Miryung Kim

University of California, Los Angeles
miryung@cs.ucla.edu
206-755-5204
Engineering VI 474, UCLA, Los Angeles, CA 90095

Miryung Kim is a Professor and Vice Chair of Graduate Studies in the Department of Computer Science at UCLA. She has taken a leadership role in defining the emerging area of software engineering for data analytics (SE4DA and SE4ML). She conducted the first systematic study of refactoring practices in industry and quantified refactoring benefits using Windows version history at Microsoft. Her group created automated testing and debugging for Apache Spark and conducted the largest scale study of data scientists in industry. Her current research focuses on developer tools for heterogeneous computing applications with FPGA.

She is a Program Co-Chair of ESEC/FSE 2022, one of top 2 conferences in SE. She was a Keynote Speaker at ASE 2019 and ISSTA 2022 and a Distinguished Speaker at UIUC, UMN, and UC Irvine. She received NSF CAREER award, 10 Year Most Influential Paper Award ICSME, ACM SIGSOFT Distinguished Paper Award, Okawa Foundation Award, Google Faculty Award, Microsoft Software Engineering Innovations Foundation Award, and Humboldt Fellowship. She produced 6 professors (Columbia, Purdue, two at Virginia Tech, etc). For her impact on nurturing the next generation of academics, she received the ACM SIGSOFT Influential Educator Award.

EDUCATION:

University of Washington	Computer Science and Engineering	PhD	December 2008
Advisor: David Notkin			
Dissertation Title: Analyzing and Inferring the Structure of Code Changes			
University of Washington	Computer Science and Engineering	MS	August 2003
Advisor: David Notkin			
Thesis: An Ethnographic Study of Copy and Paste Programming Practices			
Korea Advanced Institute of Science and Technology (KAIST)	Computer Science	BS	February 2001

Graduation Rank: No 1 among all science and engineering students

CURRENT AND PREVIOUS ACADEMIC POSITIONS:

UCLA Computer Science	Vice Chair of Graduate Studies	July 2022—current
UCLA Computer Science	Full Professor	July 2019—current
Amazon Web Services	Amazon Scholar	September 2022—current
UCLA Computer Science	Associate Professor	September 2014—June 2019
Microsoft Research	Visiting Researcher	Summer 2014
University of Texas at Austin	Assistant Professor	January 2009—August 2014
Microsoft Research	Visiting Researcher	Summer 2011
Korea Advanced Institute of Science and Technology	Visiting Researcher	October 2008 to December 2008
University of Washington	Graduate Research Assistant	October 2001 to August 2008

OTHER PROFESSIONAL EXPERIENCE:

IBM TJ Watson Research	Graduate Research Intern	Summer 2003
Motorola Corporation	Software Engineer	January 2001 to August 2001

HONORS AND AWARDS:

ACM SIGSOFT Influential Educator Award, 2022
ACM SIGSOFT Research Highlight, 2022
ACM Distinguished Member, 2021
Distinguished Lecture at University of Illinois, Urbana Champaign, 2021
Cray Distinguished Speaker at University of Minnesota, 2021
Most Influential Paper Award, 10-Year Retrospective Award at the 36th IEEE International Conference on Software Maintenance and Evolution (ICSME 2020)
Keynote Speaker, The 34th IEEE/ACM International Conference on Automated Software Engineering, 2019
Humboldt Fellow, Alexander von Humboldt Foundation, 2019
Distinguished Reviewer Award, The 43rd International Conference on Software Engineering (ICSE 2021)
Doc Stevens Award for Outstanding Faculty-In-Residence, 2018
Keynote Speaker Workshop on Automated Specification Inference, 2018
Distinguished Lecture at University of California, Irvine, 2018
Faculty of the Year Award, 2017
ACM Senior Member, 2016
Okawa Research Award, 2015
Google Research Award, 2014
Invited Speaker at the University of Virginia CS Top Gun Series, 2013 –*recognizes faculty on a trajectory to be the research leaders of the coming decades*
Nominated for ACM SIGSOFT Distinguished Paper Award, Automated Software Engineering, 2013.
NSF CAREER Award, 2011
Microsoft Software Engineering Innovation Foundation Award, 2011
ACM SIGSOFT Distinguished Paper Award, The 25th International Conference on Automated Software Engineering, 2010 & Selected for Expedited Journal Publication
Nomination for ACM SIGSOFT Distinguished Paper Award, The 33rd International Conference on Software Engineering, 2011
IBM Jazz Innovation Award, 2009
Nominated for ACM SIGSOFT Distinguished Paper Award, International Symposium on Foundations of Software Engineering, 2005
Korean Ministry of Education, Science and Technology Award, the highest honor given to an undergraduate student in Korea, 2001
Summa Cum Laude, Korea Advanced Institute of Science and Technology (KAIST) in 2001.
Korea Foundation of Advanced Studies Graduate Fellowship, 2001 to 2006
Korea Foundation of Advanced Studies Scholarship for Honor Undergraduate Students, 1999

PUBLICATIONS: [1]

2022

P1. HeteroGen: Transpiling C to Heterogeneous HLS Code with Automated Test Generation and Program Repair, Qian Zhang, Jiyuan Wang, Harry Xu, Miryung Kim, 27th International Conference on Architectural Support for Programming Languages and Operating Systems, 12 pages, **ASPLOS '22**

P2. Mako: A Low-Pause, High-Throughput Evacuating Collector for Memory-Disaggregated Datacenters, H. Ma, S. Liu, C. Wang, Y. Qiao, M. Bond, S. Blackburn, M. Kim, G. Xu, 15 pages, **PLDI '22**

P3. Sibylvariant Transformations for Robust Text Classification, Fabrice Y Harel-Canada, Muhammad Ali Gulzar, Nanyun Peng, Miryung Kim. 18 pages, Findings of **ACL '22**

P4. Concept-Annotated Examples for Library Comparison, Litao Yan, Miryung Kim, Björn Hartmann, Tianyi Zhang, Elena L. Glassman, ACM Symposium on User Interface Software and Technology, **UIST' 22**, 16 pages

P5. Canvas: Isolated and Adaptive Swapping for Multi-Applications on Remote Memory, Chenxi Wang, Yifan Qiao, Haoran Ma, Shi Liu, Yiying Zhang, Wenguang Chen, Ravi Netravali, Miryung Kim, Guoqing Harry Xu. 18 pages, **NSDI '23**.

P6. A Declarative Metamorphic Testing Framework for Autonomous Driving, Yao Deng , Xi Zheng , Guannan Lou , Tianyi Zhang , Huai Liu , Miryung Kim , Tsong Chen, 18 pages, to appear in **IEEE TSE**

2021

P7. QDiff: Differential Testing of Quantum Software Stacks, Jiyuan Wang, Qian Zhang, Guoqing Harry Xu, Miryung Kim, The 36th IEEE/ACM International Conference on Automated Software Engineering, 12 pages, **ASE '21**

P8. Fuzz Testing to Detect Platform Dependent Divergence for Heterogeneous Applications, Qian Zhang, Jiyuan Wang, Miryung Kim, 29th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering, 12 pages, **ESEC/FSE '21**

P9. Dorylus: Affordable, Scalable, and Accurate GNN Training over Billion-Edge Graphs, John Thorpe, Yifan Qiao, Jonathan Eyolfson, Shen Teng, Guanzhou Hu, Zhihao Jia, Jinliang Wei, Keval Vora, Ravi Netravali, Miryung Kim, Guoqing Harry Xu (**OSDI '21)**

[1] Authors marked in **bold** are current, former and visiting students in my group that I advised. My name is marked in bold as well. Before moving to UCLA in 2014, I put my name first among senior authors, if I am the lead, corresponding author. For the publications that were first submitted after moving to UCLA, I put my name as the last author, if I am the lead contributor.

