

Xiaoyin Wang

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Department of Computer Science
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Date of CV Revision: 6th Jan. 2017
Citizenship: China



Education

Sept. 2006- Jan. 2012	Ph.D., Computer Science, Peking University Advised by Prof. Hong Mei, and co-supervised by Prof. Lu Zhang and Prof. Tao Xie
Sept. 2002- Jul. 2006	Bachelor of Engineering, Computer Science, Harbin Institute of Technology

Research Interests

1. Software Evolution and Testing
2. Software Mining and Natural Language Processing
3. Program Analysis, especially String Analysis

Professional Experience

1. Assistant Professor, Department of Computer Science, University of Texas at San Antonio, Aug. 2013 -- now
2. Postdoctoral Researcher, School of EECS, UC Berkeley, Jan. 2012 -- Aug. 2013
3. Research Assistant, Software Engineering Institute, School of EECS, Peking University, Oct. 2006 -- Jan. 2012
4. Research Intern, Team of Software Analytics, Microsoft Research Asia, Aug. 2011 -- Dec. 2011
5. Research Fellow, School of Information Systems, Singapore Management University, Oct. 2008 -- Sept. 2009
6. Research Assistant, Research Center for Information Retrieval, School of Computer Science and Technology, Harbin Institute of Technology, Sept. 2004 -- Jul. 2006

Awards & Honors

1. Distinguished Ph.D. Dissertation Award, CCF (China Computer Federation, 10 awardees in all Computer Science PhD Students in China), 01/2013
2. Microsoft Research Asia Fellowship, Microsoft Research Asia (25 awardees in all Computer Science PhD Students in Asia), 09/2009

Publications

Journal Publications

1. A Survey on Bug Report Analysis
Jie Zhang, **Xiaoyin Wang**, Dan Hao, Bing Xie, Lu Zhang and Hong Mei
Sciences China (Information Sciences), Vol. 58, No. 2, pp. 1—24.
2. Predicting Consistency-Maintenance Requirement of Code Clones at Copy-and-Paste Time
Xiaoyin Wang, Yingnong Dang, Lu Zhang, Dongmei Zhang, Erica Lan, Hong Mei
IEEE Transactions on Software Engineering, Vol. 40, No. 8, 773--794, 2014.
3. Locating Need-to-Externalize Constant Strings for Software Internationalization with Generalized String Taint Analysis
Xiaoyin Wang, Lu Zhang, Tao Xie, Hong Mei, Jiasu Sun
IEEE Transactions on Software Engineering, Vol. 39, No. 4, 516--536, 2013.
4. Progress in Research on String Analysis (in Chinese)
Hong Mei, **Xiaoyin Wang**, Lu Zhang
Journal of Software, Vol. 24, No. 1, 37--49, 2012.
5. Checking Enforcement of Integrity Constraints in Database Applications based on Code Patterns
Hongyu Zhang, Hee Beng Kuan Tan, Lu Zhang, Xi Lin, **Xiaoyin Wang**, Chun Zhang, Hong Mei
Journal of Systems and Software, Vol. 84, No. 12, 2253--2264, 2011.
6. Test Input Reduction for Result Inspection to Facilitate Fault Localization
Dan Hao, Tao Xie, Lu Zhang, **Xiaoyin Wang**, Jiasu Sun, Hong Mei
Automated Software Engineering (ASE Journal), Vol. 17, No. 1, 5--31, 2010.
7. Enhancement of Code Search Results Using Syntax and Semantic Analysis (in Chinese)
Shi Liu, He Li, **Xiaoyin Wang**, Lu Zhang, Bing Xie,
Computer Science, Vol. 36, No. 8, 165--168, 2009.

