

Tao Xie

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I.B. BRIEF RESUME

I.B.1. Education background:

- B.S., Computer Science, 07/1997, Fudan University, Shanghai, P.R. China.
- M.S., Computer Science, 07/2000, Peking University, Beijing, P.R. China.
- M.S., Computer Science, 06/2002, University of Washington, Seattle, WA, USA.
- Ph.D., Computer Science, 07/2005, University of Washington, Seattle, WA, USA.

I.B.2. Professional experience:

- Assistant Professor, Aug 2005 to present, North Carolina State University, Department of Computer Science, Raleigh, NC, USA
- Visiting Researcher, 05/2007- 06/2007, 06/2008-07/2008, 07/2009-08/2009, Microsoft Research, Foundation of Software Engineering Group, Redmond, WA, USA

I.B.3. Scholarly and creative activities

<i>Books</i>	<i>Career Total (number)</i>	<i>7/1/08-6/30/09 Total</i>	<i>Since joining NCSU</i>	
Edited books and Proceedings	3	2	3	
Refereed book chapters	0	0	0	

<i>Papers, Articles, Patents, Reports, News Interviews, ...</i>	<i>Career Total (number)</i>	<i>7/1/08-6/30/09 Total</i>	<i>Since joining NCSU</i>	<i>Submitted</i>
Refereed journal articles	9	4	6	4
Refereed magazine articles	1	1	1	
Refereed conference papers	63	27	54	10
Refereed workshop papers	26	7	21	
Technical reports	11	2	11	
Patents	0	0	0	

<i>Talks, Presentations, etc.</i>	<i>Career Total (number)</i>	<i>7/1/08-6/30/09 Total</i>	<i>Since joining NCSU</i>	
Invited and conference/workshop talks	102	31	71	

<i>Funded Research, Development and Teaching</i>	<i>Career Total (\$)</i>	<i>7/1/08-6/30/09 Total (\$)</i>	<i>Since joining NCSU</i>	<i>Pending</i>
Contracts and Grants	\$1,746,138	\$974,880	\$1,746,138	\$3,888,898
Gift	\$89,820	\$60,000	\$89,820	
<i>Mentoring and Supervision (see CV for details)</i>	<i>Career Total (number)</i>	<i>7/1/08-6/30/09 Total</i>	<i>Since joining NCSU</i>	<i>In Progress</i>
PhD (chair/co-chair)	2 ¹	1	2	7
MS (chair/co-chair)	2	0	2	1
<i>Courses taught (put distance ed and summer courses into separate, additional rows)</i>	<i>Career Total (number)</i>	<i>7/1/08-6/30/09 Total</i>	<i>Since joining NCSU</i>	
Regular undergraduate (3 credits, 10 < x < 100 students)	3	1	3	
Regular graduate (3 credits, 10 < x < 100 students)	4	2	4	
Small graduate (3 credits, x < 10 students, e.g., independent studies, special topics)	3	0	3	
<i>Courses created and/or revised in a significant way (complete list in CV)</i>	<i>Career Total (number)</i>	<i>7/1/08-6/30/09 Total</i>	<i>Since Joining NCSU</i>	
Graduate	2	1	2	
<i>Other (see CV and/or next page for details)</i>	<i>Career Total (number)</i>	<i>7/1/08-6/30/09 Total</i>	<i>Since Joining NCSU</i>	
Major awards and recognitions	13	6	9	
Major on-campus services	12	9	12	
Major off-campus services	80	37	80	

I.B.4. Memberships in Professional Organizations

- Member of the ACM, SIGSOFT, IEEE
- ACM SIGSOFT History Liaison, ACM SIGSOFT Executive Committee Member

I.B.5. Scholarly and Professional Honors

- 2009 National Science Foundation Faculty Early Career Development (CAREER) Award
- 2008, 2009 IBM Faculty Awards
- 2008 IBM Jazz Innovation Award
- 2009 One of the 12 best reviewers among 334 reviewers of the ACM TOSEM journal over 2007/08
- 2007 Best Student Paper Award in ETX 2007

I.B.6. Professional Service on Campus:

- Advisory Board Member, NCSU Assistant Professors' Learning Community, 2009-Present
- Research Ethics Senior Fellow, NCSU Research and Professional Ethics Program, 2005-2008

¹ One graduated PhD co-advised by me is an exchange student from Beihang University, China.

- Member, Departmental Strategic Planning Committee (voted), 2009-Present
- Member, Departmental undergraduate curriculum committee, 2007-2008, 2008-2009
- Member, Departmental faculty recruiting sub-area committee, 2007-2009
- Member, Departmental computer steering committee, 2005-2006

I.B.7. Professional Service off Campus:

- **Research Proposal Panelist/Reviewer:** NSF (2006, 2007, 2009), ARO (2008), Dutch Research Council (NWO), Netherlands (2008), Research Grants Council of Hong Kong (RGC) (2007, 2009)
- **Program Chair/Co-Chair/Co-Organizer:** ICSM 2009, ICST 2008 Student Papers Track, WebTest 2009, TAV-WEB 2008, SSEAT 2009, Dagstuhl Seminar on Practical Software Testing: Tool Automation and Human Factors 2010, Dagstuhl Seminar on Mining Programs and Processes 2007
- **Program Committee Member:** ICSE 2010, MSR 2010, ISSTA 2009/2008, ASE 2006-2009, WWW 2009, ICST 2009/2008, ISSRE 2006, MSR 2010/2009, SSBSE 2009, Workshops FSE 2008, ICSM 2010/2008/2007, ICWS 2008, AOSD 2007, TAP 2007, ESEM 2007 Short papers track, HICSS 2007, QSIC 2006, ISSRE 2006 Fast abstracts track, HVC 2006-2009, IBM Verification 2005

II. TEACHING AND MENTORING OF UNDERGRADUATE AND GRADUATE STUDENTS

II.A. TEACHING EFFECTIVENESS

II.A.1. List courses taught with enrollment in each.

- Spring 2009, CSC 510 Software Engineering (graduate) – 27 students
- Spring 2009, CSC 326 Software Engineering (undergraduate) – 68 students
- Fall 2008, CSC 712 Software Testing and Reliability (graduate) – 20 students
- Spring 2008, CSC 326 Software Engineering (undergraduate) – 51 students
- Spring 2008, CSC 591T Special Topics on Software Testing and Analysis (graduate) – 7 students
- Fall 2007, CSC 510 Software Engineering (graduate) – 34 students
- Spring 2007, CSC 326 Software Engineering (undergraduate) – 76 students
- Spring 2007, CSC 591T Special Topics on Software Testing and Analysis (graduate) – 8 students
- Spring 2006, CSC 591T Special Topics on Software Testing and Analysis (graduate) – 5 students
- Spring 2006, CSC 516 Information Technology and Information Security Practicum (graduate) – 26 students

II.D. MASTER'S and DOCTORAL THESES DIRECTED AND BEING DIRECTED

Ph.D. Students (Chair) (9)

- Mithun Acharya, Spring 2006 – graduated Spring 2009 (joined ABB Research)
- Nuo Li (female), Fall 2007- graduated Summer 2008 (visiting PhD student from Beihang University, China, co-advised by me)
- Madhuri R Marri (female), Spring 2008 – (to be transferred to PhD program)
- JeeHyun Hwang, Spring 2007– passed Written Prelim Exam (Fall 2008) – expected to graduate Spring 2011
- Evan Martin, Fall 2005 – passed Oral Prelim Exam (Spring 2007) – expected to graduate Fall 2009
- Yoonki Song, Spring 2007– passed Written Prelim Exam (Fall 2008) – expected to graduate Fall 2011

- Kunal Taneja, Fall 2006 –passed Written Prelim Exam (Fall 2008)) – expected to graduate Spring 2011
- Suresh Thummalapenta, Spring 2007– passed Written Prelim Exam (Fall 2008) – expected to graduate Spring 2011
- Xusheng Xiao, Fall 2009 – expected to graduate Spring 2014

M.S. Students (Chair) (3)

- Kobina Inkumsah, Spring 2006 – graduated Spring 2008 (joined IBM)
- Rahul Pandita Spring 2009 –
- Hai Yuan, Fall 2005 – graduated Spring 2006

III. SCHOLARSHIP IN THE REALMS OF FACULTY RESPONSIBILITY

III.A. PUBLICATIONS

Author order was determined based on amount of work

Journal Publications (9)

1. [ASEJ 10] Dan Hao, Tao Xie, Lu Zhang, Xiaoyin Wang, Jiasu Sun, and Hong Mei. Test Input Reduction for Result Inspection to Facilitate Fault Localization. To appear in *Automated Software Engineering An International Journal*, 2010.
2. [IJSEKE 10] Vincent Hu, Richard Kuhn, Tao Xie, and JeeHyun Hwang. Model Checking for Verification of Mandatory Access Control Models and Properties. To appear in *International Journal of Software Engineering and Knowledge Engineering*, 2010.
3. [IST 09] Stephen Thomas, Laurie Williams, and Tao Xie. On Automated Prepared Statement Generation to Remove SQL Injection Vulnerabilities. *Information and Software Technology*, Volume 51, Issue 3, Pages 589-598, March 2009.
4. [TOSEM 08] Christoph Csallner, Yannis Smaragdakis, and Tao Xie, DSD-Crasher: A Hybrid Analysis Tool for Bug Finding, *ACM Transactions on Software Engineering and Methodology*, Vol. 17, Issue 2, pp. 345-371, July 2008.
5. [ASEJ 06] Tao Xie and David Notkin. Tool-Assisted Unit-Test Generation and Selection Based on Operational Abstractions. In *Automated Software Engineering An International Journal*, Vol. 13, No. 3, pp. 345-371, July 2006. a special issue of selected papers from the ASE 03 conference, 2006.
6. [TSE 05] Tao Xie and David Notkin. Checking Inside the Black Box: Regression Testing by Comparing Value Spectra. In *IEEE Transactions on Software Engineering*, 31(10), pp. 869-883, October 2005. A special issue of selected papers from the ICSM 04 conference.
7. [JCST 02] Hong Mei, Tao Xie, and Fuqing Yang. A Model-based Approach to Object-Oriented Software Metrics. In *Journal of Computer Science and Technology*, 17(6), pp.757-769, November 2002.
8. [JoS 00] Hong Mei, Tao Xie, Wanghong Yuan, and Fuqing Yang. Component Metrics in Jade Bird Component Library System. In *Journal of Software*, 11(5), pp.634-641, May 2000.
9. [CJE 00] Tao Xie, Wanghong Yuan, Hong Mei, and Fuqing Yang. JBOOMT: Jade Bird Object-Oriented Metrics Tool. In *Chinese Journal of Electronics*, 9(2), pp.202-207, April 2000.

