society (Upsilon Pi Epsilon), Faculty Advisor (2001-2006)
Distinguished Lecture Series, Organizer (2000-2006)
Stony Brook Computing Society (student chapter of ACM), Faculty Advisor (2001-2006)
Undergraduate Research Liaison for Computer Science (2001-2006)
Faculty Recruiting Committee (2001-2005)
Ph.D. Qualifying Exam Committee (2000-2001)

DEPARTMENTAL ACTIVITIES AT INDIANA UNIVERSITY

Facilities Committee (1996-2000)
Faculty Affairs Committee (1998-2000)
Graduate Education Committee (1998-2000)
Hiring Committee (1997-1998)
Merit Review Committee (1996-1997)
Qualifying Exam Committee (1996-2000)

GRADUATE STUDENT SUPERVISION

All graduate student supervision is at Stony Brook University unless indicated otherwise.

Graduated Ph.D. Students

Puneet Gupta. Verification of Security Policy Administration and Enforcement in Enterprise Systems. 6/2007–12/2011.

Michael Gorbovitski. A System for Invariant-Driven Transformations. 1/2008–5/2010. co-advisor, with Y. Liu (primary advisor).

Leena Unnikrishnan. Automatic Live Memory Bound Analysis for High-Level Languages. 6/1996–8/2009.

Katia Hristova. From Rules to Efficient Algorithms for Cyber Trust Applications. co-advisor, with Y. Liu (primary advisor). 6/2006–12/2007.

Rahul Agarwal. Combining Static Analysis and Run-Time Analysis for Verification and Testing of Multi-Threaded Programs. 6/2002–12/2006.

Liqiang Wang. Analysis of Synchronization Errors for Multi-Threaded Programs. 1/2002–8/2006.

Current Ph.D. Students

Zhongyuan Xu. 6/2010–present.

Master's Students

Aman Jain. Program similarity detection. 1/2010–12/2010.
Axatha Jayadev Jalimarada. Combining static and dynamic analysis for C programs. 1/2010–12/2010.
Xiaomeng Chen. Java client of the model-independent analysis. 1/2010–12/2010.
Niranjan Hasabnis. EPICS-based Data Distribution Service. 1/2009–12/2009.
Raveesh Ahuja. Security of service-oriented systems. 1/2009–12/2009.
Christopher Widak. Detection of potential deadlocks in C programs. 9/2008–5/2009.
William Anzovino. Policy enforcement in enterprise systems. 9/2008–5/2009.
Jung Hoon (Dennis) Lee. Security policy analysis. Trust management for databases. 6/2007–5/2008.
Gregory Shackles. Security policy analysis. Trust management for databases. 1/2007–12/2007.
Deepanshu Sandhuria. Dynamic detection of potential deadlocks in C programs. 9/2006–12/2006.
Shrinand Javadekar. Instrumentation of synchronization in C programs using CIL. 5/2006–8/2006.
Amit Sasturkar. Security policies for decentralized systems. 9/2003–12/2005.
Nikhil Mahajan. Environment generation for open systems. 9/2002–5/2003.
Xi Zhang. Verification of Byzantine quorums for distributed systems. 6/2001–5/2002.
Han Li. Lock-based state-space reduction for Java. 6/2001–12/2001.
Kshitiz Sharma. Model checking with tree-structured data. Indiana U. 9/1998–12/1998.
Lars Hofhansl. Efficient reliable broadcasts with total ordering. Indiana U. 6/1997–8/1997.
Ramanathan Venkatapathy. Eventually-consistent replication. Indiana U. 9/1996–12/1996.

Dissertation Committee, External Member

Rodrigo Ferreira. Memory Consistency and Program Verification. Yale University. 4/2010.
Jun Chen. Guided Testing of Concurrent Programs Using Value Schedules. Univ. of Waterloo. 8/2009.

Dissertation Committee Member (for students other than advisees)