P10. OptDebug: OptDebug: Fault-Inducing Operation Isolation for Dataflow Applications, Muhammad Ali Gulzar, Miryung Kim, ACM Symposium on Cloud Computing 2021, 12 pages, (**SoCC '21)**

P11. Efficient Fuzz Testing for Apache Spark Using Framework Abstraction by Qian Zhang, Jiyuan Wang, Muhammad Ali Gulzar, Rohan Padhye, Miryung Kim, ICSE '21 Tool Demonstration. **(ICSE 2021 Tool Demonstration)**

2020

P12. Semeru: A Memory-Disaggregated Managed Runtime Chenxi Wang, Haoran Ma, Shi Liu, Yuanqi Li, Zhenyuan Ruan, Khanh Nguyen, Michael Bond, Ravi Netravali, Miryung Kim, Guoqing Harry Xu, The 14th USENIX Symposium on Operating Systems Design and Implementation, 12 pages, **(OSDI 2020)**

P13. Influence-Based Provenance for Dataflow Applications with Taint Propagation, Jason Teoh, Muhammad Ali Gulzar, Miryung Kim, ACM Symposium on Cloud Computing 2020. 12 pages, **(SoCC 2020)**

P14. BigFuzz: Efficient Fuzz Testing for Data Analytics using Framework Abstraction, Qian Zhang, Jiyuan Wang, Muhammad Ali Gulzar, Rohan Padhye, Miryung Kim The 35th IEEE/ACM International Conference on Automated Software Engineering, 12 pages **(ASE 2020)**

P15. Is Neuron Coverage a Meaningful Measure for Testing Deep Neural Networks? Fabrice Harel-Canada, Lingxiao Wang, Muhammad Ali Gulzar, Quanquan Gu, Miryung Kim, ACM SIGSOFT International Symposium on the Foundations of Software Engineering **(ESEC/FSE 2020)**

P16. JShrink: In-depth Investigation into Debloating Modern Java Applications, Bobby Bruce*, Tianyi Zhang*, Jaspreet Arora, Guoqing Harry Xu, Miryung Kim, ACM SIGSOFT International Symposium on the Foundations of Software Engineering, 12 pages **(ESEC/FSE 2020)**

P17. HeteroRefactor: Refactoring for Heterogeneous Computing with FPGA, Jason Lau*, Aishwarya Sivaraman*, Qian Zhang*, Muhammad Ali Gulzar, Jason Cong, Miryung Kim [* are equal co-first authors, ordered alphabetically by their last names.] Proceedings of 42nd IEEE/ACM International Conference on Software Engineering, 13 pages **(ICSE 2020)**

P18. Enabling Data-Driven API Design with Community Usage Data: A Need-Finding Study, Tianyi Zhang, Björn Hartmann, Miryung Kim, Elena Glassman, 2020 ACM Conference on Human Factors in Computing Systems, 12 pages **(CHI 2020)**

P19. An Analysis of Adversarial Attacks and Defenses on Autonomous Driving Models, 18th Annual IEEE International Conference on Pervasive Computing and Communications 2020, Yao Deng, Xi Zheng, Tianyi Zhang, Chen Chen, Guannan Lou, Miryung Kim, 10 pages, **(PerCom 2020)**

P20. Characterizing and Identifying Composite Refactorings: Concepts, Heuristics and Patterns, Leonardo Da Silva Sousa, Diego Cedrim, Alessandro Garcia, Willian Oizumi, Ana Carla Bibiano, Daniel Oliveira, Miryung Kim, Anderson Oliveira, Mining Software Repositories 2020 **(MSR**

2020)

P21. SE4DA: Software Engineering for Data Analytics, Special Issue on The AI Effect: Working at the Intersection of AI and Software Engineering, Miryung Kim, **IEEE Software**

P22. WebJShrink: A Web Service for Debloating Java Bytecode, Konner Macias, Mihir Mathur, Bobby R. Bruce, Tianyi Zhang, Miryung Kim, ACM SIGSOFT International Symposium on the Foundations of Software Engineering, 12 pages, **ESEC/FSE 2020 Tool Demonstration**

P23. BigTest: Symbolic Execution Based Systematic Test Generation Tool for Apache Spark, Muhammad Ali Gulzar, Madan Musuvathi, Miryung Kim, Proceedings of 42nd IEEE/ACM International Conference on Software Engineering, 4 pages, **ICSE 2020 Tool Demonstration**

2019

P24. Zhang, T., Yang, D., Lopes, C., **Kim, M.,** Analyzing and Supporting Adaptation of Online Code Examples, ICSE'19: Proceedings of 41st IEEE/ACM International Conference on Software Engineering, pages 316-327 (**ICSE 2019**)

P25. Sivaraman, A., Zhang, T., Van den Broeck, G., **Kim, M.,** Active Inductive Logic Programming for Code Search, ICSE'19: Proceedings of 41st IEEE/ACM International Conference on Software Engineering, pages 292-303 (**ICSE 2019**)

P26. Gulzar, M.A., Mardani, S., Musuvathi, M., **Kim, M.**, White-Box Testing of Big Data Analytics with Complex User-Defined Functions, ESEC/FSE '19: The 27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, pages 290-301 (**ESEC/FSE 2019**)

P27. Zhang, T., Gao, C., Ma, L., Lyu M. R., and **Kim, M.**, An Empirical Study of Common Challenges in Developing Deep Learning Applications, ISSRE'19: Proceedings of 30th International Symposium on Software Reliability Engineering, 12 pages. (**ISSRE 2019**)

P28. Generuk: Thin Computation over Big Native Data Using Speculative Program Transformation, Navasca, C., Cai, C., Nguyen, K., Demsky, B., Lu, S., **Kim, M.**, Xu, G. H.,: SOSP '19, The 27th ACM Symposium on Operating Systems Principles, 12 pages. (**SOSP 2019**)

P29. PerfDebug: Performance Debugging of Computation Skew in Dataflow Systems, Teoh, J., Gulzar, M.A., Xu, G. H., and **Kim, M.**, SoCC '19: ACM Symposium on Cloud Computing 2019. 14 pages (**SoCC 2019**)

P30. Handbook of Software Engineering, Book Chapter on Software Evolution, **Kim, M.** Meng, N. and Zhang., T., Springer, pages 223-284.