Refereed Magazine Publications (1)

1. Tao Xie, Suresh Thummalapenta, David Lo, and Chao Liu. Data Mining for Software Engineering. In *IEEE Computer*, 42(8), pp.35-42, August 2009.

Refereed Conference Publications (63 including 47 in research tracks)

Competitive conferences are the most prestigious publication outlet in Computer Science. See <http://www.csc.ncsu.edu/faculty/xie/seconferences.htm> for software engineering conference statistics.

- **9 flagship conference publications: ICSE(5), FSE(2), ISSTA (1), SIGMETRICS (1)**
- **18 top conference publications: ASE (14), ECOOP (2), WWW (1), DSN (1)**

Conference Research Track Publications (47)

1. **Top** [ASE 09a] Suresh Thummalapenta and Tao Xie. Alattin: Mining Alternative Patterns for Detecting Neglected Conditions. To appear in *Proceedings of the 24th IEEE/ACM International Conference on Automated Software Engineering (ASE 2009)*, Auckland, New Zealand, November 2009. Acceptance ratio: 17% (38/222)
2. **Top** [ASE 09b] Hao Zhong, Lu Zhang, Tao Xie, and Hong Mei. Inferring Resource Specifications from Natural Language API Documentation. To appear in *Proceedings of the 24th IEEE/ACM International Conference on Automated Software Engineering (ASE 2009)*, Auckland, New Zealand, November 2009. Acceptance ratio: 17% (38/222)
3. **Top** [ASE 09c] Nuo Li, Tao Xie, Nikolai Tillmann, Jonathan de Halleux, and Wolfram Schulte. Reggae: Automated Test Generation for Programs using Complex Regular Expressions. To appear in *Proceedings of the 24th IEEE/ACM International Conference on Automated Software Engineering (ASE 2009)*, Short Paper, Auckland, New Zealand, November 2009. Acceptance ratio: 32% (38+33/222)
4. [SRDS 09] JeeHyun Hwang, Tao Xie, Fei Chen, and Alex X. Liu. Fault Localization for Firewall Policies. In *Proceedings of the 28th IEEE International Symposium on Reliable Distributed Systems (SRDS 2009)*, Short Paper, Niagara Falls, New York, pp. 100-106, September 2009. Acceptance ratio: 29% (23+7/104)
5. **Flagship** [ESEC/FSE 09] Suresh Thummalapenta, Tao Xie, Nikolai Tillmann, Peli de Halleux, and Wolfram Schulte. MSeqGen: Object-Oriented Unit-Test Generation via Mining Source Code. In *Proceedings of the 7th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2009)*, Amsterdam, the Netherlands, pp. 193-202, August 2009. Acceptance ratio: 15% (32+7/217)
6. **Flagship** [ISSTA 09] Lu Zhang, Shan-Shan Hou, Chao Guo, Tao Xie, and Hong Mei. Time-Aware Test-Case Prioritization using Integer Linear Programming. In *Proceedings of International Conference on Software Testing and Analysis (ISSTA 2009)*, Chicago, pp. 213-223, July 2009. Acceptance ratio: 27% (25/93)
7. [SSIRI 09] JeeHyun Hwang, Tao Xie, and Vincent C. Hu. Detection of Multiple-Duty-Related Security Leakage in Access Control Policies. In *Proceedings of the 3rd IEEE International Conference on Secure Software Integration and Reliability Improvement (SSIRI 2009)*, Shanghai, China, pp. 59-68, July 2009. Acceptance ratio: 25% (30/119)
8. **Top** [ECOOP 09] Hao Zhong, Tao Xie, Lu Zhang, Jian Pei, and Hong Mei. MAPO: Mining and Recommending API Usage Patterns. In *Proceedings of the 23rd European Conference on Object-Oriented Programming (ECOOP 2009)*, Genova, Italy, pp. 318-343, July 2009. Acceptance ratio: 21% (25/117)
9. **Top** [DSN 09] Tao Xie, Nikolai Tillmann, Peli de Halleux, and Wolfram Schulte. Fitness-Guided Path Exploration in Dynamic Symbolic Execution. In *Proceedings of the 39th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2009)*, Lisbon, Portugal, June-July 2009. Acceptance ratio: 21%(37/117)
10. **Flagship** [ICSE 09a] Suresh Thummalapenta and Tao Xie. Mining Exception-Handling Rules as Sequence Association Rules. In *Proceedings of the 31st International Conference on Software Engineering (ICSE 2009)*, Vancouver, Canada, pp. 496-506, May 2009. Acceptance ratio: 12%(50/405)

11. **Flagship** [ICSE 09b] Xiaoyin Wang, Lu Zhang, Tao Xie, Hong Mei, and Jiasu Sun. Locating Need-to-Translate Constant Strings for Software Internationalization. In *Proceedings of the 31st International Conference on Software Engineering (ICSE 2009)*, Vancouver, Canada, pp. 353-363, May 2009. Acceptance ratio: 12%(50/405)
12. [FASE 09] Mithun Acharya and Tao Xie. Mining API Error-Handling Specifications from Source Code. In *Proceedings of International Conference on Fundamental Approaches to Software Engineering (FASE 2009)*, York, UK, pp. 370-384, March 2009. Acceptance ratio: 24%(30/124)
13. [AOSD 09] Mark Harman, Fayezi Islam, Tao Xie, and Stefan Wappler. Automated Test Data Generation for Aspect-Oriented Programs. In *Proceedings of the 8th International Conference on Aspect-Oriented Software Development (AOSD 2009)*, Charlottesville, Virginia, pp. 185-196, March 2009. Acceptance ratio: 28%(19/68)
14. [TSP 08] Vincent Hu, Richard Kuhn, and Tao Xie. Property Verification for Generic Access Control Models. In *Proceedings of IEEE/IFIP International Symposium on Trust, Security and Privacy for Pervasive Applications (TSP 2008)*, Shanghai, China, pp. 243-250, December 2008.
15. [ACSAC 08] Evan Martin, JeeHyun Hwang, Tao Xie, and Vincent Hu. Assessing Quality of Policy Properties in Verification of Access Control Policies. In *Proceedings of 24th Annual Computer Security Applications Conference (ACSAC 2008)*, Anaheim, California, pp. 163-172, December 2008. Acceptance ratio: 24%(42/173)
16. [ISSRE 08] Prasanth Anbalagan and Tao Xie. Automated Generation of Pointcut Mutants for Testing Pointcuts in AspectJ Programs. In *Proceedings of the 19th IEEE International Conference on Software Reliability Engineering (ISSRE 2008)*, Seattle, WA, pp. 239-248, November 2008. Acceptance ratio: 25%(29/116)
17. [SRDS 08] JeeHyun Hwang, Tao Xie, Fei Chen, and Alex X. Liu. Systematic Structural Testing of Firewall Policies. In *Proceedings of the 27th IEEE International Symposium on Reliable Distributed Systems (SRDS 2008)*, Napoli, Italy, pp. 105-114, October 2008. Acceptance ratio: 25%(28/112)
18. [ICSM 08] Shan-Shan Hou, Lu Zhang, Tao Xie, and Jia-Su Sun. Quota-Constrained Test-Case Prioritization for Regression Testing of Service-Centric Systems. In *Proceedings of the 24rd IEEE International Conference on Software Maintenance (ICSM 2008)*, Beijing, China, pp. 257-266, October 2008. Acceptance ratio: 26%(40/156)
19. **Top** [ASE 08a] Suresh Thummalapenta and Tao Xie. SpotWeb: Detecting Framework Hotspots and Coldspots via Mining Open Source Code on the Web. In *Proceedings of the 23rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2008)*, L'Aquila, Italy, pp. 327-336, September 2008. Acceptance ratio: 12%(34/280)
20. **Top** [ASE 08b] Kobi Inkumsah and Tao Xie. Improving Structural Testing of Object-Oriented Programs via Integrating Evolutionary Testing and Symbolic Execution. In *Proceedings of the 23rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2008)*, L'Aquila, Italy, pp. 297-306, September 2008. Acceptance ratio: 12%(34/280)
21. **Top** [ASE 08c] Kunal Taneja and Tao Xie. DiffGen: Automated Regression Unit-Test Generation. In *Proceedings of the 23rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2008)*, Short Paper, L'Aquila, Italy, pp. 407-410, September 2008. Acceptance ratio: 25%(34+36/280)
22. **Flagship** [SIGMETRICS 08] Alex X. Liu, Fei Chen, JeeHyun Hwang, and Tao Xie. XEngine: A Fast and Scalable XACML Policy Evaluation Engine. In *Proceedings of the International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS 2008)*, Annapolis, Maryland, pp. 265-276, June 2008. Acceptance ratio: 18%(36/201)
23. **Flagship** [ICSE 08] Xiaoyin Wang, Lu Zhang, Tao Xie, John Anvik, and Jiasu Sun. An Approach to Detecting Duplicate Bug Reports using Natural Language and Execution Information. In *Proceedings of the 30th International Conference on Software Engineering (ICSE 2008)*, Leipzig, Germany, pp. 461-470, May 2008. Acceptance ratio: 15.1%(56/371)
24. **Top** [ASE 07a] Suresh Thummalapenta and Tao Xie. PARSEWeb: A Programmer Assistant for Reusing Open Source Code on the Web. In *Proceedings of the 22nd IEEE/ACM International*

