Lingming Zhang

Assistant Professor
Department of Computer Science
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Research Interests

Software Engineering and Programming Languages, in particular building advanced software testing and debugging systems to predict, detect, localize, and fix software bugs automatically; the synergy of Software Engineering with Machine Learning and Formal Methods

Employment History

2020 – NOW **Assistant Professor**, University of Illinois at Urbana-Champaign, USA
2014 – 2020 **Assistant Professor (tenured in Spring 2020)**, The University of Texas at Dallas, USA
2011 – 2014 **Research Assistant**, The University of Texas at Austin, USA

Education History

2010 – 2014 **Ph.D. in Software Engineering**, The University of Texas, Austin, USA
Advisor: Sarfraz Khurshid (khurshid@utexas.edu)
2007 – 2010 **M.S. in Computer Science**, Peking University, Beijing, China
2003 – 2007 **B.S. in Computer Science**, Nanjing University, Nanjing, China

Honors and Awards

Nov. 2019 National Science Foundation (NSF) CAREER Award
July 2019 ACM SIGSOFT Distinguished Paper Award [C47] (ISSTA 2019)
July 2019 ACM SIGSOFT Distinguished Paper Award [C46] (ISSTA 2019)
Apr. 2019 Best Industry Paper Award [C42] (ICST 2019)
Apr. 2019 List of Teachers with "Exceed Expectations" Teaching Performance
Mar. 2019 Distinguished Referee for the Journal of Software – Practice and Experience
Apr. 2018 List of Teachers with "Exceed Expectations" Teaching Performance
Oct. 2017 Samsung GRO Award
Apr. 2017 List of Teachers with "Exceed Expectations" Teaching Performance
Feb. 2016 National Science Foundation (NSF) CRII Award
Feb. 2016 Google Faculty Research Award

Research Funding

10 grants/gifts, $2,349,369 in total, personal share: $1,454,867

Nov. 2019 National Science Foundation (NSF) CAREER Award: "Maximal and Scalable Unified Debugging for the JVM Ecosystem" (PI, $519,819)
Nov. 2019 Alibaba Group Gift Funding (PI, $70,000)
Mar. 2019 Amazon AWS Research Grant (PI, $22,900)
Oct. 2018 NVIDIA GPU Grant (PI, Quadro P6000, $6,000)
Oct. 2018 Futurewei Research Gift Funding (PI, $160,000)
July 2018 National Science Foundation (NSF) Medium: "SHF: Medium: Collaborative Research: Enhancing Continuous Integration Testing for the Open-Source Ecosystem" (PI, $1.2M, UTD share: $362,998)
Dec. 2017 Huawei Research Gift Funding (PI, $50,000)
Oct. 2017 Samsung GRO Award (PI, USD100,000, UTD share: $42,500)
Feb. 2016 National Science Foundation (NSF) CRII Award: "CRII:SHF: Machine-Learning-Based Test Effectiveness Prediction" (PI, $174,150)
Feb. 2016 Google Faculty Research Award (PI, $46,500)

Refereed Conference Publications

Top conference statistics: ICSE (7), FSE (4), ISSTA (12), ASE (7), POPL (1), OOPSLA (3)

Please note my (visiting) students and co-supervised students are marked with underscore.

[C61] Samuel Benton, Xia Li, Yiling Lou, **Lingming Zhang**. On the Effectiveness of Unified Debugging: An Extensive Study on 16 Program Repair Systems. In *Proceedings of 35th IEEE/ACM International Conference on Automated Software Engineering (ASE 2020)*, 12 pages, Sept. 2020.

[C60] Junjie Chen, Haoyang Ma, **Lingming Zhang**. Enhanced Compiler Bug Isolation via Memoized Search. In *Proceedings of 35th IEEE/ACM International Conference on Automated Software Engineering (ASE 2020)*, 12 pages, Sept. 2020.