2018

P31. **Zhang, T.**, Upadhyaya, G., **Reinhardt, A.**, Rajan H and **Kim, M.**, "Are Code Examples on an Online Q&A Forum Reliable? A Study of API Misuse on Stack Overflow", Proceedings of 40th IEEE/ACM International Conference on Software Engineering, ACM, pages 886-896 (**ICSE 2018**)

P32. Glassman* E.L., **Zhang* T.,** Hartmann, B., **Kim, M., "**Visualizing API Usage Examples at Scale," ACM 2018 CHI Conference on Human Factors in Computing Systems, ACM, pages 1-12, Paper No 580, ** means equal first authors.* (**CHI 2018**)

P33. **Kim, M.**, Zimmermann, T., DeLine, R., and Begel A., "Data Scientists in Software Teams: State of the Art and Challenges," IEEE Transactions on Software Engineering, IEEE Trans. Software Eng. 44(11): 1024-1038 (2018) url: http://ieeexplore.ieee.org/document/8046093 (**TSE**)

P34. Gulzar, M., Wang, S., **Kim, M.** BigSift: Automated Debugging of Big Data Analytics in Data-Intensive Scalable Computing, ESEC/FSE '18 Research Demonstrations, pages 863-866

P35. Reinhardt, A., Zhang, T., Mathur, M., **Kim, M.**, Augmenting Stack Overflow with API Usage Patterns Mined from GitHub, ESEC/FSE '18 Research Demonstrations, pages 880-883

2017

P36. **Zhang, T., Kim, M.**, "Automated Transplantation and Differential Testing for Clones," ICSE' 17: Proceedings of 39th IEEE/ACM International Conference on Software Engineering, pages 665-676, (**ICSE 2017**) 16% acceptance rate.

P37. **Gulzar, M. A.,** Interlandi, M., **Han, X.**, Li, M., Condie, T.**, Kim, M.**, "Automated Debugging in Data-Intensive Scalable Computing," Proceedings of the 2017 Symposium on Cloud Computing, ACM, 520-534 (September 2017) url: https://dl.acm.org/citation.cfm?id=3131624 (**SoCC 2017**)

P38. **Gulzar, M. A.**, Interlandi, M., Condie, T., **Kim, M.**, "Debugging Big Data Analytics in Spark with BigDebug," SIGMOD' 17: Proceedings of 2017 ACM SIGMOD/PODS Conference, Demonstration Track, pages 1627-1630 (**SIGMOD 2017 Demo**)

P39. Interlandi, M., Ekmekji, A., Shah, K., **Gulzar, M. A.**, Tetali S. D., **Kim, M.**, Millstein, T., Condie, T. "Adding Data Provenance Support to Apache Spark", The VLDB Journal, Springer Berlin Heidelberg, 2017(Special Issue):1 - 21 (2017) VLDB J. 27(5): 595-615 (2018) https://link.springer.com/article/10.1007/s00778-017-0474-5 (**VLDB Journal**)

P40. **Alves, L., Song, M.,** Massoni, T., Machado, P., **Kim, M.** "Refactoring Inspection Support for Manual Refactoring Edits," IEEE Transactions on Software Engineering, IEEE, Preprint:1 - 20 (March 2017) url: http://ieeexplore.ieee.org/document/7874212/ (**TSE**)

2016

P41. **Gulzar M., A.**, Interlandi, M., Yoo, S., Tetali, S.D., Condie, T., Millstein, T., **Kim, M.**, "BigDebug: Debugging Primitives for Interactive Big Data Processing in Spark," ICSE' 16: Proceedings of 38th IEEE/ACM International Conference on Software Engineering, pages 784-795, (**ICSE 2016**) 19% acceptance rate.

P42. **Kim, M.,** Zimmermann T., DeLine, R., Begel, A.," The Emerging Role of Data Scientists on Software Development Teams," ICSE' 16: Proceedings of 38th IEEE/ACM International Conference on Software Engineering, pages 96-107 (**ICSE 2016**) 19 % acceptance rate.

P43. Interlandi, M., Shah, K., Tetali, S., **Gulzar, M., Yoo S.**, **Kim, M.**, Millstein T., Condie, T. "Titian:

Data Provenance Support in Spark," PVLDB Volume 9 Issue 3: Proceedings of The 42nd Conference On Very Large Data Bases, pages 216-227 (**VLDB 2016**).

P44. Tetali, S., Interlandi, **M., Gulzar M.**, Noor, J., Condie, T., **Kim, M.**, Millstein, T., "Optimizing Interactive Development of Data-Intensive Applications," ACM Symposium on Cloud Computing 2016. (**SoCC 2016**) pages 510-522

P45. **Alves, E.**, Machado, P., Massoni, T., **Kim, M.**, "Prioritizing Test Cases for Early Detection of Refactoring Faults," Journal of Software Testing, Verification, and Reliability, Preprint DOI: 10.1002/stvr.1603 (Date of Publication: 21 March 2016), Volume 26, Issue 5, pages 402–426, August 2016

P46. Zheng, X., Julien, C., **Kim, M.**, Khurshid, S., "Perceptions on the State of the Art in Verification and Validation in Cyber-Physical Systems," IEEE Systems Journal, Preprint DOI: 10.1109/JSYST.2015.2496293 (Date of Publication: 20 November 2015), IEEE Systems Journal 11(4): 2614-2627 (2017)

P47. **Park, J., Kim, M.,** Bae, D.H.**,** "An Empirical Study of Supplementary Patches in Open Source Projects," Journal of Empirical Software Engineering, 22(1):436 - 473 url: Preprint DOI: 10.1007/s10664-016-9432-x

P48. **Gulzar, M.A.**, **Han X.**, Interlandi, M., **Mardani, S.**, Tetali, S., Condie, T., Millstein, T., **Kim, M.**, "Interactive Debugging for Big Data Analytics," The 8th USENIX Workshop on Hot Topics in Cloud Computing, 5 pages, 30% acceptance rate.

P49. **Gulzar, M.A.,** Interlandi, M., Condie, T., and **Kim, M.**, "BigDebug: Interactive Debugger for Big Data Analytics in Apache Spark," The 24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering, Demonstration Track, 4 pages. (**FSE Demo 2016**)

P50. Weimer, W., Forrest, S., **Kim, M.**, Le Goues, C., Hurley, P., "Trusted Software Repair for System Resiliency," The 46th IEEE/IFIP International Conference on Dependable Systems and Networks, Industry Track, 4 pages (Apr 2016)

P51. **Kim, M.**, "Five Steps for Success: How to Deploy Data Science in Your Organizations," Book Chapter on Perspectives on Data Science for Software Engineering, 1st Edition, Editors: Menzies, T., Williams, L., Zimmermann, T. (Date of Publication: 13 July 2016).

2015

P52. **Meng, N., Hua, L, Kim, M,** McKineley, K. "Does Automated Refactoring Obviate Systematic Editing?" IEEE/ACM 37th IEEE International Conference on Software Engineering (**ICSE 2015**) pages 111-122, 18% acceptance rate

P53. **Zhang T, Song M, Pinedo J**, **Kim, M.** "Interactive Code Review for Systematic Changes," 2015 IEEE/ACM 37th IEEE International Conference on Software Engineering, ICSE (1) 2015: 392-402 (**ICSE 2015**) 18% acceptance rate.

2014

P54. **Zhang, T., Song, M., Kim, M**. "An Interactive Code Review Tool for Searching and Inspecting Systematic Changes," The 22nd ACM SIGSOFT International Symposium on Foundations of

Software Engineering, Research Demonstration Track, pages 755-758 (**FSE 2014 Demo**)

P55. **Alves, E., Song, M., Kim, M. "**RefDistiller: A Refactoring Aware Code Review Tool for Inspecting Manual Refactoring Edits," The 22nd ACM SIGSOFT International Symposium on Foundations of Software Engineering, Research Demonstration Track, pages 751-754 (**FSE 2014 Demo**)

P56. **Park, J., Kim, M.,** Bae D.H., "An empirical study on reducing omission errors in practice," The 29th IEEE/ACM International Conference on Automated Software Engineering, New Ideas and Emerging Research Track, pages 121-126 (**ASE 2014**).