- Conference on Automated Software Engineering (ASE 2007)*, Atlanta, Georgia, pp. 204-213, November 2007. Acceptance ratio: 12%(37/312)
25. **Top** [ASE 07b] Kunal Taneja, Danny Dig, and Tao Xie. Automated Detection of API Refactorings in Libraries. In *Proceedings of the 22nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2007)*, Short Paper, Atlanta, Georgia, pp. 377-380, November 2007. Acceptance ratio: 25%(37+40/312)
 26. **Top** [ASE 07c] Kobi Inkumsah and Tao Xie. Evacon: A Framework for Integrating Evolutionary and Concolic Testing for Object-Oriented Programs. In *Proceedings of the 22nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2007)*, Short Paper, Atlanta, Georgia, pp. 425-428, November 2007. Acceptance ratio: 25%(37+40/312)
 27. **Top** [ASE 07d] Yuanfang Cai, Sunny Huynh, and Tao Xie. A Framework and Tool Supports for Testing Modularity of Software Design. In *Proceedings of the 22nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2007)*, Short Paper, Atlanta, Georgia, pp. 441-444, November 2007. Acceptance ratio: 25%(37+40/312)
 28. [ICSM 07] Shan-Shan Hou, Lu Zhang, Tao Xie, Hong Mei, and Jia-Su Sun. Applying Interface-Contract Mutation in Regression Testing of Component-Based Software. In *Proceedings of the 23rd International Conference on Software Maintenance (ICSM 2007)*, Paris, France, pp. 174-183, October 2007. Acceptance ratio: 21.5%(46/214)
 29. **Flagship** [ESEC/FSE 07] Mithun Acharya, Tao Xie, Jian Pei, and Jun Xu. Mining API Patterns as Partial Orders from Source Code: From Usage Scenarios to Specifications. In *Proceedings of the 6th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2007)*, Dubrovnik, Croatia, pp. 25-34, September, 2007. Acceptance ratio: 17%(43/251)
 30. **Flagship** [ICSE 07] Prasanth Anbalagan and Tao Xie. Automated Inference of Pointcuts in Aspect-Oriented Refactoring. In *Proceedings of the 29th International Conference on Software Engineering (ICSE 2007)*, Minneapolis, MN, pp. 127-136, May 2007. Acceptance ratio: 15%(50/334)
 31. **Top** [WWW 07] Evan Martin and Tao Xie. A Fault Model and Mutation Testing of Access Control Policies. In *Proceedings of the 11th International Conference on World Wide Web (WWW 2007)*, Security, Privacy, Reliability, and Ethics Track, Banff, Alberta, Canada, pp. 667-676, May 2007. Acceptance ratio: 15%(110/755)
 32. [ICICS 06] Evan Martin, Tao Xie, and Ting Yu. Defining and Measuring Policy Coverage in Testing Access Control Policies. In *Proceedings of the 8th International Conference on Information and Communications Security (ICICS 2006)*, Raleigh, NC, pp. 139-158, December 2006. Acceptance ratio: 19%(22/119)
 33. [ISSRE 06] Mithun Acharya, Tao Xie, and Jun Xu. Mining Interface Specifications for Generating Checkable Robustness Properties. In *Proceedings of the 17th IEEE International Conference on Software Reliability Engineering (ISSRE 2006)*, Raleigh, NC, pp. 311-320, November 2006. Acceptance ratio: 37%(38/102)
 34. [ISSRE 06] Tao Xie, Jianjun Zhao, Darko Marinov, and David Notkin. Detecting Redundant Unit Tests for AspectJ Programs. In *Proceedings of the 17th IEEE International Conference on Software Reliability Engineering (ISSRE 2006)*, Raleigh, NC, pp. 179-188, November 2006. Acceptance ratio: 37%(38/102)
 35. **Top** [ASE 06a] Marcelo d'Amorim, Carlos Pacheco, Tao Xie, Darko Marinov, and Michael D. Ernst. An Empirical Comparison of Automated Generation and Classification Techniques for Object-Oriented Unit Testing. In *Proceedings of the 21st IEEE/ACM International Conference on Automated Software Engineering (ASE 2006)*, Tokyo, Japan, pp. 59-68, September 2006. Acceptance ratio: 18%(22/121)
 36. **Top** [ASE 06b] Mithun Acharya, Tanu Sharma, Jun Xu, and Tao Xie. Effective Generation of Interface Robustness Properties for Static Analysis. In *Proceedings of the 21st IEEE/ACM International Conference on Automated Software Engineering (ASE 2006)*, Short Paper, Tokyo, Japan, pp. 293-296, September 2006. Acceptance ratio: 28%(22+12/121)

37. **Top** [ECOOP 06] Tao Xie. Augmenting Automatically Generated Unit-Test Suites with Regression Oracle Checking. In *Proceedings of the 20th European Conference on Object-Oriented Programming (ECOOP 2006)*, Nantes, France, pp. 380-403, July 2006. Acceptance ratio: 13%(21/160)
38. [AOSD 06] Tao Xie and Jianjun Zhao. A Framework and Tool Supports for Generating Test Inputs of AspectJ Programs. In *Proceedings of the 5th International Conference on Aspect-Oriented Software Development (AOSD 2006)*, Bonn, Germany, pp. 190-201, March 2006. Acceptance ratio: 21%(20/95)
39. [ISSRE 05] Tao Xie and David Notkin. Automatically Identifying Special and Common Unit Tests for Object-Oriented Programs. In *Proceedings of the 16th IEEE International Symposium on Software Reliability Engineering (ISSRE 2005)*, Chicago, Illinois, USA, pp. 277-287, November 2005. Acceptance ratio: 33%(32/98)
40. **Flagship** [ICSE 05] Amir Michail and Tao Xie. Helping Users Avoid Bugs in GUI Applications. In *Proceedings of the 27th International Conference on Software Engineering (ICSE 2005)*, St. Louis, Missouri, USA, pp. 107-116, May 2005. Acceptance ratio: 14%(44/313)
41. [TACAS 05] Tao Xie, Darko Marinov, Wolfram Schulte, and David Notkin. Symstra: A Framework for Generating Object-Oriented Unit Tests using Symbolic Execution. In *Proceedings of the 11th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2005)*, Edinburgh, U.K., pp. 365-381, April 2005. Acceptance ratio: 24%(33/140)
42. [ICFEM 04] Tao Xie and David Notkin. Automatic Extraction of Object-Oriented Observer Abstractions from Unit-Test Executions. In *Proceedings of the 6th International Conference on Formal Engineering Methods (ICFEM 2004)*, Seattle, pp. 290-305, November 2004. Acceptance ratio: 27%(30/110)
43. **Top** [ASE 04] Tao Xie, Darko Marinov, and David Notkin. Rostra: A Framework for Detecting Redundant Object-Oriented Unit Tests. In *Proceedings of the 19th IEEE International Conference on Automated Software Engineering (ASE 2004)*, Linz, Austria, pp. 196-205, September 2004. Acceptance ratio: 14%(25/183)
44. [ICSM 04] Tao Xie and David Notkin. Checking Inside the Black Box: Regression Testing Based on Value Spectra Differences. In *Proceedings of the 20th IEEE International Conference on Software Maintenance (ICSM 2004)*, Chicago, Illinois, pp. 28-37, September 2004. (Selected as one of the Best Papers that are invited to submit to IEEE Transactions on Software Engineering) Acceptance ratio: 31%(18/122)
45. **Top** [ASE 03] Tao Xie and David Notkin. Tool-Assisted Unit Test Selection Based on Operational Violations. In *Proceedings of the 18th IEEE International Conference on Automated Software Engineering (ASE 2003)*, Montreal, Canada, pp. 40-48, October 2003. (Nominated for the Best Paper Award) Acceptance ratio: 13%(22/170)
46. [COMPSAC 01] Hong Mei, Tao Xie, and Fuqing Yang. JBOORET: an Automated Tool to Recover OO Design and Source Models. In *Proceedings of the 25th Anniversary Annual International Computer Software and Applications Conference (COMPSAC 2001)*, Chicago, Illinois, pp. 71-76, October 2001. Acceptance ratio: 47%(80/170)
47. [TOOLS 98] Wanghong Yuan, Xiangkui Chen, Tao Xie, Hong Mei, and Fuqing Yang. C++ Program Information Database for Analysis Tools. In *Proceedings of the 1998 Conference on Technology of Object-Oriented Languages and Systems (TOOLS 27)*, Beijing, China, pp. 173-180, September 1998.