[C59] Yiling Lou, Ali Ghanbari, Xia Li, **Lingming Zhang**, Haotian Zhang, Dan Hao, Lu Zhang. Can Automated Program Repair Refine Fault Localization? A Unified Debugging Approach. In *Proceedings of the 29th ACM International Symposium on Software Testing and Analysis (ISSTA 2020)*, pages 75–87, July 2020.

[C58] Qianyang Peng, August Shi, **Lingming Zhang**. Empirically Revisiting and Enhancing IR-based Test-Case Prioritization. In *Proceedings of the 29th ACM International Symposium on Software Testing and Analysis (ISSTA 2020)*, pages 324–336, July 2020.

[C57] Lingchao Chen, Foyzul Hassan, Xiaoyin Wang, **Lingming Zhang**. Taming Behavioral Backward Incompatibilities via Cross-Project Testing and Analysis. In *Proceedings of the 42nd IEEE/ACM International Conference on Software Engineering (ICSE 2020)*, pages 112–124, May 2020.

[C56] Mingyuan Wu, Yicheng Ouyang, Husheng Zhou, **Lingming Zhang**, Cong Liu, Yuqun Zhang. Simulee: Detecting CUDA Synchronization Bugs via Memory-Access Modeling. In *Proceedings of the 42nd IEEE/ACM International Conference on Software Engineering (ICSE 2020)*, pages 937–948, May 2020.

[C55] Husheng Zhou, Wei Li, Zelun Kong, Yuankun Zhu, Yuqun Zhang, Bei Yu, **Lingming Zhang**, Cong Liu. DeepBillboard: Systematic Physical-World Testing of Autonomous Driving Systems. In *Proceedings of the 42nd IEEE/ACM International Conference on Software Engineering (ICSE 2020)*, pages 347–358, May 2020.

[C54] Jiajun Jiang, Luyao Ren, Yingfei Xiong, **Lingming Zhang**. Inferring Program Transformations From Singular Examples via Big Code. In *Proceedings of 34th IEEE/ACM International Conference on Automated Software Engineering (ASE 2019)*, pages 255–266, Nov. 2019.

[C53] Mingyuan Wu, **Lingming Zhang**, Cong Liu, Shin Hwei Tan, Yuqun Zhang. Automating CUDA Synchronization via Program Transformation. In *Proceedings of 34th IEEE/ACM International Conference on Automated Software Engineering (ASE 2019)*, pages 748–759, Nov. 2019.

[C52] Ali Ghanbari, **Lingming Zhang**. PraPR: Practical Program Repair via Bytecode Mutation. In *Proceedings of 34th IEEE/ACM International Conference on Automated Software Engineering (ASE 2019)*, Tool Demo Track, pages 1118-1121, Nov. 2019.

[C51] Zixin Li, Haoran Wu, Jiehui Xu, Xingya Wang **Lingming Zhang**, Zhenyu Chen. MuSC: A Tool for Mutation Testing of Ethereum Smart Contract. In *Proceedings of 34th IEEE/ACM International Conference on Automated Software Engineering (ASE 2019)*, Tool Demo Track, pages 1198–1201, Nov. 2019.

[C50] August Shi, Milica Hadzi-Tanovic, **Lingming Zhang**, Darko Marinov, Owolabi Legunsen. Reflection-Aware Static Regression Test Selection. In *Proceedings of the ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA 2019)*, pages 187:1-187:29, Oct. 2019.

[C49] Junjie Chen, Jiaqi Han, Peiyi Sun, **Lingming Zhang**, Dan Hao, Lu Zhang. Compiler Bug Isolation via Effective Witness Test Program Generation. In *Proceedings of the 27th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE 2019)*, pages 223–234, Aug. 2019.

[C48] Ali Ghanbari, Samuel Benton, and **Lingming Zhang**. Practical Program Repair *via* Bytecode Mutation. In *Proceedings of the 28th ACM International Symposium on Software Testing and Analysis (ISSTA 2019)*, pages 19–30, July 2019.