P57. **Kim, M.**, Zimmermann, T., and Nagappan, N. "An Empirical Study of Refactoring Benefits and Challenges at Microsoft," IEEE Transactions on Software Engineering, Volume 40 No. 7: 633-649 (2014) (**TSE 2014**, March 2014).

P58. **Jacobellis, J., Meng, N., Kim, M., "**Cookbook: In Situ Code Completion Using Edit Recipes Learned From Examples," The 36th IEEE/ACM International Conference on Software Engineering, Formal Research Demonstration Track (**ICSE 2014 Demo**), Hyderabad, India, 4 pages, June 2014 (36% acceptance rate)

2013

P59. **Meng, N., Kim, M.,** McKinley, K. "LASE: Locating and Applying Systematic Edits by Learning from Examples," The 35th IEEE/ACM International Conference on Software Engineering, (**ICSE 2013**), San Francisco, CA, pages 502-511, May 2013. (18% acceptance rate).

P60. **Ray, B., Kim, M.,** Person, S., Rungta, N. "Detecting and Characterizing Semantic Inconsistencies in Ported Code," The 28th IEEE/ACM International Conference on Automated Software Engineering, (**ASE 2013**), Palo Alto, CA, 10 pages, November, 2013. (23% acceptance rate). **Invited to the Special Issue of Journal of Automated Software Engineering**

P61. **Kim, M.**, Notkin, D., Grossman, D., **Wilson, G.**, "Identifying and Summarizing Systematic Code Changes via Rule Inference," IEEE Transactions on Software Engineering (**TSE 2013**), Volume 39, Number 1, pages 45-62, January 2013.

P62. **McDonnell, T., Ray, B., Kim, M.** "An Empirical Study of API Stability and Adoption in the Android Ecosystem," The 29th IEEE International Conference on Software Maintenance, Eindhoven, the Netherlands, 10 pages, September, 2013. (22% acceptance rate). (**ICSM 2013**)

P63. **Jabobellis, J., Meng, N., Kim, M.,** "LASE: An Example-based Program Transformation Tool for Locating and Applying Systematic Edits," The 35th IEEE/ACM International Conference on Software Engineering, Formal Research Demonstration Track (**ICSE 2013 Demo**), San Francisco, CA, pages 1319-1322, May 2013.

P64. **Kim, M., Meng, N.,** "Recommending Program Transformations to Automate Repetitive Software Changes," Book Chapter on Recommendation Systems on Software Engineering. Editors: Martin Robillard, Walid Maalej, Robert Walker and Thomas Zimmermann

P65. **Zhang, L., Kim, M.**, Khurshid, S., "FaultTracer: A Spectrum-Based Approach to Localizing Failure-Inducing Program Edits," Journal of Software: Evolution and Process.

2012

P66. **Kim, M.**, Zimmermann, T., Nagappan N., "A Field Study of Refactoring Challenges and Benefits," ACM SIGSOFT the 20th International Symposium on the Foundations of Software Engineering (**FSE 2012**), Cary, NC, Article No. 50, 11 pages, November 2012. (17% acceptance rate)

P67. **Ray, B., Kim, M.,** "A Case Study of Cross-System Porting in Forked Software Projects," ACM SIGSOFT the 20th International Symposium on the Foundations of Software Engineering (**FSE 2012**), Cary, NC, Article No. 53, 11 pages, November 2012. (17% acceptance rate)

P68. **Ray, B., Wiley, C., Kim, M.,** "Repertoire: A Cross-System Porting Analysis Tool for Forked Software Projects," ACM SIGSOFT the 20th International Symposium on the Foundations of Software Engineering (**FSE 2012 Demo**), Formal Research Tool Demonstration, Cary, NC, Article No. 8., 4 pages, November 2012.

P69. **Zhang, L., Kim, M.**, Khurshid, S., "FaultTracer: A Change Impact and Regression Fault Analysis Tool for Evolving Java Programs," ACM SIGSOFT the 20th International Symposium on the Foundation of Software Engineering (**FSE 2012 Demo**), Formal Research Tool Demonstration, Cary, NC, Article No. 40, 4 pages, November 2012.

P70. **Duley, A., Spandikow, S., Kim, M.,** "Vdiff: A Program Differencing Algorithm for Verilog Hardware Description Language," Journal of Automated Software Engineering (**ASE Journal 2012**),Volume 19, Number 4, pages 459-490, December 2012.

P71. **Rachatasumrit, N., Kim, M.,** "An Empirical Investigation into the Impact of Refactoring on Regression Testing," The 28th IEEE International Conference on Software Maintenance, Trento, Italy, pages 357-366, September 2012. (25% acceptance rate)

P72. Yang, G., Khurshid, S., **Kim, M.**, "Specification-Based Test Repair Using a Lightweight Formal Method," The 18th International Symposium on Formal Methods, Paris, France, Volume 7436, pages 455-470, August 2012. (21% acceptance rate)

P73. **Park, J., Kim, M., Ray, B.,** Bae, D.H., "An Empirical Study of Supplementary Bug Fixes," The 9th IEEE Working Conference on Mining Software Repositories, Zurich, Switzerland, pages 40-49, June 2012. (29% acceptance rate) (**MSR 2012**) **Invited to the Special Issue of Journal of Empirical Software Engineering (EMSE)**

P74. **Boos, K.,** Fok, C.L., Julien, C., **Kim, M.**, "BRACE: An Assertion Framework for Debugging Cyber-Physical Systems," The 34th IEEE/ACM International Conference on Software Engineering (New Ideas and Emerging Results Track) (**ICSE 2012**), Zurich, Switzerland, ACM Press, pages 1341-1344, June 2012. (17% acceptance rate)

P75. **Kim, M.** Zimmermann, T., Nagappan N., "Appendix to A Field Study of Refactoring Rationale, Benefits, and Challenges at Microsoft," Technical Report. MSR-TR2012-4, January 11, 2012.

2011

P76. **Meng, N., Kim, M.**, McKinley, K. S., "Systematic Editing: Generating Program

Transformations from an Example," The 32nd ACM SIGPLAN Conference on Programming Language Design and Implementation (**PLDI 2011**), San Jose, CA, ACM Press, Volume 46, Number 6, pages 329-342, June 2011. (23% acceptance rate)

P77. **Kim, M., Cai, D.,** Kim, S., "An Empirical Investigation into the Role of API-Refactorings during Software Evolution," The 33rd IEEE/ACM International Conference on Software Engineering (**ICSE 2011)**, Waikiki, HI, ACM Press, pages 151-160, May 2011. (14% acceptance rate) **Nominated for an ACM SIGSOFT Distinguished Paper Award**

P78. Wong S., Cai, Y., **Kim, M.**, Dalton, M., "Detecting Software Modularity Violations," The 33rd IEEE/ACM International Conference on Software Engineering (**ICSE 2011**), Honolulu, HI, ACM Press, pages 411-420, May 2011. (14% acceptance rate).

P79. **Meng, N., Kim, M.**, McKinley, K. S., "Sydit: Creating and Applying a Program Transformation from an Example," The 19th ACM SIGSOFT Symposium on the Foundations of Software Engineering (**FSE 2011 Demo**), Formal Research Demonstration, Szeged, Hungary, ACM Press, pages 440-443, September 2011.