Conference Other Track Publications (16)

48. [ICWS 09 IN] Lingshuang Shao, Junfeng Zhao, Tao Xie, Lu Zhang, Bing Xie, and Hong Mei. User-Perceived Service Availability: A Metric and an Estimation Approach. In *Proceedings of the IEEE International Conference on Web Services (ICWS 2009)*, Application and Industry Track, Los Angeles, CA, pp. 647-654, July 2009. Acceptance ratio: 18%
49. [ICSE 09 NIERa] Wujie Zheng, Michael R. Lyu, and Tao Xie. Test Selection for Result Inspection via Mining Predicate Rules. In *Proceedings of the 31st International Conference on Software Engineering (ICSE 2009)*, New Ideas and Emerging Results, Presentation, Vancouver, Canada, pp. 219-222, May 2009. Acceptance ratio: 18%(21/119)

50. [ICSE 09 NIERb] Kunal Taneja, Tao Xie, Nikolai Tillmann, Jonathan de Halleux, and Wolfram Schulte. Guided Path Exploration for Regression Test Generation. In *Proceedings of the 31st International Conference on Software Engineering (ICSE 2009)*, New Ideas and Emerging Results, Poster, Vancouver, Canada, pp. 311-314, May 2009. Acceptance ratio: 33%(21+18/119)
51. [ICSE 09 DE] Xiaoyin Wang, Lu Zhang, Tao Xie, Hong Mei, and Jiasu Sun. TranStrL: An Automatic Need-to-Translate String Locator for Software Internationalization. In *Proceedings of the 31st International Conference on Software Engineering (ICSE 2009)*, Formal Demonstration, Vancouver, Canada, pp. 555-558, May 2009. Acceptance ratio: 33%(24/72)
52. [ICWS 08 IN] Lingshuang Shao, Lu Zhang, Tao Xie, Junfeng Zhao, Bing Xie, and Hong Mei. Dynamic Availability Estimation for Service Selection Based on Status Identification. In *Proceedings of the IEEE International Conference on Web Services (ICWS 2008)*, Application Services and Industry Track, Beijing, China, pp. 645-652, September 2008.
53. [ISSTA 08 WS] Tevfik Bultan and Tao Xie. Workshop on Testing, Analysis and Verification of Web Software (TAV-WEB 2008). In *Proceedings of the 2008 international Symposium on Software Testing and Analysis (ISSTA 2008)*, Seattle, Washington, pp. 311-312, July 2008.
54. [MSR 08] Suresh Thummalapenta and Tao Xie. SpotWeb: Detecting Framework Hotspots via Mining Open Source Repositories on the Web. In *Proceedings of the 5th Working Conference on Mining Software Repositories (MSR 2008)*, Position Paper, Leipzig, Germany, pp. 109-112, May 2008.
55. [ICWS 07 IN] Evan Martin, Suranjana Basu, and Tao Xie. Automated Testing and Response Analysis of Web Services. In *Proceedings of the IEEE International Conference on Web Services (ICWS 2007)*, Application Services and Industry Track, Salt Lake City, Utah, pp. 647-654, July 2007.
56. [ICSE 07 DE] Evan Martin, Suranjana Basu, and Tao Xie. WebSob: A Tool for Robustness Testing of Web Services. In *Proceedings of the 29th International Conference on Software Engineering (ICSE 2007)*, Companion Volume, Research Demonstrations, Minneapolis, MN, pp. 65-66, May 2007.
57. [FSE 06 PS] Prasanth Anbalagan and Tao Xie. Clamp: Automated Joinpoint Clustering and Pointcut Mining in Aspect-Oriented Refactoring. In *Supplemental Proceedings of the 14th ACM SIGSOFT Symposium on Foundations of Software Engineering (FSE 2006)*, Poster Session, Portland, Oregon, pp. 1-2, November 2006.
58. [ISSRE 06 FA] Evan Martin and Tao Xie. Automated Test Generation for Access Control Policies. In *Supplemental Proceedings of the 17th IEEE International Conference on Software Reliability Engineering (ISSRE 2006)*, Fast Abstracts, Raleigh, NC, November 2006.
59. [ISSRE 06 SP] Yonghee Shin, Laurie Williams, and Tao Xie. SQLUnitGen: SQL Injection Testing Using Static and Dynamic Analysis. In *Supplemental Proceedings of the 17th IEEE International Conference on Software Reliability Engineering (ISSRE 2006)*, Student Program, Raleigh, NC, November 2006.
60. [ICSM 06 DF] Tao Xie. Improving Effectiveness of Automated Software Testing in the Absence of Specifications. In *Proceedings of the 22nd IEEE International Conference on Software Maintenance (ICSM 2006)*, Dissertation Forum, Philadelphia, PA, pp. 355-359, September 2006.
61. [ICSE 06 DE] Tao Xie, Evan Martin, and Hai Yuan. Automatic Extraction of Abstract-Object-State Machines from Unit-Test Executions. In *Proceedings of the 28th International Conference on Software Engineering (ICSE 2006)*, Research Demonstrations, Shanghai, China, pp. 835-838, May 2006.
62. [ICSE 06 ER] Evan Martin and Tao Xie. Understanding Software Application Interfaces via String Analysis. In *Proceedings of the 28th International Conference on Software Engineering (ICSE 2006)*, Emerging Results Track, Shanghai, China, pp. 901-904, May 2006.
63. [OOPSLA 04 SRC] Tao Xie. Automatic Identification of Common and Special Object-Oriented Unit Tests. In *Proceedings of the 17th Annual ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications (Companion) (OOPSLA 2004 Companion)*, Vancouver, Canada, pp. 324-325, October 2004.

Refereed Workshop Publications (26)

1. [AST 09] Madhuri R Marri, Tao Xie, Nikolai Tillmann, Jonathan de Halleux, and Wolfram Schulte. An Empirical Study of Testing File-System-Dependent Software with Mock Objects. In *Proceedings of the 4th International Workshop on Automation of Software Test (AST 2009)*, Business and Industry Case Studies, Vancouver, Canada, pp. 149-153, May 2009.
2. [SUITE 09] Madhuri R Marri, Suresh Thummalapenta, and Tao Xie. Improving Software Quality via Code Searching and Mining. In *Proceedings of the First International Workshop on Search-Driven Development – Users, Infrastructure, Tools and Evaluation (SUITE 2009)*, Vancouver, Canada, pp. 33-36, May 2009.
3. [CSIIRW 09] Ting Yu, Dhivya Sivasubramanian, and Tao Xie. Security Policy Testing via Automated Program Code Generation (Extended Abstract). In *Proceedings of Annual Cyber Security and Information Intelligence Research Workshop (CSIIRW 2009)*, Oak Ridge, TN, pp. 1-4, April 2009.
4. [Mutation 09] Tao Xie, Nikolai Tillmann, Jonathan de Halleux, and Wolfram Schulte. Mutation Analysis of Parameterized Unit Tests. In *Proceedings of the 4th International Workshop on Mutation Analysis (Mutation 2009)*, Denver, Colorado, pp. 177-181, April 2009.
5. [WODA 08] Alessandro Orso and Tao Xie. BERT: Behavioral Regression Testing. In *Proceedings of the International Workshop on Dynamic Analysis (WODA 2008)*, Seattle, WA, pp. 36-42, July 2008.
6. [TAV-WEB 08] Nuo Li, JeeHyun Hwang, and Tao Xie. Multiple-Implementation Testing for XACML Implementations. In *Proceedings of the Workshop on Testing, Analysis and Verification of Web Software (TAV-WEB 2008)*, Seattle, WA, pp. 27-33, July 2008.
7. [SSEAT 08] Tao Xie, Nikolai Tillmann, Jonathan de Halleux, Wolfram Schulte. Method-Sequence Exploration for Automated Unit Testing of Object-Oriented Programs. Presented at Workshop on State-Space Exploration for Automated Testing (SSEAT 2008), Seattle, WA, July 2008.
8. [NSFNGS 08] Tao Xie, Mithun Acharya, Suresh Thummalapenta, and Kunal Taneja. Improving Software Reliability and Productivity via Mining Program Source Code. In *Proceedings of the NSF Next Generation Software Program Workshop at IPDPS 2008 (NSFNGS 2008)*, Miami, Florida, pp. 1-5, April 2008.
9. [ETX 07] Yoonki Song, Suresh Thummalapenta, and Tao Xie. UnitPlus: Assisting Developer Testing in Eclipse. In *Proceedings of the Eclipse Technology eXchange Workshop at OOPSLA 2007 (ETX 2007)*, Montréal, Québec, Canada, pp. 26-30, October 2007. **Best Student Paper Award.**
10. [IWSSE 07] Vincent C. Hu, Evan Martin, JeeHyun Hwang, and Tao Xie. Conformance Checking of Access Control Policies Specified in XACML. In *Proceedings of the 1st IEEE International Workshop on Security in Software Engineering (IWSSE 2007)*, Beijing, China, pp. 275-280, July 2007.
11. [SESS 07] Evan Martin and Tao Xie. Automated Test Generation for Access Control Policies via Change-Impact Analysis. In *Proceedings of the 3rd International Workshop on Software Engineering for Secure Systems (SESS 2007)*, Minneapolis, MN, pp. 5-11, May 2007.
12. [AST 07] Tao Xie, Kunal Taneja, Shreyas Kale, and Darko Marinov. Towards a Framework for Differential Unit Testing of Object-Oriented Programs. In *Proceedings of the 2nd International Workshop on Automation of Software Test (AST 2007)*, Minneapolis, MN, pp. 5-11, May 2007.
13. [WTAOP 07] Tao Xie and Jianjun Zhao. Perspectives on Automated Testing of Aspect-Oriented Programs. In *Proceedings of the 3rd Workshop on Testing Aspect-Oriented Programs (WTAOP 2007)*, Vancouver, Canada, pp. 7-12, March 2007.
14. [MUTATION 06] Prasanth Anbalagan and Tao Xie. Efficient Mutant Generation for Mutation Testing of Pointcuts in Aspect-Oriented Programs. In *Proceedings of the 2nd Workshop on Mutation Analysis (MUTATION 2006)*, Raleigh, NC, pp. 51-56, November 2006.
15. [SOAWS 06] Evan Martin, Suranjana Basu, and Tao Xie. Automated Robustness Testing of Web Services. In *Proceedings of the 4th International Workshop on SOA And Web Services Best Practices (SOAWS 2006)*, Portland, OR, October 2006.