Michael Hart. Content-Based Access Control and Issues of Privacy and Policy Control in the Web 2.0. 5/2011.
Xiaowan Huang. Compiler-Assisted Software Monitoring and Model Checking. 12/2010.
Wenxin Song. Using Horn Clauses and Binary Decisions Diagrams for Program Analysis. 8/2010.
Anu Singh. Modeling and Verification Techniques for Ad Hoc Network Protocols. 8/2009.
Wei Xu. Program Transformation Techniques for Automated Runtime Detection of Software Exploits. 8/2009.
Sean Callanan. Flexible Debugging with Controllable Overhead. 2/2009.
Tom Rothamel. Automatic Incrementalization of Queries in Object-Oriented Programs. 6/2008.
Weiqing Sun. Practical Information Flow Based Techniques to Safeguard Host Integrity. 5/2008.
Yang Yu. OS-level Virtualization and Its Applications. 11/2007.
Sandeep Bhatkar. Defeating Memory Error Exploits Using Automated Software Diversity. 9/2007.
Nikolai Joukov. Versatile, Portable, and Efficient File System Profiling. 11/2006.
Yu Ma. A Modular Scientific Data Management Architecture. Indiana U. 11/2006.
Diptikalyan Saha. Incremental Evaluation of Tabled Logic Programs. 8/2006.
Ping Yang. Verification Techniques for Mobile Processes and Security Protocols. 8/2006.
Gang Peng. Availability, Fairness, and Performance Optimization in Storage Virtualization Systems. 7/2006.
Dezhuang Zhang. Model Checking for Data-Based Concurrent Systems. 12/2005.
Lap Chung Lam. Program Transformation Techniques for Host-based Intrusion Prevention. 12/2005.
Beata Sarna-Starosta. Constraint-based Analysis of Security Properties. 12/2005.
Arnab Ray. Compositional Modeling of Interaction-Centric Concurrent Systems. 7/2004.
Yifei Dong. Performance and Usability Issues in Model Checking. 8/2003.
Prem Uppuluri. Intrusion Detection/Prevention Using Behavior Specifications. 8/2003.
Bikram Sengupta. Triggered Message Sequence Charts. 7/2003.

Shridhar Diwan, Open HPC++: An Open Programming Environment for High-Performance Distributed Applications. Indiana U. 6/1999.

Ph.D. Candidate Oral Exam Committee Member

- Tushar Deshpande. Towards simplex for the hybrid systems using simulation distances. 12/2011.
- Justin Seyster. Runtime verification of kernel-level concurrency using compiler-based instrumentation. 12/2011.
- Puneet Gupta. Verification of Security Policy Administration and Enforcement in Enterprise Systems. 9/2011.
- Mingwei Zhang. Binary instrumentation for software security. 9/2011.
- Xiang Gao. Targeted on-line advertising. 9/2011.
- Zhichao Li. Power and performance in compression systems: A control theoretical approach with evaluation. 9/2011.
- Justin Seyster. Runtime verification of kernel-level concurrency using compiler-based instrumentation. 9/2011.
- Bo Lin. Distributed programming languages. 6/2011.
- Riccardo Pelizzi. Web vulnerabilities. 5/2011.
- Michael Hart. Content-based access control. 3/2011.
- Xiaowan Huang. Compiler-assisted software monitoring and model checking. 9/2010.
- Jonathan G. Brandvein. Methods of systematic incrementalization. 5/2010.
- Michael Gorbovitski. A system for invariant-driven transformations. 11/2009.
- Jun Yuan. Type-based security verification and program transformation. 9/2009.
- Anu Singh. Modeling and verification techniques for ad hoc network protocols. 12/2008.
- Wenxin Song. Using Horn clauses and binary decisions diagrams for program analysis. 5/2008.
- Peter Williams. Private information retrieval. 5/2008.
- Puneet Gupta. Security policy enforcement and analysis. 5/2008.
- Sean Callanan. Remote debugging with controllable overhead. 3/2008.
- Justin Seyster. Techniques for visualizing software execution. 3/2008.
- Avishay Traeger. Analyzing root causes of latency distributions. 2/2008.
- Michael Hart. Access control in the Web 2.0. 9/2007.
- Katia Hristova. From rules to efficient algorithms for cyber trust applications. 5/2007.
- Deng Pan. Scheduling algorithms for high performance packet switches. 4/2007.
- Tom Rothamel. Automatic incrementalization of object-set queries. 3/2007.
- Sandeep Bhatkar. Defeating memory error exploits using automated software diversity. 9/2006.
- Wei Xu. Program Transformation Techniques for Automated Runtime Detection of Software Exploits. 8/2006.
- Rahul Agarwal. Combining static analysis and run-time analysis for verification and testing of multi-threaded programs. 6/2006.
- Liqiang Wang. Analysis of synchronization errors for multithreaded programs. 5/2006.
- Diptikalyan Saha. Incremental evaluation of tabled logic programs. 2/2006.
- Michael Gorbovitski. A survey of program transformation languages and systems. 2/2006.
- Ningning Zhu. Repairable file system and storage system. 8/2005.
- Amit Sasturkar. A survey of trust management. 6/2005.
- Abhishek Rai. On the role of static analysis in operating system checking and runtime verification. 5/2005.
- Beata Sarna-Starosta. Constraint-based analysis of security properties. 3/2005.
- Lap Chung Lam. Program transformation techniques for host-based intrusion prevention. 2/2005.
- Jiawu Chen. A survey on routing security in mobile ad hoc networks. 2/2005.
- Katia Hristova. Answering rule-based queries efficiently with complexity guarantees. 2/2005.

Abhishek Chaturvedi. Extracting security behavior models of programs. 1/2005.

Alexey Smirnov. DIRA: Automatic detection, identification and repair of control-hijacking attacks. 1/2005.