P80. **Zhang, L., Kim, M.**, Khurshid, S., "Localizing Failure-Inducing Program Edits Based on Spectrum Information," The 27th IEEE International Conference on Software Maintenance, Williamsburg, VA, (**ICSM 2011**) **Invited to Journal of Software: Evolution and Processes**, IEEE Society, pages 23-32, September 2011. (28% acceptance rate)

P81. **Kim, M.**, "An Exploratory Study of Awareness Interests about Software Modifications," International Workshop on Cooperative and Human Aspects of Software Engineering, co-located with 2011 ACM and IEEE 33rd International Conference on Software Engineering, Honolulu, HI, pages 80-83, May 2011.

P82. **Cai, D., Kim, M.**, "An Empirical Study of Long-Lived Code Clones," The 14th International Conference on Fundamental Approaches to Software Engineering, Saarbrücken, Germany, pages 432-446, March 2011. (29% acceptance rate)

2010

P83. **Duley, A., Spandikow, C., Kim, M.**, "A Program Differencing Algorithm for Verilog HDL," The 25th IEEE/ACM International Conference on Automated Software Engineering (**ASE 2010**), Antwerp, Belgium, IEEE Computer Society, pages 477-486, September 2010. (18% acceptance rate) **ACM SIGSOFT Distinguished Paper Award. Invited to the Special Issue of Journal of Automated Software Engineering**

P84. Wu, W., Gueheneuc, Y.G., Antoniol, G., **Kim, M.**, "AURA: A Hybrid Approach to Identify Framework Evolution," The 32nd ACM-IEEE International Conference on Software Engineering (**ICSE 2010**), Cape Town, South Africa, ACM Press, pages 325-334, May 2010. (14% acceptance rate)

P85. Nguyen, H. A., Nguyen, T. T., **Wilson G. Jr.**, Nguyen, A. T., **Kim, M.**, Nguyen T. N., "A Graph Based Approach to API Usage Adaptation," The 2010 ACM SIGPLAN International Conference on Systems, Programming, Languages and Applications (**OOPSLA 2010**), Indianapolis, IN, ACM Press, Volume 45, Number 10, pages 302-321, October 2010. (28% acceptance rate)

P86. **Prete, K., Rachatasumrit, N., Sudan N., Kim, M.**, "Template-Based Reconstruction of Complex Refactorings," The 26th IEEE International Conference on Software Maintenance (**ICSM 2009**), Timisora, Romania, IEEE Computer Society, pages 1-10, September 2010. (26% acceptance rate)

P87. **Kim, M., Gee, M., Loh, A., Rachatasumrit, N.** "Ref-Finder: a Refactoring Reconstruction Tool Based on Logic Query Templates," The 18th ACM SIGSOFT Symposium on the Foundations of Software Engineering (**FSE 2010**), Formal Research Demonstration, Santa Fe, NM, ACM Press, pages 371-372, November 2010. (21% acceptance rate)

P88. Brown, N., Cai, Y., Guo, Y., Kazman, R., **Kim, M.**, Kruchten, P., Lim, E. , MacCormack, A., Nord, R., Ozkaya, I., Sangwan, R., Seaman, C., Sullivan, K., Zazworka, N., "Managing Technical Debt in Software-Reliant Systems," Workshop on the Future of Software Engineering Research, Proceedings of the 18th ACM SIGSOFT Symposium on the Foundations of Software Engineering, Santa Fe, NM, ACM Press, pages 47-52, November 2010.

P89. **Wright, H. K., Kim, M.**, Perry, D. E, "Validity Concerns in Software Engineering Research," Workshop on the Future of Software Engineering Research, The 18th ACM SIGSOFT Symposium on the Foundations of Software Engineering, Santa Fe, NM, ACM Press, pages 47-52, November 2010.

P90. **Loh, A. Kim, M.**, "LSdiff: A Program Differencing Tool to Identify Systematic Structural Differences," The 32nd ACM-IEEE International Conference on Software Engineering (**ICSE 2010 Demo**), Formal Research Demonstration, Cape Town, South Africa, ACM Press, pages 263-266, May 2010.

P91. **Prete, K., Rachatasumrit, N., Kim, M.** "Catalogue of Template Refactoring Rules, Department of Electrical and Computer Engineering," August 15th, 2010.

2009

P92. **Kim, M.**, Notkin, D., "Discovering and Representing Systematic Code Changes," The 31st IEEE/ACM International Conference on Software Engineering (**ICSE 2009**), Vancouver, Canada , IEEE Computer Society, pages 309-319, May 2009. (12% acceptance rate)

2008

P93. **Kim, M.** "Analyzing and Inferring the Structure of Code Changes," Ph.D. Dissertation, University of Washington, December 2008

2007

P94. **Kim, M.**, Notkin, D., Grossman, D., "Automatic Inference of Structural Changes for Matching Across Program Versions," The 29th IEEE/ACM International Conference on Software Engineering (**ICSE 2007**), Minneapolis, MN, IEEE Computer Society, pages 333-343, May 2007. (15% acceptance rate)

P95. **Kim, M.**, "Understanding and Aiding Code Evolution by Inferring Change Patterns," Doctoral Symposium Poster, The 29th IEEE/ACM International Conference on Software Engineering (**ICSE 2007 Doctoral Symposium**), Minneapolis, MN, IEEE Computer Society, pages 101-102,

May 2007.

P96. Adar, E., **Kim, M.**, "SoftGUESS: Visualization and Exploration of Code Clones in Context," Formal Research Demo, The 29th IEEE/ACM International Conference on Software Engineering (**ICSE 2007 Demo**), Minneapolis, MN, IEEE Computer Society, pages 762-766, May 2007.

2006

P97. **Kim, M.**, Notkin, D., "Program Element Matching for Multi-Version Program Analyses," The Third IEEE International Workshop on Mining Software Repositories (**MSR 2006**), Shanghai, China, ACM, pages 58-64, May 2006.

P98. Kim, S., Zimmermann, T., **Kim, M.**, Hassan, A., Mockus, A., Girba, T., Pingzer M., Whitehead E. J. Jr., Zeller, A., "TA-RE: An Exchange Language for Mining Software Repositories," The Third IEEE International Workshop on Mining Software Repositories (**MSR 2006**), Shanghai, China, ACM, pages 22-25, May 2006.

2005

P99. **Kim, M.**, Sazawal, V., Notkin, D., Murphy, G., "An Empirical Study of Code Clone Genealogies," The 10th European Software Engineering Conference held jointly with the 13th ACM SIGSOFT International Symposium on Foundations of Software Engineering (**ESEC/FSE 2005**), Lisbon, Portugal, ACM, pages 187-196, September 2005. (16% acceptance rate) **Nominated for ACM SIGSOFT Distinguished Paper Award, Invited to Journal of ACM Transactions on Software Engineering and Methodology**

P100. **Kim, M.**, Notkin, D., "Using a Clone Genealogy Extractor for Understanding and Supporting Evolution of Code Clones," The Second IEEE International Workshop on Mining Software Repositories (**MSR 2005**), co-located with International Conference on Software Engineering, St. Louis, MO, ACM, Volume 3, Number 4, pages 1-5, July, 2005.