Conference Publications

8. NetDroid: Summarizing Network Behaviors of Android Applications for Network Code Maintenance
Shaikh Mostafa, Rodney Rodriguez, and **Xiaoyin Wang**,
International Conference on Program Comprehension (ICPC), To Appear, May, 2017.
9. A Study of Behavioral Backward Incompatibility Bugs for Java Software Libraries,
Shaikh Mostafa, Rodney Rodriguez, and **Xiaoyin Wang**,
Poster Session, International Conference on Software Engineering (ICSE), To Appear, May, 2017.
10. Mining Readme Files to Support Automatic Building of Java Projects in Software Repositories
Foyzul Hassan and **Xiaoyin Wang**
Poster Session, International Conference on Software Engineering (ICSE), To Appear, May, 2017.
11. Conditional Dyck-CFL Reachability Analysis for Complete and Efficient Library Summarization
Hao Tang, Di Wang, Yingfei Xiong, Lingming Zhang, **Xiaoyin Wang**, Lu Zhang
Proceedings of 26th European Symposium on Programming (ESOP), to appear, Uppsala, Sweden, Apr. 2017.
12. A Study on Behavioral Backward Incompatibility Bugs for Java Libraries
Shaikh Mostafa, Rodney Rodriguez, **Xiaoyin Wang**
Proceedings of International Conference on Software Engineering (ICSE), Poster Track, to appear, Buenos Aries, Argentina, May. 2017.
13. PVDetector: A Detector of Privacy-Policy Violations for Android Apps
Rocky Slavin, **Xiaoyin Wang**, Mitra Bokaei Hosseini, William Hester, Ram Krishnan, Jaspreet Bhatia, Travis D. Breaux, Jianwei Niu
Proceedings of International Conference on Mobile Software Engineering and Systems (MobileSoft), pp. 299-300, Austin, Texas, May. 2016.
14. Toward a Framework for Detecting Privacy Policy Violation in Android Application Code
Rocky Slavin, **Xiaoyin Wang**, Mitra Bokaei Hosseini, William Hester, Ram Krishnan, Jaspreet Bhatia, Travis D. Breaux, Jianwei Niu
Proceedings of International Conference on Software Engineering (ICSE), pp. 25-36, Austin, Texas, May. 2016.
15. Experience Report: How is Dynamic Symbolic Execution Different from Manual Testing? - A Study on KLEE.
Xiaoyin Wang, Lingming Zhang, Philip Tanofsky
International Symposium on Software Testing and Analysis (ISSTA), pp. 199-210, Baltimore, Jul. 2015

16. An Empirical Study on the Status of Software Localization in Open Source Projects
Zeyad Alshaikh, Shaikh Mostafa, **Xiaoyin Wang**, Sen He
International Conference on Software Engineering and Knowledge Engineering (SEKE), pp. 692-695, Pittsburg, Jul. 2015
17. Summary-Based Context-Sensitive Data-Dependence Analysis in Presence of Callbacks
Hao Tang, **Xiaoyin Wang**, Lingming Zhang, Lu Zhang, Bing Xie, Hong Mei
ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL), pp. 83-95, Mumbai, India, Jan., 2015.
18. An Empirical Study on the Usage of Mocking Frameworks in Software Testing
Nahid Mostafa, **Xiaoyin Wang**
IEEE International Conference on Quality Software (QSIC), pp. 127-132, Oct. 2014, Dallas, USA.
19. NetworkProfiler: Towards Automatic Fingerprinting of Android Apps
Shuaifu Dai, Alok Tongaonkar, **Xiaoyin Wang**, Antonio Nucci, Dawn Song
The 32nd IEEE International Conference on Computer Communications (INFOCOM), pp. 809--817, Apr. 2013, Turin, Italy.
20. Automating Presentation Changes in Dynamic Web Applications via Collaborative Hybrid Analysis
Xiaoyin Wang, Lu Zhang, Tao Xie, Yingfei Xiong, Hong Mei,
Proceedings of ACM SIGSOFT Symposium on Foundations of Software Engineering (SIGSOFT FSE), article 16, Nov. 2012, Raleigh, US
21. Can I Clone This Piece of Code Here?
Xiaoyin Wang, Yingnong Dang, Lu Zhang, Dongmei Zhang, Eric Lan, Hong Mei
Proceedings of IEEE/ACM Conference on Automated Software Engineering (ASE), 170--179, Sept. 2012, Essen, Germany.
22. A History-Based Matching Approach to Identification of Framework Evolution
Sichen Meng, **Xiaoyin Wang**, Lu Zhang, Hong Mei,
Proceedings of International Conference on Software Engineering(ICSE), 353--363, June 2012, Zurich, Switzerland
23. Bug signature minimization and fusion
David Lo, Hong Cheng, **Xiaoyin Wang**
Proceedings of International Conference on High-Assurance Systems Engineering (HASE), 340--347, Nov. 2011, Miami, USA.
24. Locating Need-to-Translate Constant Strings in Web Applications
Xiaoyin Wang, Lu Zhang, Tao Xie, Hong Mei, and Jiasu Sun
Proceedings of ACM SIGSOFT Symposium on Foundations of Software

Engineering (SIGSOFT FSE), 87--96, Nov. 2010, Santa Fe, USA.