Yu Ma. A modular scientific data management architecture. Indiana U. 11/2004.

Gang Peng. Availability support and performance optimization in Stonehenge. 9/2004.

Yang Yu. Enterprise digital rights management: solutions against information theft by insiders. 9/2004.

Xiaowan Huang. Efficient search strategies for model checking large state spaces. 9/2004.

Hui Zhang. Multicast protocols in the mobile ad hoc networks: reliability and security. 9/2004.

Shengying Li. A survey on tools for binary code analysis. 8/2004.

Deng Pan. FIFO based multicast scheduling algorithm for virtual output queued packet switches. 8/2004.

Chi Ma. Energy efficient routing in wireless sensor networks. 8/2004.

Dezhuang Zhang. A model-checking framework for data-based systems. 7/2004.

Tom Rothamel. On automatic data structure selection. 6/2004.

Ping Yang. Verification and compilation techniques for mobile processes. 3/2004.

Zhenkai Liang. Biologically inspired adaptive approaches to computer security. 1/2004.

Wenxin Song. Symbolic representations of functions. 12/2003.

Zan Sun. Real-time model checking on finite path. 12/2003.

Diptikalyan Saha. Incremental maintenance of recursive views with applications to tabled logic programming. 9/2003.

Leena Unnikrishnan. Program analysis for memory usage. 9/2003.

Rahul Agarwal. Detecting race conditions in multithreaded programs. 9/2003.

Jing Luo. Automatic verification of business processes. 9/2003.

Liqiang Wang. Analyzing atomicity of concurrent programs. 8/2003.

Kartik Gopalan. Efficient network resource allocation with QoS Guarantees. 2/2003.

Ningning Zhu. Data versioning. 2/2003.

Sandeep Bhatkar, Analysis and transformation of executable binaries. 2/2003.

Fuxiang Yu, Finite differencing and parametric regular path queries. 1/2003.

Arnab Ray, Hierarchical structure and compositional behavior of interaction-centric concurrent systems. 1/2003.

Yifei Dong, Efficiency and usability issues in model checking. 12/2002.

Bin Tang. Multicast switching networks: architecture, scheduling, and routing. 12/2002.

Prem Uppuluri. Intrusion detection and prevention using behavior specifications. 12/2002.

Beata Sarna-Starosta. Data independence. 6/2002.

Bikram Sengupta, Triggered message sequence charts. 4/2002.

Xiangdong Qin. Multicast in wavelength division multiplexed optical networks. 12/2001.

V. N. Venkatakrishnan. Mobile code security. 8/2001.

Leena Unnikrishnan. Live heap space bound analysis. 8/2001.

Chandrashekhar Shetty. Control-flow and data-flow analysis of higher-order languages. Indiana U. 5/1999.

Madhusudhan Govindaraju. Distributed scientific computing. Indiana U. 9/1999.

Marat Fairuzov. Visualization and distributed systems. Indiana U. 6/1998.

Master’s Thesis Committee Member

Hiep Minh Nguyen Vuong. A Study on Access Control, Trust Management, Constraints and Types of an EHR System. 12/2010.

Ketan Dixit. Tracecut – a mechanism of providing history based pointcuts on top of InterAspect. 12/2010.

Anupama Chandwani. Light-weight proactive approach for safe execution of untrusted code. 5/2010.

Aravind Akella. Binary Streaming. 5/2010.

Tushar Deshpande. Model Checking the Kaminsky DNS Cache-Poisoning Attack Using PRISM. 5/2010.

Abhinav Duggal. Stopping Data Races using Redflag. 5/2010.

Bhuvan Mital. A Framework for Enforcing Information Flow Policies. 5/2010.

Santosh Sonawane. BEAST – Optimizations of BIRD, an Instrumentation Tool for Stripped Win32 Binaries and Its applications. 12/2009.

Subhadeep Sinha. Data Paladin—An Application Independent Rights Management System. 12/2008.

Prateek Saxena. Effective Sand-boxing Techniques using Fine-grained Taint Analysis. 6/2007.

David P. Quigley. PLEASE: Policy Language for Easy Administration of SELinux. 5/2007.

Siddharth Bhatt. Personal Digital Rights Management in Mobile Devices. 5/2007.

Gaurav Poothia. An Approach to Protecting System Integrity from Untrusted Applications. 6/2006.

Shabbir Dahodwala. Learning Pushdown System Models. 12/2002.

Undergraduate Research Supervision

David Sardarian. Automatic identification of chatbots. 6/2010–1/2011.

David Sardarian. Security in cloud computing. 6/2009–8/2009.

Jung Hoon (Dennis) Lee. Security policy analysis. 6/2006–5/2007.

Sangwoo Im. Security policy analysis. 6/2006–8/2006.

Sam Stern. Email relay for Instant Messaging. 6/2003-7/2003.

Eve Fon Wu. UML for web application development. 10/2003-12/2003.