2004

P101. Sazawal, V., **Kim, M.**, Notkin D., "A Study of Evolution in the Presence of Source-Derived Partial Design Representations," The Seventh IEEE International Workshop on the Principles of Software Evolution, Kyoto, Japan, IEEE Computer Society, pages 21-30, September 2004. (30% acceptance rate)

P102. **Kim, M.**, Bergman, L., Lau, T. A., Notkin D., "An Ethnographic Study of Copy and Paste Programming Practices in OOPL," IEEE International Symposium on Empirical Software Engineering (**ISESE 2004**), Redondo Beach, CA, IEEE Computer Society, pages 83-92, August 2004. (39% acceptance rate)

PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES:

Program co-chair of the 30th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2022).
Program co-chair of 35th International Conference on Software Maintenance and Evolution (ICSME 2019)
Program co-chair of 42th ACM/ IEEE International Conference on Software Engineering Workshop Selections Committee (ICSE 2020 Workshops Selection)
Associate Editor, IEEE Transactions on Software Engineering (2016-2020)
Associate Editor, Journal of Empirical Software Engineering (2015-current)
Co-Chair, Test of Time Award Committee for ESEC/FSE 2021
Co-Chair, MSR Foundation Award and Early Career Award Committee, 2021
Co-Chair, MSR Foundation Award and Early Career Award Committee, 2022
Chair, Most Influential Paper Award Committee, for Automated Software Engineering 2022

Steering Committee, Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (2020-current)
Steering Committee, International Conference on Software Maintenance and Evolution (2019-current)
General Chair of the 13th International Conference on Mining Software Repositories (MSR 2016)
Program co-chair of 24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering, Visions and Reflections Paper Track (FSE 2016 VaR Track)
Program co-chair of 27th IEEE Conference on Software Maintenance, Early Research Achievement Track (ICSM ERA 2011)
Editorial board, Journal of Information and Science Technology (2014-current)
Served on 40+ program committees since 2009: top SE conferences including ICSE, FSE, OOPSLA, ICSM, MSR, etc.
Program Board member in ICSE 2015, ICSE 2016, ICSE 2017, and ICSE 2018.

The full list is described below.

Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering	**ESEC/FSE 2021**
43th ACM/ IEEE International Conference on Software Engineering, Research Track	**ICSE 2021**
40th ACM/ IEEE International Conference on Software Engineering, Research Track, Program Board	**ICSE 2018**
39th ACM/ IEEE International Conference on Software Engineering, Research Track, Program Board	**ICSE 2017**
38th ACM/ IEEE International Conference on Software Engineering, Research Track, Program Board	**ICSE 2016**
37th ACM/ IEEE International Conference on Software Engineering, Research Track	**ICSE 2015**
ACM SIGPLAN conference on Systems, Programming, Languages and Applications: Software for Humanity, Onward!	
36th ACM/ IEEE International Conference on Software Engineering, Research Track	**ICSE 2014**
22nd ACM SIGSOFT Symposium on the Foundations of Software Engineering	**FSE 2014**
36th ACM/ IEEE International Conference on Software Engineering, Research Demonstration Track	

36th ACM/ IEEE International Conference on Software Engineering, Workshop Selection Program Committee	
35th ACM/ IEEE International Conference on Software Engineering, New Ideas and Emerging Results Track	
35th ACM/ IEEE International Conference on Software Engineering, Workshop Selection Program Committee	
35th ACM/ IEEE International Conference on Software Engineering, Research Demonstration Program Committee	
2012 ACM SIGPLAN Conference on Systems, Programming, Languages and Applications	**SPLASH/ OOPSLA 2012**
23rd International Symposium on Software Reliability Engineering	**ISSRE 2012**
20th International Symposium on the Foundation of Software Engineering, Research Demonstration Track	
ACM Student Research Competition at ICSE 2012	
9th IEEE Working Conference on Mining Software Repositories	**MSR 2012**
5th IEEE International Symposium on Empirical Software Engineering and Measurement	**ESEM 2011**
27th IEEE International Conference on Software Maintenance	**ICSM 2011**
4th Workshop on Refactoring Tools	
8th IEEE Working Conference on Mining Software Repositories	**MSR 2011**
7th IEEE Working Conference on Mining Software Repositories	**MSR 2010**
26th IEEE International Conference on Software Maintenance	**ICSM 2010**
4th IEEE International Symposium on Empirical Software Engineering and Measurement	**ESEM 2010**
SPLASH 2010 International Workshop on Flexible Modeling Tools	
18th ACM SIGSOFT International Symposium on the Foundations of Software Engineering, Research Demonstrations Track	
4th International Workshop on Software Clones	
9th ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering	**PASTE 2010**
25th IEEE Conference on Software Maintenance	**ICSM 2009**
6th IEEE Working Conference on Mining Software Repositories	**MSR 2009**
3rd International Workshop on Software Clones	
2009 International Conference on Quality Software	
International Workshop on Recommendation Systems for Software Engineering	

Served on the following panels:

National Science Foundation (2011, 2016, 2016, 2017, 2017, 2018, 2020)
Computing Research Association (CRA) Career Mentoring Workshop, Early Career Faculty Panel
Microsoft Software Engineering Innovation Foundation Workshop, Collaborating with Microsoft Research Panel
New Faculty and Research Symposium, Advice from Junior Faculty and Researchers Panel

Served as a reviewer for the following journals and conferences: *ACM Transactions on Software Engineering and Methodology (TOSEM), IEEE Transactions on Software Engineering, (TSE), Journal of Empirical Software Engineering, (ESE), Journal of Automated Software Engineering (JASE), Journal of Software: Evolution and Process (JSEP), Software Quality Journal, (SQJ), IEEE Software, Journal of*

Software Testing, Verification and Reliability (STVR), 28th ACM Conference on Human Factors in Computing Systems, (CHI 2010) International Conference on Software Engineering (ICSE 2008)

Poster session chair, 6th IEEE Working Conference on Mining Software Repositories (MSR 2009)
Student volunteer co-chair of 38th ACM/IEEE International Conference on Software Engineering (ICSE 2016).
Mentor in the Mentorship Sessions of the 24th ACM SIGSOFT International Symposium on Foundations of Software Engineering (FSE 2016)

STUDENT ADVISING AND PLACEMENT

I am inspired by my adviser, David Notkin's philosophy, "Focus on the students, since graduating great students means you'll produce great research, while focusing on the research may or may not produce great students."

Ph.D. Dissertation Supervision:

Jason Teoh "Performance and Correctness Debugging for Big Data Analytics"	2022
Muhammad Ali Gulzar "Automated Testing and Debugging for Big Data Analytics" **Assistant Professor at Virginia Tech**	2020
Tianyi Zhang "Leveraging Program Commonalities and Variations for Systematic Software Development and Maintenance" **Assistant Professor at Purdue University**	2019
Na Meng "Automating Program Transformations based on Examples of Systematic Edits." **Associate Professor at Virginia Tech**	2014
Baishakhi Ray "Analysis of Cross-System Porting and Porting Errors in Software Projects." **Associate Professor at Columbia University**	2013

Postdoc Supervision:

Myoungkyu Song, ***Associate Professor at University of Nebraska, Omaha***	2013-2015
Qian Zhang, ***Assistant Professor at University of California, Riverside***	2019-2022

Current Ph.D. Students:
Haoran Ma
Yifan Qiao
Jiyuan Wang
Fabrice Harel Canada

M.S. Thesis Supervision:

	2017
Valeed Malik, "Clone Detection in R"	
Yamini Gotimulkul, "A Study of Cross-Project Porting Awareness using Visual Exploration"	
Lisa Hua, *"A Case Study of Cross-Branch Porting in Linux Kernel"*	2014
Gary Wilson Jr. "*An Empirical Study on Software Quality: Developer Perception of Quality, Metrics, and Visualizations"*	2013
Mark Baum, "*Refactoring for Software Transactional Memory"*	2011
Jihun Park (co-supervised with Doo Hwan Bae) "*An Empirical Study of Supplementary Bug Fixes"*	2011