[C47] Xia Li, Wei Li, Yuqun Zhang, and **Lingming Zhang**. DeepFL: Integrating Multiple Fault Diagnosis Dimensions for Deep Fault Localization. In *Proceedings of the 28th ACM International Symposium on Software Testing and Analysis (ISSTA 2019)*, pages 169–180, July 2019. **ACM SIGSOFT Distinguished Paper Award**

[C46] Yiling Lou, Junjie Chen, **Lingming Zhang**, Dan Hao, and Lu Zhang. History-driven Build Failure Fixing: How Far Are We?. In *Proceedings of the 28th ACM International Symposium on Software Testing and Analysis (ISSTA 2019)*, pages 43–54, July 2019. **ACM SIGSOFT Distinguished Paper Award**

[C45] Samuel Benton, Ali Ghanbari, and **Lingming Zhang**. DefeXts: A Curated Dataset of Reproducible Real-World Bugs for Modern JVM Languages. In *Proceedings of the 41th IEEE/ACM International Conference on Software Engineering (ICSE 2019)*, Tool Demo Track, pages 47–50, May 2019.

[C44] Jie Zhang, **Lingming Zhang**, Dan Hao, Meng Wang and Lu Zhang. Do Pseudo Test Suites Lead to Inflated Correlation in Measuring Test Effectiveness? In *Proceedings of the 12th IEEE International Conference on Software Testing, Verification and Validation (ICST 2019)*, pages 252–263, April 2019.

[C43] Dongyu Mao, Lingchao Chen, **Lingming Zhang**. An Extensive Study on Cross-project Predictive Mutation Testing. In *Proceedings of the 12th IEEE International Conference on Software Testing, Verification and Validation (ICST 2019)*, pages 160–171, April 2019.

[C42] Hua Zhong, **Lingming Zhang**, Sarfraz Khurshid. TestSage: Regression Test Selection for Large-scale Web Service Testing. In *Proceedings of the 12th IEEE International Conference on Software Testing, Verification and Validation (ICST 2019)*, Industry Track, pages 430–440, April 2019. **Best Industry Paper Award**

[C41] Junjie Chen, Yiling Lou, **Lingming Zhang**, Jianyi Zhou, Xiaoleng Wang, Dan Hao, Lu Zhang. Optimizing Test Prioritization via Test Distribution Analysis. In *Proceedings of the 26th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE 2018)*, pages 656–667, Nov. 2018.

[C40] Mengshi Zhang, Yuqun Zhang, **Lingming Zhang**, Cong Liu, Sarfraz Khurshid. DeepRoad: GAN-based Metamorphic Testing and Input Validation Framework for Autonomous Driving Systems. In *Proceedings of 33rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2018)*, pages 132–142, Sep. 2018.

[C39] **Lingming Zhang**. Hybrid Regression Test Selection. In *Proceedings of the 40th IEEE/ACM International Conference on Software Engineering (ICSE 2018)*, pages 199-209, May 2018.

[C38] Alex Groce, Josie Holmes, Darko Marinov, August Shi and **Lingming Zhang**. An Extensible, Regular-Expression-Based Tool for Multi-Language Mutant Generation. In *Proceedings of the 40th IEEE/ACM International Conference on Software Engineering (ICSE 2018)*, Tool Demo Track, pages 25–28, May 2018.

[C37] Junjie Chen, Wenxiang Hu, **Lingming Zhang**, Dan Hao, Sarfraz Khurshid, Lu Zhang. Learning to Accelerate Symbolic Execution via Code Transformation. In *Proceedings of the European Conference on Object-Oriented Programming (ECOOP 2018)*, pages 6:1–6:27, July 2018.

[C36] Lingchao Chen, **Lingming Zhang**. Speeding up Mutation Testing via Regression Test Selection: An Extensive Study. In *Proceedings of the 11th IEEE International Conference on Software Testing, Verification and Validation (ICST 2018)*, pages 58–69, April 2018.

[C35] Xia Li, **Lingming Zhang**. Transforming Programs and Tests in Tandem for Fault Localization. In *Proceedings of the ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA 2017)*, pages: 92:1-92:30, Oct. 2017.