16. [WTAOP 06] Prasanth Anbalagan and Tao Xie. APTE: Automated Pointcut Testing for AspectJ Programs. In *Proceedings of the 2nd Workshop on Testing Aspect-Oriented Programs (WTAOP 2006)*, Portland, Maine, pp. 27-32, July 2006.
17. [WTAOP 06] Jianjun Zhao, Tao Xie, and Nan Li. Towards Regression Test Selection for Aspect-Oriented Programs. In *Proceedings of the 2nd Workshop on Testing Aspect-Oriented Programs (WTAOP 2006)*, Portland, Maine, pp. 21-26, July 2006.
18. [POLICY 06] Evan Martin and Tao Xie. Inferring Access-Control Policy Properties via Machine Learning. In *Proceedings of the 7th IEEE Workshop on Policies for Distributed Systems and Networks (POLICY 2006)*, London, Ontario Canada, pp. 235-238, June 2006.
19. [MSR 06] Tao Xie and Jian Pei. MAPO: Mining API Usages from Open Source Repositories. In *Proceedings of the 3rd International Workshop on Mining Software Repositories (MSR 2006)*, Shanghai, China, pp. 54-57, May 2006.
20. [AST 06] Hai Yuan and Tao Xie. Substra: A Framework for Automatic Generation of Integration Tests. In *Proceedings of the 1st Workshop on Automation of Software Test (AST 2006)*, Shanghai, China, pp. 64-70, May 2006.
21. [RETR 05] Hai Yuan and Tao Xie. Automatic Extraction of Abstract-Object-State Machines Based on Branch Coverage. In *Proceedings of the 1st International Workshop on Reverse Engineering To Requirements at WCRE 2005 (RETR 2005)*, Pittsburgh, Pennsylvania, pp. 5-11, November 2005.
22. [WTAOP 05] Tao Xie, Jianjun Zhao, Darko Marinov, and David Notkin. Automated Test Generation for AspectJ Programs. In *Proceedings of the AOSD 2005 Workshop on Testing Aspect-Oriented Programs (WTAOP 2005)*, Chicago, March 2005.
23. [SAVCBS 04] Tao Xie and David Notkin. Automatic Extraction of Sliced Object State Machines for Component Interfaces. In *Proceedings of the 3rd Workshop on Specification and Verification of Component-Based Systems at ACM SIGSOFT 2004/FSE-12 (SAVCBS 2004)*, Newport Beach, California, pp. 39-46, October 31-November 1, 2004.
24. [FATES 03] Tao Xie and David Notkin. Mutually Enhancing Test Generation and Specification Inference. In *Proceedings of the 3rd International Workshop on Formal Approaches to Testing of Software (FATES 2003)*, LNCS Vol. 2931, Springer, Montreal, Canada, pp. 60-69, October 2003. Springer-Verlag.
25. [WODA 03] Tao Xie and David Notkin. Exploiting Synergy between Testing and Inferred Partial Specifications. In *Proceedings of ICSE 2003 Workshop on Dynamic Analysis (WODA 2003)*, Portland, Oregon, pp. 17-20, May 2003.
26. [EDSER 02] Tao Xie and David Notkin. Macro and Micro Perspectives on Strategic Software Quality Assurance in Resource Constrained Environments. In *Proceedings of the 4th International Workshop on Economics-Driven Software Engineering Research (EDSER-4)*, Orlando, Florida, pp. 66-70, May 2002.

Proceedings Edited (3)

1. Eleni Stroulia, Kostas Kontogiannis, and Tao Xie. Editors of Proceedings of the 25th IEEE International Conference on Software Maintenance (ICSM 2009). IEEE Computer Society Press, 2009.
2. Paolo Tonella, Massimiliano Di Penta, Arie Van Deursen, Tao Xie. Editors of Proceedings of International Workshop on Web Testing (WebTest 2009). IEEE Computer Society Press, 2009.
3. Tevfik Bultan and Tao Xie. Editors of Proceedings of Workshop on Testing, Analysis and Verification of Web Software (TAV-WEB 2008). ACM Press, 2008.

Invited and Contributed Research Presentations (102)

Invited Research Presentations (58)

1. "Data Mining for Software Engineering: Achievements and Challenges." Invited talk, Department of Computer Science, East Carolina University, Greenville, NC, November 2009.

2. "Automated Developer Testing: Achievements and Challenges." Invited talk, Department of Computer Science, Virginia Polytechnic Institute and State University, Blacksburg, VA, October 2009.
3. "Automated Developer Testing: Achievements and Challenges." Invited talk, Department of Computer and Information Science, Indiana University/Purdue University at Indianapolis, Indianapolis, IN, October 2009.
4. "Automated Developer Testing: Achievements and Challenges." Invited talk, the Institute of Software, Chinese Academy of Sciences, Beijing, China, June 2009.
5. "Data Mining for Software Engineering: Achievements and Challenges." Invited talk, Software Engineering Institute, East China Normal University, Shanghai, China, June 2009.
6. "Improving Software Productivity and Quality via Mining Program Source Code." Invited talk, Department of Computer Science, Nanjing University, Nanjing, China, June 2009.
7. "Automated Developer Testing: Achievements and Challenges." Invited talk, Department of Computer Science and Engineering, Hong Kong University of Science and Technology, China, June 2009.
8. "Automated Developer Testing: Achievements and Challenges." Invited talk, Department of Computer Science and Engineering, The Chinese University of Hong Kong, Hong Kong, China, June 2009.
9. "Automated Developer Testing: Achievements and Challenges." Invited talk, Department of Computer Science and Information Engineering, National Taiwan University, Taipei, Taiwan, June 2009.
10. "Automated Developer Testing: Achievements and Challenges." Invited talk, Department of Computer Science, Tunghai University, Taichung, Taiwan, June 2009.
11. "Automated Developer Testing: Achievements and Challenges." Invited talk, Department of Computer Science, National Tsing Hua University, Hsinchu, Taiwan, June 2009.
12. "Automated Developer Testing: Achievements and Challenges." Invited talk, Department of Computer Science, Tsinghua University, Beijing, China, June 2009.
13. "Automated Developer Testing: Achievements and Challenges." Invited talk, Department of Computer Science, Peking University, Beijing, China, June 2009.
14. "Mining Natural Language Information in Software Engineering." Invited talk, Protocol Engineering Team, Microsoft, Beijing, China, June 2009.
15. "Parameterized Unit Testing: Principles, Techniques, and Applications in Practice." Invited talk, Protocol Engineering Team, Microsoft, Beijing, June 2009.
16. "Fitness-Guided Path Exploration in Automated Test Generation." Invited talk, Department of Computer Science and Engineering, Michigan State University, November 2008.
17. "Fitness-Guided Path Exploration in Automated Test Generation." Invited talk, Department of Computer Science, the College of William and Mary, October 2008.
18. "Improving Software Reliability via Automated Static and Dynamic Analysis." Invited talk, FDA Office of Science and Engineering Laboratories, Electrical and Software Engineering Group, October 2008.
19. "Improving Software Productivity and Quality via Mining Program Source Code." Invited talk, Department of Computer Science, Drexel University, Philadelphia, PA, September 2008.
20. "Systematic Testing and Verification of Security Policies." Invited talk. National Institute of Standards and Technology (NIST) Computer Security Division Seminar, August 2008.
21. "Fitness-Guided Path Exploration in Dynamic Symbolic Execution." Invited talk, Foundation of Software Engineering Group, Microsoft Research, July 2008.
22. "Improving Software Productivity and Quality via Mining Program Source Code", Invited talk, Department of Electrical & Computer Engineering, Clarkson University Potsdam, NY, April 2008.
23. "Improving Software Productivity and Quality via Mining Program Source Code", Invited talk, Accenture Technology Labs Chicago, IL, Oct 2007.
24. "Improving Software Productivity and Quality via Mining Program Source Code", Invited talk, Motorola Labs Schaumburg, IL, Oct 2007.

25. "Improving Software Productivity and Quality via Mining Program Source Code", Invited talk, Lane Department of Computer Science and Electrical Engineering, West Virginia University Morgantown, WV, Sept 2007.
26. "Improving Automation in Developer Testing: Achievements and Challenges", Conference talk, Triangle Information Systems Quality Association Conference Chapel Hill, NC, Sept 2007.
27. "Improving Programmer Productivity via Mining Program Source Code", Invited talk, Department of Computer Science and Engineering, Hong Kong University of Science and Technology Hong Kong, China, Aug 2007.
28. "Improving Programmer Productivity via Mining Program Source Code", Invited talk, Department of Computer Science and Engineering, The Chinese University of Hong Kong Hong Kong, China, Aug 2007.
29. "Mining Software Engineering Data", Invited talk, Software Engineering Institute, Peking University Beijing, China, July 2007.
30. "Improving Effectiveness of Automated Software Testing in the Absence of Specifications", Invited talk, Department of Computer Science, Beihang University Beijing, China, July 2007.
31. "Research Methodology on Software Testing", Software Engineering Research Group, Department of Computer Science and Engineering, Hong Kong University of Science and Technology, Hong Kong, China, July 2007.
32. "Search-Based Symbolic Method Sequence Exploration for OO Unit Test Generation", Invited talk, FSE Group at Microsoft Research, Redmond, WA, June 2007.
33. "Improving Programmer Productivity via Mining Program Source Code", Invited talk, Department of Computer Science, University of Calgary, Canada, May 2007.
34. "Improving Effectiveness of Automated Software Testing in the Absence of Specifications", Invited talk, Department of Computing, Oxford Brookes University Oxford, UK, Dec 2006.
35. "Automated Testing of Aspect-Oriented Programs", Invited talk, 10th Analysis, Slicing and Transformation Research Network Workshop (ASTReNet), London, UK, Dec 2006.
36. "Regression Testing and Test Selection" Invited talk, 10th Analysis, Slicing and Transformation Research Network Workshop (ASTReNet), London, UK, Dec 2006.
37. "Improving Effectiveness of Automated Software Testing in the Absence of Specifications", Invited talk, UNC Charlotte, College of Computing and Informatics Charlotte, NC, Nov 2006.
38. "Improving Effectiveness of Automated Software Testing in the Absence of Specifications," Five invited talks at Shanghai Jiaotong University, Fudan University, Tsinghua University, Peking University, and Chinese Academy of Science, May-June 2006.
39. "Data Mining for Software," Invited talk at Fudan University, May 2006.
40. "Towards Systematic Testing of Access Control Policies," Invited talk at Foundation of Software Engineering Group, Microsoft Research, April 2006.
41. "Automated Software Testing in the Absence of Specifications," Invited talk at University of Delaware, Newark, DE, November 2005.
42. "Automated Test-Input Generation," Invited guest lecture at Georgia Institute of Technology, Atlanta, GA, November 2005.
43. "Improving Effectiveness of Automated Software Testing," Invited talk at Pennsylvania State University, University Park, PA, March 2005.
44. "Improving Effectiveness of Automated Software Testing", Invited job talk at Purdue University, February 2005.
45. "Improving Effectiveness of Automated Software Testing", Invited job talk at University of Waterloo, March 2005.
46. "Improving Effectiveness of Automated Software Testing", Invited job talk at University Nebraska-Lincoln, March 2005.
47. "Improving Effectiveness of Automated Software Testing", Invited job talk at McGill University., March 2005.