Undergraduate Research Supervision:

Xueyuan Han (CS), Undergraduate Research Assistant => *PhD Student at Harvard University*
Tyler McDonell, "*An Empirical Study of API Stability and Adoption in the Android Ecosystem" => PhD student at UT Austin*
Napol Rachatasumrit, "*An Empirical Investigation into the Impact of Refactoring on Regression Testing" => Microsoft, MS student at University of Washington.*
John Jacobellis (ECE), NSF REU research assistant. => *MS Student at Carnegie Mellon University*
Nick Kubala (CS), NSF REU research assistant
Diane Lee (CS), NSF REU research assistant (Graduated in Spring 2012)
Justin Chen (ECE), NSF REU research assistant (Graduated in Spring 2012)

UNIVERSITY COMMITTEE ASSIGNMENTS:

Departmental	Chair of By-Law 55 Committee (UCLA)	2020-2021
	Field Chair of Software Systems (UCLA)	2019-2021
	Chair of CS Diversity Committee (UCLA)	2016-2017
	Faculty Sponsor of ACM-W (UCLA)	2014-present
	Initiated ACM-W Distinguished Speaker Series	2016-present
	CS 201 Coordinator	2014-2015
	Faculty Sponsor of Women in ECE (UT Austin)	2011-2014
	Graduate Studies Committee (UT Austin)	2009-2014
	Graduate Admissions Committee (UT Austin)	2009-2012
	Graduate Site Visit Day Coordinator (UT Austin)	2012
	Graduate Recruiting Committee (UT Austin)	2009-2012
	Faculty Recruiting Committee (UT Austin)	2010-2011
School	Member, Diversity Committee in Henry Samueli School of Engineering and Applied Science (UCLA)	2015-present
College	Member, Women in Engineering (WEP) Committee (UT Austin)	2011-present
University	Academic Senate Legislative Assembly Representative	2019-2021
	Faculty in Residence, Office of Residential Life (UCLA)	2016-current

ORAL PRESENTATIONS / OTHER PROFESSIONAL ACTIVITIES:

- Invited Talk, "Software Developer Tools for Democratizing Heterogeneous Computing Applications," Department of Energy, Programming Systems Research Forum.
- Invited Talk, "Software Developer Tools for Democratizing Heterogeneous Computing Applications", Oak Ridge National Lab, February, 2022
- **Distinguished Lecture, "Software Engineering for Data Analytics (SE4DA)", UIUC, March, 2021**
- **Distinguished Lecture, "Software Engineering for Data Analytics (SE4DA)" Univ of Minnesota's Cray Colloquium, January, 2021**
- **ICSME 2020 Most Influential Paper Award Presentation, October, 2020**
- NSF SHF Panel 2020
- **ICSE 2020 Technical Briefing, Software Engineering for Data Analytics (SE4DA), July 2020**
- Dagstuhl Seminar, SE4ML - Software Engineering for AI-ML-based Systems", February, 2020
- **ASE 2019 Keynote, "Re-engineering Software Engineering for a Data-centric World "**
- ETH Zurich Workshop on Dependable and Secure Software Systems, "Re-engineering Software Engineering for a Data-centric World" October 2019
- Intel CAPA Meeting Presentation
- KAIST Colloquium, "Software Engineering elevating Big Data Analytics", September 2019
- PI Meeting Talk: Synergistic Software Customization: Frameworks, Algorithms and Tools, Office of Naval Research TPCP program, June 2019
- Paper Presentation: Analyzing and Supporting Adaptation of Online Code Examples, 41st IEEE/ACM International Conference on Software Engineering, 2019
- Paper Presentation: Active Inductive Logic Programming for Code Search, 41st IEEE/ACM International Conference on Software Engineering, 2019
- **High Energy Physics/CS Special Seminar,** Software Engineering for Data Science and Big Data Analytics, **Caltech**, May 2019
- **Keynote: New Frontiers of Mining Software Repositories** --- Usability and Information Delivery. 1st Workshop on Automated Specification Inference, FSE 2018
- Invited Talk: Data Science elevating Software Engineering and Software Engineering elevating Data Science, Vision Forum Santa Barbara, November 2018
- Invited Talk, Microsoft, 2018
- NSF ICorps – SanDiego Kickoff 2018
- Spark Conference, Automated Debugging of Big Data Analytics in Apache Spark Using BigSift, 2018
- CMU Invited Talk, "Interactive and Automated Debugging for Big Data Analytics", June 2018
- Google Invited Talk, "Interactive and Automated Debugging for Big Data Analytics", June 2018
- Amazon Invited Talk, "Interactive and Automated Debugging for Big Data Analytics", June 2018
- Seminar: "Interactive and Automated Debugging for Big Data Analytics"
    - University of California, Berkeley, May 2018
    - University of Washington, April 2018
- PI Meeting Talk: Synergistic Software Customization: Frameworks, Algorithms and Tools, Office of Naval Research TPCP program, May 2018
- **Distinguished Lecture, "Interactive and Automated Debugging for Big Data Analytics," University of California, Irvine, February 2018**
- Invited Talk: "Who are we? The largest-scale study of professional data scientists," Strata Conference in San Jose, March 2018

- PI Meeting Talk: "Synergistic Software Customization: Frameworks, Algorithms and Tools," ONR TPCP Kickoff Meeting, UCLA, January 2018
- **Invited Speaker for Facebook Software Engineering Workshop, *I was one of seven world leading software engineering researchers selected for an invited talk*.** "Interactive and Automated Debugging for Big Data Analytics."*in London, December 2018.*
- PI Meeting Talk: Dynamic Invariant based FPGA Optimization and Performance Debugging, Intel / NSF Project Kick Off Meeting, Santa Clara, CA, September 2017
- **Invited Talks: "Interactive and Automated Debugging for Big Data Analytics"** in the following 5 locations in 2017
    - University of College London, June 2017
    - LMU Munich, Germany, June 2017
    - Google, Los Angeles, CA, April 2017
- **Invited Talks: "Interactive Debugging for Big Data Analytics,"** in the following 2 locations in 2016
    - University of Southern California, Los Angeles, CA, November 2016
    - Microsoft Research, Redmond WA September 2016
- Paper Presentation: "The Emerging Role of Data Scientists on Software Development Teams" IEEE/ACM 38th IEEE International Conference on Software Engineering" Austin, TX, 2016
- **Invited Colloquium: "Automating Program Transformations based on Examples of Systematic Edits", Hong Kong University of Science and Technology, Nov 2015.**
- Microsoft Research, Programmability at Cloud Scale Workshop, "Interactive big data debugging" Redmond, WA, July 2015
- Paper Presentation: "Interactive Code Review for Systematic Changes" IEEE/ACM 37th IEEE International Conference on Software Engineering" Florence, Italy 2015
- Paper Presentation: "Does Automated Refactoring Obviate Systematic Editing?" IEEE/ACM 37th IEEE International Conference on Software Engineering" Florence, Italy 2015
- "Cooperative Trusted Software Repair for Cyber Physical System Resiliency," AFRL Kickoff Meeting, Rome NY, April 2015
- "RefDistiller: A Refactoring-Aware Code Review Tool for Inspecting Manual Refactoring Edits," SoCal Programming Languages Workshop, December 2014.
- "Analysis and Automation of Systematic Software Changes," DARPA MUSE Kickoff Meeting, Annapolis, October 2014
- Microsoft Research, End of Visit Talk, "The Emerging Role of Data Scientists in Software Development Teams," Redmond, WA, August 2014
- "Information> Tool vs. Information ->Tools", Dagstuhl Seminar on Software Development Analytics, June 2014
- **Invited Speaker for Top Gun Series –*recognizes faculty on a trajectory to be the research leaders of the coming decades*, "Automation, Analysis, and Reconstruction of Systematic Changes," University of Virginia, Charlottesville, VA, November 2013**
- Paper Presentation: "An Empirical Study of API Stability and Adoption in the Android Ecosystem," 29th IEEE International Conference on Software Maintenance, Eindhoven, the Netherlands, September 2013
- **"Automation, Analysis, and Reconstruction of Systematic Changes," Seminar at the following 6 universities, May 2013-November 2013:**
    - University of Maryland, College Park, MD, November 2013
    - University of Wisconsin, Madison WI, September 2013
    - University of Illinois Urbana Champaign, Champaign, IL, September 2013
    - IBM Research, Austin, TX, August 2013
    - University of Southern California, Los Angeles, CA, June 2013