[C34] Zheng Dong, Yuchuan Liu, Husheng Zhou, Yu Gu, **Lingming Zhang**, Cong Liu. An Energy-efficient Offloading Framework with Predictable Temporal Correctness. In *Proceedings of the ACM/IEEE Symposium on Edge Computing (SEC 2017)*, pages: 19:1-19:12, Oct 2017.

[C33] Mengshi Zhang, Xia Li, **Lingming Zhang**, Sarfraz Khurshid. Boosting Spectrum-Based Fault Localization using PageRank. In *Proceedings of the ACM International Symposium on Software Testing and Analysis (ISSTA 2017)*, pages: 261-272, July 2017.

[C32] Jie Zhang, Yiling Lou, Di Bai, **Lingming Zhang**, Dan Hao, Meng Wang, Lu Zhang. Is Using Artificial Test Suites a Threat? An Empirical Study of Code Coverage. In *Proceedings of the 39th IEEE/ACM International Conference on Software Engineering (ICSE 2017)*, Poster, pages: to appear, May 2017.

[C31] Hao Tang, Di Wang, Yingfei Xiong, **Lingming Zhang**, Xiaoyin Wang, Lu Zhang. Conditional Dyck-CFL Reachability Analysis for Complete and Efficient Library Summarization. In *Proceedings of the 26th European Symposium on Programming (ESOP 2017)*, pages: 880-908, April 2017.

[C30] Tung Dao, **Lingming Zhang**, Na Meng. How Does Execution Information Help with Information-Retrieval Based Bug Localization? In *Proceedings of the 25th International Conference on Program Comprehension (ICPC 2017)*, pages: 241-250, May 2017.

[C29] Junjie Chen, Yanwei Bai, Dan Hao, **Lingming Zhang**, Lu Zhang, Bing Xie. How Do Assertions Impact Coverage-based Test-Suite Reduction? In *Proceedings of the IEEE International Conference on Software Testing, Verification and Validation (ICST 2017)*, Short Paper, pages: 418-423, March 2017.

[C28] Owolabi Legunsen, Farah Hariri, August Shi, Yafeng Lu, **Lingming Zhang**, and Darko Marinov. An Extensive Study of Static Regression Test Selection in Modern Software Evolution. In *Proceedings of 24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE'16)*, pages 583-594, Nov. 2016.

[C27] Jie Zhang, Yiling Lou, **Lingming Zhang**, Dan Hao, Lu Zhang, Hong Mei. Isomorphic Regression Testing: Executing Uncovered Branches without Test Augmentation. In *Proceedings of 24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE'16)*, pages 883-894, Nov. 2016.

[C26] Hua Zhong, **Lingming Zhang**, Sarfraz Khurshid. Combinatorial Generation of Structurally Complex Test Inputs for Commercial Software Applications. In *Proceedings of 24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE'16)*, Industry track, pages 981-986, Nov. 2016.

[C25] Junjie Chen, Yanwei Bai, Dan Hao, **Lingming Zhang**, Lu Zhang, Bing Xie and Hong Mei. Supporting Oracle Construction via Static Analysis. In *Proceedings of 31st IEEE/ACM International Conference on Automated Software Engineering (ASE 2016)*, pages 178-189, Sept. 2016.

[C24] Jie Zhang, Ziyi Wang, **Lingming Zhang**, Dan Hao, Lei Zang, Shiyang Cheng and Lu Zhang. Predictive Mutation Testing. In *Proceedings of the ACM International Symposium on Software Testing and Analysis (ISSTA 2016)*, pages 342-353, July 2016.

[C23] Hua Zhong, **Lingming Zhang**, Sarfraz Khurshid. The comKorat Tool: Unified Combinatorial and Constraint-based Generation of Structurally Complex Tests. In *Proceedings of the 8th NASA Formal Methods Symposium (NFM 2016)*, pages 107-113, June 2016.