48. "Improving Effectiveness of Automated Software Testing", Invited job talk at North Carolina State University, March 2005.
49. "Improving Effectiveness of Automated Software Testing", Invited job talk at George Mason University, March 2005.
50. "Improving Effectiveness of Automated Software Testing", Invited job talk at Hong Kong University of Science and Technology, March 2005.
51. "Improving Effectiveness of Automated Software Testing", Invited job talk at IBM T. J. Watson Research Center, April 2005.
52. "Strategic Automated Software Testing in the Absence of Specifications," Invited talk at Parasoft Co., November 2004.
53. "Automated Test Generation By Avoiding Redundant Tests," Invited talk at Foundation of Software Engineering Group and Testing, Verification and Measurement Group, Microsoft Research, October 2004.
54. "Automated Software Testing with Inferred Program Properties," Invited talk at Agitar Software, Inc., July 2004.
55. "Mutually Enhancing Test Generation and Specification Inference," Invited talk at Foundation of Software Engineering Group, Microsoft Research, August 2003.
56. "Aggregation Visualization/Splitting and Performance Concern Discovery for Java Performance Analysis," Summer intern talk at IBM T. J. Watson Research Center, Hawthorne, September 2002.
57. "Workflow and Software Process Modelling & Automation at Avaya," Summer intern talk at Avaya Labs Research, Basking Ridge, September 2001.
58. "Object Oriented Software Quality Evaluation Technology," Invited talk at Ricoh Company, Ltd. Tokyo, July 2000.

Contributed Conference/Workshop Presentations (37)

59. "ACPT: Access Control Policy Testing System." Workshop presentation, NIST/NSA Privilege (Access) Management Workshop (PMW 2009), Gaithersburg, MD, September 2009.
60. "Benchmarking for Object-Oriented Unit Test Generation." Workshop presentation, Workshop on State-space Exploration for Automated Testing (SSEAT 2009), Chicago, IL, July 2009.
61. "Time-Aware Test-Case Prioritization using Integer Linear Programming." Conference presentation, the 2009 International Symposium on Software Testing and Analysis (ISSTA 2009), Chicago, IL, July 2009.
62. "An Empirical Study of Testing File-System-Dependent Software with Mock Objects." Workshop presentation, the 4th International Workshop on Automation of Software Test (AST 2009), Vancouver, Canada, May 2009.
63. "Improving Software Quality via Code Searching and Mining." Workshop presentation, the First International Workshop on Search-Driven Development "C Users, Infrastructure, Tools and Evaluation (SUITE 2009), Vancouver, Canada, May 2009.
64. "Mutation Analysis of Parameterized Unit Tests." Workshop presentation, the 4th International Workshop on Mutation Analysis (Mutation 2009), Denver, Colorado, April 2009.
65. "Parameterized Unit Testing: Principles, Techniques, and Applications in Practice." Conference presentation, The Triangle Information Systems Quality Association Conference (TISQA 2009), Chapel Hill, March 2009.
66. "Automated Test Data Generation for Aspect-Oriented Programs." Conference presentation, the 8th International Conference on Aspect-Oriented Software Development (AOSD 2009), Charlottesville, Virginia, March 2009.

67. "Improving Structural Testing of Object-Oriented Programs via Integrating Evolutionary Testing and Symbolic Execution." Conference presentation, the 23rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2008), L'Aquila, Italy, September 2008.
68. "Multiple-Implementation Testing for XACML Implementations." Workshop presentation, the Workshop on Testing, Analysis and Verification of Web Software (TAV-WEB 2008), Seattle, WA, July 2008.
69. "Method-Sequence Exploration for Automated Unit Testing of Object-Oriented Programs." Workshop presentation, the Workshop on State-Space Exploration for Automated Testing (SSEAT 2008), Seattle, WA, July 2008.
70. "Searching and Mining Open Source Code from the Web." ASE 2008 PC Workshop presentation. Google Tech Talks. Mountain View, CA, June 2008.
71. "An Approach to Detecting Duplicate Bug Reports using Natural Language and Execution Information." Conference talk. in the 30th International Conference on Software Engineering (ICSE 2008), Leipzig, Germany, May 2008.
72. "SpotWeb: Detecting Framework Hotspots via Mining Open Source Repositories on the Web". Conference talk. in the Working Conference on Mining Software Repositories (MSR 2008), Position Paper, Leipzig, Germany, May 2008.
73. "Improving Software Reliability and Productivity via Mining Program Source Code." Workshop talk, NSF Next Generation Software Program Workshop at IPDPS 2008 (NSFNGS 2008), April 2008.
74. "Improving Automation in Developer Testing". Workshop talk, ISSTA 2008 PC Workshop on State of the Art in Testing and Analysis Day (ISSTA PC WS 2008), Piscataway, NJ, March, 2008.
75. "Recommendation Systems for Code Reuse". Workshop talk, Bellairs Workshop on Software Analysis for Recommendation Systems (SARS 2008), Barbados, February, 2008.
76. "Improving Automation in Developer Testing: Achievements and Challenges", Conference talk, International Verify Conference Arlington, VA, Oct 2007.
77. "Conformance Checking of Access Control Policies Specified in XACML", Presentation in the 1st IEEE International Workshop on Security in Software Engineering (IWSSE 2007), Beijing, China, July 2007.
78. "Towards a Framework for Differential Unit Testing of Object-Oriented Programs", Presentation in the 2nd International Workshop on Automation of Software Test (AST 2007), Minneapolis, MN, May 2007.
79. "Automated Inference of Pointcuts in Aspect-Oriented Refactoring", Presentation in the 29th International Conference on Software Engineering (ICSE 2007), Minneapolis, MN, May 2007.
80. "A Fault Model and Mutation Testing of Access Control Policies", Presentation in the 16th International Conference on World Wide Web (WWW 2007), Security, Privacy, Reliability, and Ethics Track, Banff, Alberta, Canada, May 2007.
81. "Detecting Redundant Unit Tests for AspectJ Programs", Presentation in IEEE International Symposium on Software Reliability Engineering (ISSRE), Raleigh, NC, Nov 2006.
82. "Efficient Mutant Generation for Mutation Testing of Pointcuts in Aspect-Oriented Programs", Presentation in Workshop on Mutation Analysis (Mutation), Raleigh, NC, Nov 2006.
83. "Improving Effectiveness of Automated Software Testing in the Absence of Specifications", Presentation in IEEE International Conference on Software Maintenance (ICSM), Philadelphia, PA, Sept 2006.
84. "Augmenting Automatically Generated Unit-Test Suites with Regression Oracle Checking", Presentation in European Conference on Object-Oriented Programming (ECOOP), Nantes, France, July 2006.
85. "MAPO: Mining API Usages from Open Source Repositories", Presentation in International Workshop on Mining Software Repositories (MSR), Shanghai, China, May 2006.
86. "Substra: A Framework for Automatic Generation of Integration Tests", Presentation in Workshop on Automation of Software Test (AST), Shanghai, China, May 2006.

87. "Automatically Identifying Special and Common Unit Tests for Object-Oriented Programs," Presentation in the 16th IEEE International Symposium on Software Reliability Engineering (ISSRE 2005), Chicago, November 2005.
88. "Automated Test Generation for AspectJ Programs", Presentation in the AOSD 2005 Workshop on Testing Aspect-Oriented Programs (WTAOP), Chicago, March 2005
89. "Automatic Extraction of Object-Oriented Observer Abstractions from Unit-Test Executions," Presentation in the International Conference on Formal Engineering Methods (ICFEM), Seattle, November 2004.
90. "Automatic Extraction of Sliced Object State Machines for Component Interfaces," Presentation in the 3rd Workshop on Specification and Verification of Component-Based Systems at ACM SIGSOFT 2004/FSE-12 (SAVCBS), Newport Beach, October, 2004.
91. "Automatic Identification of Common and Special Object-Oriented Unit Tests," Semifinal talk in the ACM SIGPLAN Student Research Competition at OOPSLA 04, Vancouver, October 2004.
92. "Checking Inside the Black Box: Regression Testing Based on Value Spectra Differences," Presentation in the IEEE International Conference on Software Maintenance (ICSM), Chicago, September 2004.
93. "Tool-Assisted Unit Test Selection Based on Operational Violations," Presentation in the IEEE International Conference on Automated Software Engineering (ASE), Montreal, October 2003.
94. "Mutually Enhancing Test Generation and Specification Inference," Presentation in the International Workshop on Formal Approaches to Testing of Software (FATES), Montreal, October 2003.
95. "Exploiting Synergy between Testing and Inferred Partial Specifications," Presentation in the ICSE 2003 Workshop on Dynamic Analysis (WODA), Portland, May 2003.