    - Carnegie Mellon University, Pittsburgh, PA, May 2013
- Paper Presentation: "A Field Study of Refactoring Challenges and Benefits," ACM SIGSOFT the 20th International Symposium on the Foundations of Software Engineering, Cary, NC, November 2012
- Paper Presentation: "An Empirical Investigation into the Impact of Refactoring on Regression Testing," The 28th IEEE International Conference on Software Maintenance, Riva del Garda, Trento, Italy, September 2012
- "RefFinder: A Logic Query based Refactoring Reconstruction Approach," Microsoft Software Engineering Innovation Foundation (SEIF) Workshop, Redmond, WA, July 2012
- **Microsoft Faculty Summit SEIF Workshop Invited Panelist**—Collaborating with Microsoft Research session, Redmond, WA, July 2012
- **CRA Career Mentoring Workshop Invited Panelist**—Advice from Junior Faculty and Researchers session, Washington, DC, February, 2012
- "Analysis and Automation of Systematic Software Modifications," Seminar at the following 6 universities, December 2011-January 2012:
    - University of California, San Diego, CA
    - University of California, Irvine, CA
    - Tsinghua University, Beijing, China
    - Peking University, Beijing, China
    - Korea Advanced Institute of Science and Technology (KAIST), Daejon, South Korea
    - Sungkyunkwan University, Seoul, South Korea
- Microsoft Research, End of Visit Talk, "A Field Study of Refactoring Rationale, Benefits, and Challenges," Redmond, WA, August 2011
- **New Faculty and Researchers Symposium Invited Panelist**—Advice from Junior Faculty and Researchers session, The 33rd International Conference on Software Engineering (ICSE 2011), Honolulu, HI, May 2011
- Paper Presentation: "An Empirical Investigation into the Role of Refactoring during Software Evolution," The 33rd International Conference on Software Engineering (ICSE 2011), Honolulu, HI, May 2011
- "Advanced Software Evolution Analysis," Texas Software Engineering Symposium, Austin, TX, June 2011
- Paper Presentation: "An Empirical Study of Long-Lived Code Clones," The 14th International Conference on Fundamental Approaches to Software Engineering (ETAPS/FASE 2011), Saarbrucken, Germany, April 2011
- "Automating Systematic Software Extension," Software Engineering Seminar at Saarland University in Saarbrucken, Germany, April 2011
- Paper Presentation: "Ref-Finder: Refactoring Reconstruction Tool based on Logic Query Templates," The 18th ACM SIGSOFT Symposium on the Foundations of Software Engineering (FSE 2010), Santa Fe, NM, November 2010
- Paper Presentation: "Validity Concerns in Software Engineering," The 18th ACM SIGSOFT Symposium on the Foundations of Software Engineering (FSE 2010), Santa Fe, NM, November 2010
- "Supporting Evolution of Large Software Systems," UT CS Programming Languages Seminar, Austin TX, November 2010
- Paper Presentation: "Template-based Reconstruction of Complex Refactoring," International Conference on Software Maintenance, (ICSM 2010), Timisoara, Romania, September 2010
- "Software Evolution Analysis," Technical Debt Workshop, Carnegie Mellon Software Engineering Institute, Pittsburgh, PA, June 2010
- "Discovering and Representing Systematic Code Changes," Dacapo Meeting, Tufts University,

Medord, MA, April 2009

- Paper Presentation: "Discovering and representing systematic code changes," International Conference on Software Engineering,"(ICSE 2009), Vancouver, BC, Canada, May 2009
- "Analyzing and Inferring the Structure of Code Changes," Seminar at the following 3 locations, November 2008:
    - Seoul National University, Seoul, South Korea
    - Korea Advanced Institute of Science and Technology (KAIST), Daejon, South Korea
    - Samsung Electronics, Suwon, South Korea
- **"Analyzing and Inferring the Structure of Code Changes," Faculty Candidate Talk at the following 7 locations, February- April 2008:**
    - University of California, Berkeley, CA
    - Georgia Institute of Technology, Atlanta, GA
    - University of Texas at Austin, TX
    - North Carolina State University, Raleigh, NC
    - University of Colorado, Boulder, CO
    - Oregon State University, Corvallis, OR
    - Microsoft Research, Redmond, WA
- "Discovering and Representing Logical Structure in Code Changes," Dagstuhl Seminar 07491 on Mining Programs and Processes, Schloss Dagstuhl, Saarbrucken, Germany, December 2007.
- Paper Presentation: "Automatic Inference of Structural Changes for Matching across Program Versions," International Conference on Software Engineering, (ICSE 2007), Minneapolis, MN, USA, May 2007
- Doctoral Symposium Presentation: "Understanding and Aiding Code Evolution by Inferring Change Patterns," International Conference on Software Engineering, (ICSE 2007), Minneapolis, MN, USA, May 2007
- **"Automatic Inference of Likely Changes for Matching Across Program Versions," Seminar at the following 4 universities, November 2006:**
    - University of Saarland, Germany
    - University of Zurich, Zurich, Switzerland
    - University of Lugano, Lugano, Switzerland
    - University of Bremen, Bremen, Germany
- Paper Presentation: "Program Element Matching for Multi-Version Program Analyses," Mining Software Repositories Workshop, (MSR 2006), Shanghai, China, May 2006
- "Multi-Version Program Analysis," Seminar, Pohang University of Science and Technology, Pohang, South Korea, June 2006
- Paper Presentation: "An Empirical Study of Code Clone Genealogies," European Software Engineering Conference held jointly with 13th ACM SIGSOFT International Symposium on Foundations of Software Engineering, (ESEC/FSE 2005), Lisbon, Portugal, September 2005
- "An Empirical Study of Code Clone Genealogies," IBM T.J. Watson Research Center, Hawthorn, NY, September 2005
- "A Study of Code Clone Genealogies," Dagstuhl Seminar 05261 on Multi-Version Program Analysis, Schloss Dagstuhl, Saarbrucken, Germany, June 2005
- "Evolution of Code Clones in Open Source Projects," Department of Electrical and Computer Engineering, University of British Columbia, Canada, January 2005
- Paper Presentation: "An Ethnographic Study of Copy and Paste Programming Practices in OOPL," International Symposium on Empirical Software Engineering (ISESE 2004), Redondo Beach, CA, USA, August 2004
- "An Ethnographic Study of Copy and Paste Programming Practices," Seminar at the following 2 universities.

- University of British Columbia, Canada, March 2004
- University of Victoria, Canada, March 2004