25. Matching Dependence-Related Queries in the System Dependence Graph
Xiaoyin Wang, David Lo, Jiefeng Cheng, Lu Zhang, Hong Mei, and Jeffery Xu Yu
Proceedings of International Conference on Automated Software Engineering (ASE), 457--466, Sept. 2010, Antwerp, Belgium
26. A Discriminative Model Approach for Accurate Duplicate Bug Report Retrieval
Chengnian Sun, David Lo, **Xiaoyin Wang**, Jing Jiang, and Siau-Cheng Khoo
Proceedings of International Conference on Software Engineering (ICSE), 45--54
May 2010, Cape Town, South Africa
27. JDF: detecting duplicate bug reports in Jazz
Yoonki Song, Xiaoyin Wang, Tao Xie, Lu Zhang, Hong Mei
Proceedings of International Conference on Software Engineering (ICSE), Vol. 2,
315--316, Tool Demo, May 2010, Cape Town, South Africa
28. Extracting Paraphrases of Technical Terms from Noisy Parallel Software Corpus
Xiaoyin Wang, David Lo, Jing Jiang, Lu Zhang and Hong Mei
*Proceedings of Joint conference of the 47th Annual Meeting of the Association for
Computational Linguistics and the 4th International Joint Conference on Natural
Language Processing of the Asian Federation of Natural Language Processing (ACL-
IJCNLP)*, short papers, 197--200, Aug. 2009, Singapore
29. Identifying Bug Signatures Using Discriminative Graph Mining
Hong Cheng, David Lo, Yang Zhou, **Xiaoyin Wang**, and Xifeng Yan
Proceedings of International Symposium on Software Testing and Analysis (ISSTA),
141--152, Jul. 2009, Chicago, USA
30. Locating Need-to-Translate Constant Strings for Software Internationalization
Xiaoyin Wang, Lu Zhang, Tao Xie, Hong Mei, and Jiasu Sun
Proceedings of International Conference on Software Engineering (ICSE), 353--363,
May 2009, Vancouver, Canada
31. TranStrL: An Automatic Need-to-Translate String Locator for Software
Internationalization
Xiaoyin Wang, Lu Zhang, Tao Xie, Hong Mei, and Jiasu Sun
Proceedings of International Conference on Software Engineering (ICSE), Formal
Tool Demo, 555--558, May 2009, Vancouver, Canada
32. An Approach to Detecting Duplicate Bug Reports using Natural Language and
Execution Information
Xiaoyin Wang, Lu Zhang, Tao Xie, John Anvik, and Jiasu Sun
Proceedings of International Conference on Software Engineering (ICSE), 461--470,
May 2008, Leipzig, Germany

Scholarly Presentations

1. Experience Report: How is Dynamic Symbolic Execution Different from Manual Testing? - A Study on KLEE, ISSTA 2015, July 16th, 2015, Baltimore
2. An Empirical Study on the Usage of Mocking Frameworks in Software Testing, QSIC 2014, Oct. 3rd, 2014, Dallas
3. Software Mining and Analysis to Support Software Evolution, Beihang University, May 20th, 2014, Beijing
4. Matching dependence-related queries in the system dependence graph, Invited talk, UT Austin, Nov. 19th, 2013, Austin
5. Exploring Android Apps for Malicious Behaviors, Invited talk, UC Davis, May 8th, 2013, Davis

Research Grants

1. Sole PI, CRII: SHF: AutoBuilder: Automatically Building Software Projects for Analysis of Software Repositories, National Science Foundation (NSF-1464425), \$174,840, Mar. 2015 to Feb. 2017
2. Co-PI, Analyses and Training for Defense of Biological and Digital Threats, US Department of Homeland Security (DHS-14-ST-062-001), \$400,000, Sept. 2014 to Aug. 2016

Released Tools

TranStrL, a locator of need-to-translate constant strings for software internationalization, Mar. 2011, see <http://sourceforge.net/projects/transtrl>

AutoBuilder, automatically building arbitrary software projects from software repositories, Sept. 2015, see <http://xywang.100871.net/autobuilder.html>

Professional Services

Program Committee Chairs and Members

1. Workshop Co-Chair: The 5th International Workshop on Software Mining (SoftMine'16)
2. Workshop Co-Chair: The 4th International Workshop on Software Mining (SoftMine'15)

3. PC Member: The 10th International Workshop on Software Clones (IWSC'17)
4. PC Member: The 28th International Conference on Software Engineering and Knowledge Engineering (SEKE'17)
5. PC Member: The 24th International Conference on Program Comprehension, Short Paper Track, (ICPC'16 Short)
6. PC Member: The 9th International Workshop on Software Clones (IWSC'16)
7. PC Member: The 27th International Conference on Software Engineering and Knowledge Engineering (SEKE'16)
8. PC Member: SEIP Track of the 38th International Conference on Software Engineering (ICSE' 16 SEIP)
9. PC Member: The 9th International Workshop on Software Clones (IWSC'15)
10. PC Member: The 27th International Conference on Software Engineering and Knowledge Engineering (SEKE'15)
11. PC Member: International Workshop on System Level Security of Smart Phones (SLSS'14)
12. PC Member: The 26th International Conference on Software Engineering and Knowledge Engineering (SEKE'14)
13. PC Member: The 7th International Conference on Service Oriented Software Engineering (SOSE'13)