Contributed Tutorial Presentations (7)

96. "Parameterized Unit Testing: Principles, Techniques, and Applications in Practice." Tutorial presentation, the International Conference on Object Oriented Programming, Systems, Languages and Applications. (OOPSLA 2009), Orlando, Florida, October 2009.
97. "Parameterized Unit Testing: Principles, Techniques, and Applications in Practice." Tutorial presentation, the 31st International Conference on Software Engineering (ICSE 2009), Vancouver, Canada, May 2009.
98. "Mining Software Engineering Data." Tutorial presentation, the 31st International Conference on Software Engineering (ICSE 2009), Vancouver, Canada, May 2009.
99. "Mining Software Engineering Data", Tutorial presentation, the 30th International Conference on Software Engineering (ICSE 2008), Leipzig, Germany, May 2008.
100. "Mining for Software Reliability", Tutorial presentation in the International Conference on Data Mining (ICDM 2007), Omaha, NE, Oct 2007.
101. "Mining Software Engineering Data", Tutorial presentation in the 29th International Conference on Software Engineering (ICSE 2007), Minneapolis, MN, May 2007.
102. "Data Mining for Software Engineering", Tutorial presentation in ACM International Conference on Knowledge Discovery and Data Mining (KDD), Philadelphia, PA, Aug 2006.

Selected Awards and Honors

- 2009 National Science Foundation Faculty Early Career Development (CAREER) Award
- 2009 One of the 12 best reviewers among 334 reviewers of the ACM TOSEM journal over 2007/08
- 2009 Inducted into Sigma Xi, the Scientific Research Society
- 2009 IBM Faculty Award
- 2008 IBM Faculty Award

- 2008 IBM Jazz Innovation Award
- 2007 Best Student Paper Award in ETX 2007
- 2006 NCSU Nominee for the Microsoft New Faculty Fellowship Award (one nomination from each university)
- 2006 ASE 2006 paper nominated for the Best Paper Award in ASE 2006
- 2005 The 3rd Place of 2005 ACM Student Research Competition Grand Finals, awarded at the 2005 ACM Award banquet.
- 2004 The 3rd Place of 2004 ACM SIGPLAN Student Research Competition at OOPSLA 04.
- 2004 ICSM 2004 paper selected as one of the seven Best Papers in ICSM 2004 that appeared in a special issue of IEEE TSE transaction.
- 2003 ASE 2003 paper nominated for the Best Paper Award in ASE 2003 and selected as one of the three best papers in ASE 2003 that appeared in a special issue of ASE journal.
 - The tools in ASE 2003 paper are highlighted in the testdriven.com newsletter #1, <http://www.testdriven.com/modules/news/article.php?storyid=71>, December, 2003.

III.B. RESEARCH PROJECT RECORD

Funded Research Proposals (total amount: \$1,746,138, my sole share of the amount: \$1,706,138)

1 NSF CAREER award, 4 other NSF awards, 2 ARO awards, 1 NIST supplement award, 1 NSA/CACC award (approved and in process).

* after title indicates lead PI

1. Title: *SHF:Small:Collaborative Research: Constraint-Based Generation of Database States for Testing Database Applications**
 Agency/Program: National Science Foundation CCF-0915400
 PI: Tao Xie
 Duration: 09/01/2009 - 08/31/2012
 Amount: \$249,880.00

2. Title: *CAREER: Cooperative Developer Testing with Test Intentions**
 Agency/Program: National Science Foundation CCF-0845272
 PI: Tao Xie
 Duration: 08/15/2009 - 08/14/2014
 Amount: \$425,000

3. Title: *Mining Program Source Code for Improving Software Quality**
 Agency/Program: Army Research Office W911NF-08-1-0443
 PI: Tao Xie
 Duration: 09/01/2008 - 08/30/2011
 Amount: \$300,000

4. Title: *Collaborative Research: SoD-TEAM: Designing Tests For Evolving Software Systems**
 Agency/Program: National Science Foundation CCF-0725190
 PI: Tao Xie (collaborating PIs: Alex Orso and Mary Jean Harrold from Georgia Tech with a

separate budget, and the amount below is solely my share)

Duration: 01/01/2008 - 12/31/2010

Amount: \$245,000

5. Title: *CT: Collaborative Research: A New Approach to Testing and Verification of Security Policies**
Agency/Program: National Science Foundation CNS-0716579
PI: Tao Xie (collaborating PI: Alex Liu from Michigan State University with a separate budget, and the amount below is solely my share)
Duration: 08/01/07 - 07/31/10
Amount: \$227,275 (including NIST supplement \$33,275)
6. Title: *CSR---SMA: Improving Software System Reliability via Mining Properties for Software Verification**
Agency/Program: National Science Foundation CNS-0720641
PI: Tao Xie
Duration: 08/01/2007 - 07/31/2008
Amount: \$20,000
7. Title: *Improving Software Dependability Via Mining Properties For Software Verification**
Agency/Program: Army Research Office W911NF-07-1-0431
PI: Tao Xie
Duration: 06/18/2007 - 03/17/2008
Amount: \$50,000
8. Title: *Regression Testing and Programming Tutoring via Automated Testing**
Agency/Program: National Security Agency (NSA) via the Center for Advanced Computing and Communication (CACC), NCSU
PI: Tao Xie
Duration: 1/1/2010 - 12/31/2010
Amount: \$45,000
9. Title: *Integrating Static and Dynamic Analysis to Improve Automatic Unit-Test Generation**
Agency/Program: The Center for Advanced Computing and Communication (CACC), NCSU
PI: Tao Xie
Co-PI: Jun Xu
Duration: Jul. 1, 2006 – Jun. 30, 2007
Amount: \$40,000

10. Title: *On Expediting Software Engineer AWAREness of Anomalous Code*
Agency/Program: The Center for Advanced Computing and Communication (CACC), NCSU
PI: Laurie Williams
Co-PI: Tao Xie
Duration: Jul. 1, 2006 – Jun. 30, 2007
Amount: \$40,000

11. Title: *FRPD: A Framework and Tool Supports for Automatic Generation and Selection of Component Integration Tests**
Agency/Program: College of Engineering, NC State University
Duration: Jan. 1, 2006 – Dec. 31, 2006
PI: Tao Xie
Amount: \$6,000

12. Title: *Automated Security Testing of Virtual Machine Monitors*
Agency/Program: Secure Open Systems Initiative (SOSI), NCSU
PI: Tao Xie
Duration: Aug. 15, 2008 – Aug. 14, 2009
Amount: \$52,983 (actual research expenditure)

13. Title: *Software Testing and Analysis for Open Source Security*
Agency/Program: Secure Open Systems Initiative (SOSI), NCSU
PI: Tao Xie
Duration: Aug. 15, 2009 – Aug. 14, 2010
Amount: \$45,000 (projected research expenditure)

Other Funding - Internal (\$15,000)

1. Title: *Automated Software Testing**
Agency/Program: Undergraduate Research Grant of College of Engineering and Computer Science Dept., NCSU
PI: Tao Xie
Duration: 02/01/2009 - 05/16/2009
Amount: \$10,000

2. Title: *Mining Software Engineering Data**
Agency/Program: Undergraduate Research Grant of College of Engineering and Computer Science Dept., NCSU
PI: Tao Xie
Duration: 02/01/2008 - 05/16/2008

Amount: \$5,000

Gifts in Cash (total amount: \$89,820)

1. Title: *Mining Bug Reports and Test Execution**
Agency/Program: 2008 IBM Jazz Innovation award
PI: Tao Xie
Duration: Not limited
Amount: \$20,000

2. Title: *Deep Root-Cause Performance Analysis: Integration and Navigation from a Load Testing Tool (continuation)**
Agency/Program: 2009 IBM Faculty award
PI: Tao Xie
Duration: Not limited
Amount: \$20,000

3. Title: *Deep Root-Cause Performance Analysis: Integration and Navigation from a Load Testing Tool**
Agency/Program: 2008 IBM Faculty award
PI: Tao Xie
Duration: Not limited
Amount: \$20,000

4. Title: *Automated Software Testing**
Agency/Program: Microsoft Research
PI: Tao Xie
Duration: Not limited
Amount: \$15,000

5. Title: *Mining Software Defect Data**
Agency/Program: ABB, Inc.
PI: Tao Xie
Duration: Not limited
Amount: \$14,820

Gifts in Kind (total amount: \$59,450)

1. Testing Tool for Student Use (Agitar Agitator) (2006) *
Agency: Agitar Software, Inc.
PI: Tao Xie
Amount: \$44,000
2. Testing Tool for Student Use (Test Mentor and Enhanced JUnit) (2005) *
Agency: SilverMark, Inc.
PI: Tao Xie
Amount: \$15,450

III.C. PARTICIPATION IN CENTERS, CONSORTIA AND OTHER ORGANIZED SCHOLARLY EFFORTS

- Research Ethics Senior Fellow, NCSU Research and Professional Ethics Program, 2005-2008
- Faculty Member, NCSU Institute for Advanced Analytics, 2007-Present
- Working Group Member, NCSU Institute for Advanced Analytics, 2006-2007
- Faculty Member, NCSU Center for Advanced Computing and Communication (CACC), 2006-Present
- Faculty Member, Departmental Secure Open Systems Initiative (SOSI), 2008-Present
- Faculty Member, Departmental Center for Open Software Engineering (COSE), 2007-Present
- A member of NIST Automated Combinatorial Testing for Software Working Group
- A member of the AOAsia network of Asian AOSD Researchers