[C22] Yafeng Lu, Yiling Lou, Shiyang Cheng, **Lingming Zhang**, Dan Hao, Yangfan Zhou, Lu Zhang. How Does Regression Test Prioritization Perform in Real-World Software Evolution? In *Proceedings of the 38th IEEE/ACM International Conference on Software Engineering (ICSE 2016)*, pages 535-546, May 2016.

[C21] Tao Ye, **Lingming Zhang**, Linzhang Wang, Xuandong Li. An Empirical Study on Detecting and Fixing Buffer Overflow Bugs. In *Proceedings of the IEEE International Conference on Software Testing, Verification and Validation (ICST 2016)*, pages 91-101, April 2016.

[C20] Shiyu Dong, Oswaldo Olivo, **Lingming Zhang**, Sarfraz Khurshid. Studying the Influence of Standard Compiler Optimizations on Symbolic Execution. In *Proceedings of the 26th IEEE International Symposium on Software Reliability Engineering (ISSRE 2015)*, pages 205-215, Nov. 2015.

[C19] Xianglong Kong, **Lingming Zhang**, W. Eric Wong, Bixin Li. Experience Report: How Do Techniques, Programs, and Tests Impact Automated Program Repair? In *Proceedings of the 26th IEEE International Symposium on Software Reliability Engineering (ISSRE 2015)*, pages 194-204, Nov. 2015.

[C18] Xiaoyin Wang, **Lingming Zhang**, Philip Tanofsky. Experience Report: How is Dynamic Symbolic Execution Different from Manual Testing? - A Study on KLEE. In *Proceedings of the ACM International Symposium on Software Testing and Analysis (ISSTA 2015)*, pages 199-210, Experience paper, July 2015.

[C17] Ripon K. Saha, **Lingming Zhang**, Sarfraz Khurshid, Dewayne E. Perry. An Information Retrieval Approach for Regression Test Prioritization Based on Program Changes. In *Proceedings of the 37th IEEE/ACM International Conference on Software Engineering (ICSE 2015)*, pages 268-279, May 2015.

[C16] Hao Tang, Xiaoyin Wang, **Lingming Zhang**, Lu Zhang, Bing Xie, Hong Mei. Summary-Based Context-Sensitive Data-Dependence Analysis in Presence of Callbacks. In *Proceedings of the 42nd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL 2015)*, pages 83–95, January 2015.

[C15] **Lingming Zhang**, Guowei Yang, Neha Rungta, Suzette Person, Sarfraz Khurshid. Feedback-Driven Dynamic Invariant Discovery. In *Proceedings of the International Symposium on Software Testing and Analysis (ISSTA 2014)*, pages 362-372, July 2014.

[C14] **Lingming Zhang**, Lu Zhang, Sarfraz Khurshid. Injecting Mechanical Faults to Localize Developer Faults for Evolving Software. In *Proceedings of the ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications (SPLASH/OOPSLA 2013)*, pages 765-784, October 2013.

[C13] **Lingming Zhang**, Milos Gligoric, Darko Marinov, Sarfraz Khurshid. Operator-based and Random Mutant Selection: Better Together. In *Proceedings of the 28th IEEE/ACM Conference on Automated Software Engineering (ASE 2013)*, pages 92-102, November 2013.

[C12] **Lingming Zhang**, Dan Hao, Lu Zhang, Gregg Rothermel and Hong Mei. Bridging the Gap Between the Total and Additional Test-Case Prioritization Strategies. In *Proceedings of the 35th IEEE/ACM International Conference on Software Engineering (ICSE 2013)*, pages 192-201, May 2013.

[C11] **Lingming Zhang**, Darko Marinov, Sarfraz Khurshid. Faster Mutation Testing Inspired by Test Prioritization and Reduction. In *Proceedings of the International Symposium on Software Testing and Analysis (ISSTA 2013)*, pages 235-245, July 2013.

[C10] Milos Gligoric, **Lingming Zhang**, Cristiano Pereira and Gilles Pokam. Selective Mutation Testing for Concurrent Code. In *Proceedings of the International Symposium on Software Testing and Analysis (ISSTA 2013)*, pages 224-234, July 2013.