Journal Reviewers

14. Reviewer, IEEE Transactions on Service Computing (TSC), 2015
15. Reviewer, 3 papers, Journal of Computer Science and Technology (JCST), 2015, 2016
16. Reviewer, ACM Transactions on Computer Human Interaction (TOCHI), 2014
17. Reviewer, IEEE Software, 2014
18. Reviewer, Simulation Modeling, Practice and Theory (SIMPAT), 2014
19. Reviewer, International Journal of Computer Science and Application (IJCSA), 2014

20. Reviewer, 2 papers, International Journal on Software Testing, Verification, and Reliability (STVR), 2012, 2016

Co-Reviewers / Sub-Reviewers

21. Sub-Reviewer, International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS), 2015

22. Sub-Reviewer, The Working Conference on Reverse Engineering (WCRE), 2014

23. Sub-Reviewer, International Conference on Software Maintenance (ICSM), Industry Track, 2013

24. Sub-Reviewer, International Conference on Software Maintenance (ICSM), Industry Track, 2012

25. Sub-Reviewer, IEEE/ACM Conference on Automated Software Engineering (ASE), 2008

26. Co-Reviewer, International Conference on Software Engineering (ICSE), 2012

27. Co-Reviewer, International Conference on Software Engineering (ICSE), 2011

Thesis

String Origin Analysis and its Applications in Software Maintenance Tasks, PhD Dissertation, Jan. 2012

Identification of Event Categories in Event Extraction of Chinese, Bachelor's Thesis, Jul. 2006

Teaching

Courses Taught

Instructor, CS4723 Software Validation and Quality Assurance, Graduate Course, Department of Computer Science, University of Texas at San Antonio, Fall 2016

Instructor, CS5363 Programming Languages and Compilers, Graduate Course, Department of Computer Science, University of Texas at San Antonio, Spring 2016

Instructor, CS5103 Software Engineering, Graduate Course, Department of Computer Science, University of Texas at San Antonio, Fall 2013, Fall 2014, Fall 2015

Instructor, CS4723 Software Validation and Quality Assurance, Undergraduate Course, Department of Computer Science, University of Texas at San Antonio, Spring 2014, Spring 2015, Fall 2016

Instructor, CS 4593 Cloud-Oriented Big Data and Software Engineering, Undergraduate Course, Department of Computer Science, University of Texas at San Antonio, Fall 2015

Instructor, CS 4593 Pathogenic Outbreak Inv, Undergraduate Course, Department of Computer Science, University of Texas at San Antonio, Spring 2015

Teaching Assistant, Artificial Intelligence, Undergraduate Course, School of EECS, Peking University, Fall 2007

Thesis Committee Chairs

PhD's proposal, Shaikh Mostafa, Dependency-Oriented Test Prioritization for Efficient Regression Testing, Fall 2016.

Master's thesis, Al Amin Hossain, Strengthened Regression Testing with Fine-Grained Object Comparison, Fall 2015.

Master's thesis, Philip Tanofsky, A Study on the Difference between Dynamic Symbolic Execution and Manual Testing, Spring 2014.

Master's research project, Sahana Malali Raghavendra, A benchmark for behavioral backward incompatibilities, Fall 2016.

Master's research project, Zeyad Alshaikh, An Empirical Study on the Status of Software Localization in Open Source Projects, Fall 2014.

Master's research project, Smitha Holla, A Study on How Machine Translation of User Interface Affect User Experience, Fall 2015.

Master's final exam, Qian Huang, Regression Testing and Bug Analysis, Spring 2015.

Master's final exam, Amulya Battu, Cloud Storage Systems, Fall 2015.

Thesis Committee Members

Lu Liu, PhD Proposal, Novel algorithms and metrics for functional discoveries from networked biological data, Dec. 11th, 2015

Jamiul Jahid, PhD Defense, Machine Learning and Graph Theoretical Approaches Toward Precise Disease, Classification, Prognosis and Treatment, June 11th, 2015

Jamiul Jahid, PhD Proposal, Machine Learning and Graph Theoretical Approaches
Toward Precise Disease, Classification, Prognosis and Treatment, Apr. 30th, 2014

Department Services

Library Liaison, Sept. 2013 to Aug. 2014, Sept. 2015 to Now

Graduate Recruitment Committee Member, Sept. 2013 to Aug. 2015

Graduate Studies Committee Member, Sept. 2014 to Now

Curriculum Committee Member, Sept. 2013 to Aug. 2015