VI. SERVICE TO THE UNIVERSITY AND PROFESSIONAL SOCIETIES

VIA. UNIVERSITY SERVICES

- Advisory Board Member, NCSU Assistant Professors' Learning Community, 2009-Present
- Member, mailing list/web moderator, NCSU Multicultural Faculty Group (http://www.ncsu.edu/diversity/faculty_staff/MulticulturalFacultyGroup.php), 2009-Present
- Research Ethics Senior Fellow, NCSU Research and Professional Ethics Program, 2005-2008
- Faculty Member, NCSU Institute for Advanced Analytics, 2007-Present
- Working Group Member, NCSU Institute for Advanced Analytics, 2006-2007
- Faculty Member, NCSU Center for Advanced Computing and Communication (CACC), 2006-Present
- Member, Departmental Strategic Planning Committee (voted), 2009-Present
- Member, Departmental Undergraduate Curriculum Committee, 2007-2009
- Member, Departmental Faculty Recruiting Sub-area Committee, 2007-2009
- Member, Departmental Computer Steering Committee 2005-2006
- Faculty Member, Departmental Secure Open Systems Initiative (SOSI), 2008-Present
- Faculty Member, Departmental Center for Open Software Engineering (COSE), 2007-Present
- Meeting with prospective students in graduate student recruiting days, 2006, 2007
- Meeting with various faculty candidates, 2007-2009

- Meeting with various department visitors, 2005-2009
- Host visitors: Yannis Smaragdakis (U Mass, Spring 2009), Xiaoming Li (Peking University, Fall 2008), Darko Marinov (UIUC, Summer 2008), Tom Ball (Microsoft Research, Spring 2008), Miryung Kim (UW, Spring 2008)

VLB. STATE and REGIONAL PROFESSIONAL ACTIVITIES AND COMMITTEE WORK

N/A

VLC. NATIONAL AND INTERNATIONAL PROFESSIONAL ACTIVITIES AND COMMITTEE WORK

Served on 33 Conference Program Committees, 25 Workshop Program Committees, and 4 Conference Organizing Committee, as Program Co-Chairs or Co-Organizers of 8 Conferences, Seminars, or Workshops. Served as external reviewers for 11 conferences and workshops.

- ACM SIGSOFT History Liaison, ACM SIGSOFT Executive Committee Member (2009-Present)
- Founder and facilitator, Software Engineering Research Community Facebook group, including **964** members as of August 2, 2009, 2008-Present
- Founder and facilitator, SIGSOFT Peer-Support Group for Junior Faculty in Software Engineering, 2008-Present
- Active Member, MentorNet, E-Mentoring Network for Diversity in Engineering and Science, (2007-Present, having mentored 5 minority students)
- **Research Proposal Reviewer/Panelist (10)**
 - National Science Foundation (NSF), 2006, 2007, 2009
 - Army Research Office (ARO), US, 2008
 - North Dakota EPSCoR Office, US, 2009
 - Dutch Research Council (NWO), Netherlands, 2008
 - Research Grants Council of Hong Kong (RGC), 2007, 2009
 - Maryland Industrial Partnerships Program (MIPS), 2007
 - Maryland Technology Development Corporation (TEDCO), 2006
- **Program Co-Chair and Co-Organizer (8)**
 - PC Co-Chair, IEEE International Conference on Software Maintenance (ICSM), 2009
 - Student Papers Track Program Co-Chair, IEEE International Conference on Software Testing, Verification and Validation (ICST), 2008
 - Co-Organizer, International Workshop on Web Testing (WebTest), 2009
 - Co-Organizer, Workshop on State-Space Exploration for Automated Testing (SSEAT), 2009
 - Co-Organizer, Workshop on Testing, Analysis and Verification of Web Software (TAV-WEB), 2008
 - Co-Organizer, State of the Art in Testing and Analysis Day (SATA) co-located with the PC meeting for ISSTA 2009
 - Co-Organizer, Dagstuhl Seminar on Practical Software Testing: Tool Automation and Human Factors, 2010
 - Co-Organizer, Dagstuhl Seminar on Mining Programs and Processes, 2007
- **Other Organizing Committees (4)**
 - Tutorial Co-Chair, IEEE/ACM International Conference on Automated Software Engineering (ASE 2009)
 - PC Meeting Facilitator, International Symposium on Software Testing and Analysis (ISSTA 2009)
 - North American Publicity Chair, IEEE International Conference on Software Testing, Verification and Validation (ICST 2009)
 - Publicity Chair, International Symposium on Software Reliability Engineering (ISSRE), 2006

- **Conference Program Committee (33):**

- International Conference on Software Engineering (ICSE), 2010
- IEEE International Conference on Software Maintenance (ICSM), 2010
- International Working Conference on Mining Software Repositories (MSR), 2010
- Haifa Verification Conference (HVC), 2009
- International Symposium on Software Testing and Analysis (ISSTA), 2009
- IEEE/ACM International Conference on Automated Software Engineering (ASE), 2009 (Expert-Review Panel Member)
- International World Wide Web Conference (WWW), Security and Privacy Track, 2009
- IEEE International Conference on Software Testing, Verification and Validation (ICST), 2009
- International Working Conference on Mining Software Repositories (MSR), 2009
- International Symposium on Search Based Software Engineering (SSBSE), 2009
- Asia-Pacific Symposium on Internetware (Internetware 2009)
- International Symposium on Software Testing and Analysis (ISSTA), 2008
- IEEE/ACM International Conference on Automated Software Engineering (ASE), 2008
- Doctoral Symposium, IEEE/ACM International Conference on Automated Software Engineering (ASE), 2008
- Workshops, ACM SIGSOFT International Symposium on Foundations of Software Engineering (FSE), 2008
- IEEE International Conference on Software Testing, Verification and Validation (ICST), 2008
- IEEE International Conference on Software Maintenance (ICSM 2008)
- IEEE International Conference on Web Services (ICWS 2008)
- Student Papers Track, IEEE International Conference on Software Testing, Verification and Validation (ICST), 2008.
- IEEE/ACM International Conference on Automated Software Engineering (ASE), 2007
- International Conference on Aspect-Oriented Software Development (AOSD), 2007
- IEEE International Conference on Software Maintenance (ICSM), 2007
- International Conference on Tests And Proofs (TAP), 2007
- Haifa Verification Conference (HVC), 2007
- Hawaii International Conference on System Sciences (HICSS), Software Technology Track, Testing and Analysis MiniTrack, 2007
- Short Papers, International Symposium on Empirical Software Engineering and Measurement (ESEM).
- Haifa Verification Conference (HVC), 2006
- International Symposium on Software Reliability Engineering (ISSRE), 2006
- Fast Abstracts, IEEE International Symposium on Software Reliability Engineering (ISSRE), 2006
- International Conference on Quality Software (QSIC), 2006
- IEEE/ACM International Conference on Automated Software Engineering (ASE), 2006
- Doctoral Symposium, IEEE/ACM International Conference on Automated Software Engineering (ASE), 2006
- IBM Verification Conference (IBM Verification), 2005.

- **Workshop Program Committee (25):**

- Program Committee Member, International Workshop on Software Test Automation, Practice, and Standardization 2010

- International Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD 2009)
- International Workshop on Recommendation Systems for Software Engineering (RSSE), 2008
- IEEE International Workshop on Security in Software Engineering (IWSSE), 2008
- International Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD), 2008
- Workshop on Automation of Software Test (AST), 2008
- International Research Workshop on Advances and Innovations in Systems Testing (STEP), 2008.
- International Workshop on Security Testing (SECTEST), 2008
- Eclipse Technology eXchange Workshop (ETX), 2007
- Workshop on Specification and Verification of Component-Based Systems (SAVCBS), 2007
- Workshop on Web Quality, Verification and Validation (WQVV), 2007
- IEEE International Workshop on Testing for Emerging Software Technology (TEST), 2007
- Workshop on Mutation Analysis (Mutation), 2007
- International Workshop on Parallel and Distributed Systems: Testing and Debugging (PADTAD), 2007
- International Workshop on Dynamic Analysis (WODA), 2007
- Workshop on Automation of Software Test (AST), 2007
- Workshop on Testing of Aspect-Oriented Programs (WTAOP), 2007
- Workshop on Specification and Verification of Component-Based Systems (SAVCBS), 2006
- Workshop on Supporting Knowledge Collaboration in Software Development (KCSO), 2006
- International Workshop on Parallel and Distributed Systems: Testing and Debugging (PADTAD), 2006
- Workshop on Testing, Analysis and Verification of Web Services and Applications (TAV-WEB), 2006
- International Workshop on Dynamic Analysis (WODA), 2006
- Workshop on Automation of Software Test (AST), 2006
- International Workshop on Reverse Engineering To Requirements (RETR), 2005
- ACM SIGPLAN Student Research Competition (ACM SIGPLAN SRC), 2005
- **Conference Reviewer (11):**
 - IEEE International Symposium on Software Reliability Engineering (ISSRE), 2008
 - European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2007)
 - ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), 2007
 - European Conference on Object-Oriented Programming (ECOOP), 2007
 - ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI), 2007
 - International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS), 2007
 - ACM Southeast Conference (ACMSE), 2006
 - International Conference on Software Engineering (ICSE), 2006
 - International Conference on Aspect-Oriented Software Development (AOSD), 2005
 - Software Process Workshop (SPW), 2005

- ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools (PASTE), 2004
- **Journal Referee (14):**
 - IEEE Transaction on Software Engineering (TSE) (2005, 2006, 2007, 2008, 2009)
 - ACM Transactions on Software Engineering and Methodology (TOSEM) (2004, 2006, 2007, 2008, 2009)
 - IEEE Software (2005, 2008)
 - Software Testing, Verification and Reliability (STVR) (2007)
 - Automated Software Engineering: An International Journal (ASE) (2009)
 - Empirical Software Engineering (EMSE) (2006, 2007, 2008)
 - Journal of Systems and Software (JSS) (2007)
 - Information and Software Technology Journal (IST) (2005, 2007)
 - Software and Systems Modeling (SoSyM) (2006)
 - Journal of Software Maintenance and Evolution: Research and Practice (JSME) (2007)
 - IEEE Security & Privacy (S&P) (2007)
 - Data Mining and Knowledge Discovery (DAMI) (2007)
 - The Computer Journal (2006)
 - Journal of Computer Science and Technology (JCST) (2007)
- **Book reviewer (2):**
 - Cambridge University Press (2006, 2009)
 - McGraw-Hill (2005)