[C9] **Lingming Zhang**, Darko Marinov, Lu Zhang, Sarfraz Khurshid. Regression Mutation Testing. In *Proceedings of the International Symposium on Software Testing and Analysis (ISSTA 2012)*, pages 331-341, July 2012.

[C8] **Lingming Zhang**, Miryung Kim, Sarfraz Khurshid. FaultTracer: A Change Impact and Regression Fault Analysis Tool for Evolving Java Programs. In *Proceedings of the 20th ACM SIGSOFT International Symposium on the Foundation of Software Engineering (FSE 2012)*, tool demonstration track, pages 40:1-4, November 2012.

[C7] **Lingming Zhang**, Darko Marinov, Lu Zhang, Sarfraz Khurshid. An Empirical Study of JUnit Test-Suite Reduction. In *Proceedings of the 22nd IEEE International Symposium on Software Reliability Engineering (ISSRE 2011)*, pages 170-179, November 2011.

[C6] Shadi Abdul Khalek, Guowei Yang, **Lingming Zhang**, Darko Marinov, Sarfraz Khurshid. TestEra: A Tool for Testing Java Programs Using Alloy Specifications. In *Proceedings of the 26th IEEE/ACM International Conference on Automated Software Engineering (ASE 2011)*, tool demonstration track, pages 608-611, November 2011.

[C5] **Lingming Zhang**, Miryung Kim, Sarfraz Khurshid. Localizing Failure-Inducing Program Edits Based on Spectrum Information. In *Proceedings of the 27th IEEE International Conference on Software Maintenance (ICSM 2011)*, pages 23-32, September 2011. **Invited to the Special Issue of Journal of Software Maintenance and Evolution (JSME).**

[C4] **Lingming Zhang**, Tao Xie, Lu Zhang, Nikolai Tillmann, Jonathan de Halleux. Test Generation via Dynamic Symbolic Execution for Mutation Testing. In *Proceedings of the 26th IEEE International Conference on Software Maintenance (ICSM 2010)*, pages 1-10, September 2010.

[C3] **Lingming Zhang**, Ji Zhou, Dan Hao, Lu Zhang, and Hong Mei. Prioritizing JUnit Test Cases in Absence of Coverage Information. In *Proceedings of the 25th IEEE International Conference on Software Maintenance (ICSM 2009)*, pages 19-28, September 2009.

[C2] **Lingming Zhang**, Ji Zhou, Dan Hao, Lu Zhang, and Hong Mei. Jtop: Managing JUnit Test Cases in Absence of Coverage Information. In *Proceedings of the 24th IEEE/ACM International Conference on Automated Software Engineering (ASE 2009)*, tool demonstration track, pages 677-679, November 2009.

[C1] Dan Hao, **Lingming Zhang**, Lu Zhang, Jiasu Sun and Hong Mei. VIDA: Visual Interactive Debugging. In *Proceedings of the 31st IEEE/ACM International Conference on Software Engineering (ICSE 2009)*, tool demonstration track, pages 583-586, May 2009.

Articles in Refereed Journals

[J10] Junjie Chen, Zhuo Wu, Zan Wang, Yanmo You, **Lingming Zhang**, Ming Yan. Practical Accuracy Estimation for Efficient Deep Neural Network Testing. *ACM Transactions on Software Engineering and Methodology (TOSEM 2020)*, to appear, 2020.

[J9] Mengshi Zhang, Yaoxian Li, Xia Li, Lingchao Chen, Yuqun Zhang, **Lingming Zhang**, Sarfraz Khurshid. An Empirical Study of Boosting Spectrum-based Fault Localization via PageRank. *IEEE Transactions on Software Engineering (TSE 2020)*, to appear, 2020. **An extended version of our ISSTA 2017 paper.**

[J8] Jie Zhang, **Lingming Zhang**, Mark Harman, Dan Hao, Yue Jia, Lu Zhang. Predictive Mutation Testing. *IEEE Transactions on Software Engineering (TSE 2019)*, 45(9): 898–918, 2019. **An extended version of our ISSTA 2016 paper.**

[J7] Qi Luo, Kevin Moran, **Lingming Zhang**, Denys Poshyvanyk. How Do Static and Dynamic Test Case Prioritization Techniques Perform on Modern Software Systems? An Extensive Study on GitHub Projects. *IEEE Transactions on Software Engineering (TSE 2019)*, 45(11): 1054–1080, 2019.

[J6] Yiling Lou, Junjie Chen, **Lingming Zhang**, Dan Hao. A Survey on Regression Test-Case Prioritization. *Advanced in Computers*, 113: 1-46, 2019.

[J5] Zheng Dong, Cong Liu, Soroush Bateni, Zelun Kong, Liang He, **Lingming Zhang**, Ravi Prakash, Yuqun Zhang. A General Analysis Framework for Soft Real-Time Tasks. *IEEE Transactions on Parallel and Distributed Systems (TPDS 2019)*, 30(6): 1222–1237, 2019.

[J4] Xianglong Kong, **Lingming Zhang**, W. Eric Wong, Bixin Li. The Impacts of Techniques, Programs and Tests on Automated Program Repair: An Empirical Study. *Journal of Systems and Software (JSS 2018)*, 137: 480–496, 2018.

[J3] Dan Hao, **Lingming Zhang**, Lu Zhang, Gregg Rothermel, and Hong Mei. A Unified Test-Case Prioritization Approach. *ACM Transactions on Software Engineering and Methodology (TOSEM 2015)*, 24(2): 10:1-10:31. **An extended version of our ICSE 2013 paper.**

[J2] **Lingming Zhang**, Miryung Kim, Sarfraz Khurshid. FaultTracer: A Spectrum-Based Approach to Localizing Failure-Inducing Program Edits. *Journal of Software Evolution and Process (JSEP 2013)*, Vol. 25, Issue 12, Pages 1357–1383. **An extended version of our ICSM 2011 paper.**

[J1] Hong Mei, Dan Hao, **Lingming Zhang**, Lu Zhang, Gregg Rothermel. A Static Approach to Prioritizing JUnit Test Cases. *IEEE Transactions on Software Engineering (TSE 2012)*, Vol.38, No.6, pages 1258-1275, November 2012. **An extended version of our ICSM 2009 paper.**

PhD Students

1 graduated and 3 current.

2016–2020 **Xia Li** [C33, C35, C47, J9, C59, C61]

Topic: *An Integrated Approach for Automated Software Debugging via Machine Learning and Big Code Mining*.

ACM SIGSOFT Distinguished Paper Award

First job: Tenure-track Assistant Professor at Kennesaw State University

2018–NOW **Samuel Benton** [C45, C48, C61]

Topic: *Automated Bug Detection and Repair for JVM-based Languages*.

4th place in the 1st Annual IEEE Software Testing Contest

2017–NOW **Lingchao Chen** [C36, C43, C57, J9]

Topic: *Cross-Boundary Regression Testing Techniques*.

2020–NOW **Yicheng Ouyang** [C56]

Topic: *Learning to Fuzz*.

MS Students

MS 2020 **Mingyuan Wu** (coadvised MS student from SUSTech, China) [C53, C56]
Topic: *Detecting and Fixing Synchronization Bugs for CUDA Programs*.
Current: PhD student at University of Hong Kong

MS 2017 **Mengshi Zhang** (coadvised MS student from UT Austin) [C33, C40, J9]
Topic: *Boosting Spectrum-based Fault Localization Using PageRank*.
Current employment: Facebook

MS 2019 **Dongyu Mao** [C43]
Topic: *Predictive Mutation Testing via Deep Neural Networks*.
Current: PhD student at UT Dallas

MS 2019 **Qianyang Peng** (coadvised MS student from UIUC) [C59]
Topic: *Empirically Revisiting and Enhancing IR-based Test-Case Prioritization*.
Current employment: Google

MS 2016 **Shiyang Cheng** [C22, C24]
Topic: *An Extensive Study of Software Oracle in the Wild*.
Current employment: VISA

MS 2016 **Mengdi Deng**
Topic: *Threats to Validity in Regression Testing Evaluation*.
Current employment: Amazon

MS 2016 **Yafeng Lu** [C22, C28]
Topic: *Practical Regression Testing Techniques for Real-World Software Evolution*.
Current employment: VMware

MS 2016 **Chaoran Wang**
Topic: *An Extensive Study of GitHub Project Evolution*.
Current employment: Amazon

Classroom Teaching

Spring 2020 Instructor, Software Testing and Validation, and Verification (CS/CE/SE6367), Graduate-level, The University of Texas at Dallas

Fall 2019 Instructor, Software Testing Verification Validation and Quality Assurance (SE4367), Undergraduate-level, The University of Texas at Dallas

Spring 2019 Instructor, Software Testing and Validation, and Verification (CS/CE/SE6367), Graduate-level, The University of Texas at Dallas

Fall 2018 Instructor, Software Testing Verification Validation and Quality Assurance (SE4367), Undergraduate-level, The University of Texas at Dallas

Spring 2018 Instructor, Software Testing and Validation, and Verification (CS/CE/SE6367), Graduate-level, The University of Texas at Dallas

Fall 2017 Instructor, Software Testing and Validation, and Verification (CS/CE/SE6367), Graduate-level, The University of Texas at Dallas

Spring 2017 Instructor, Software Testing and Validation, and Verification (CS/CE/SE6367), Graduate-level, The University of Texas at Dallas

Fall 2016 Instructor, Software Testing and Validation, and Verification (CS/CE/SE6367), Graduate-level, The University of Texas at Dallas

Spring 2016 Instructor, Software Testing and Validation, and Verification (CS/CE/SE6367), Graduate-level, The University of Texas at Dallas

Fall 2015 Instructor, Software Engineering (CS/CE/SE3354), Undergraduate-level, The University of Texas at Dallas

Spring 2015 Instructor, Advanced Software Testing and Verification (CS/SE6301), Graduate-level, The University of Texas at Dallas

Fall 2014 Instructor, Software Engineering (CS/SE/CE3354), Undergraduate-level, The University of Texas at Dallas

Spring 2013	Teaching Assistant, Software Testing (EE360T/EE382V), Undergraduate-level, The University of Texas at Austin
Spring 2009	Teaching Assistant, Multi-Agent Technology, Graduate-level, Peking University, China

Professional Service (Conference)

Organizing Committees (4 in total)

Workshops Co-Chair	29th International Symposium on Software Testing and Analysis (ISSTA 2020)
Social Media Co-Chair	42nd IEEE/ACM International Conference on Software Engineering (ICSE 2020)
Publication Chair	IEEE International Conference on Software Testing, Verification and Validation (ICST 2019)
Social Media Co-Chair	31st IEEE/ACM International Conference on Automated Software Engineering (ASE 2016)

Program Committees (41 in total)

PC Member	30th International Symposium on Software Testing and Analysis (ISSTA 2021)
PC Member	IEEE International Conference on Software Testing, Verification and Validation (ICST 2021)
PC Member	35th European Conference on Object-Oriented Programming (ECOOP 2021)
PC Member	42nd IEEE/ACM International Conference on Software Engineering (ICSE 2020)
PC Member	42nd IEEE/ACM International Conference on Software Engineering (ICSE 2020 Tool Demo)
PC Member	28th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2020)
PC Member	29th International Symposium on Software Testing and Analysis (ISSTA 2020)
PC Member	35th IEEE/ACM International Conference on Automated Software Engineering (ASE 2020)
PC Member	36th IEEE International Conference on Software Maintenance and Evolution (ICSME 2020)
PC Member	31th IEEE International Symposium on Software Reliability Engineering (ISSRE 2020)
PC Member	15th International Workshop on Mutation Analysis (Mutation 2020)
PC Member	5th International Workshop on Metamorphic Testing (MET 2020)
PC Member	28th International Symposium on Software Testing and Analysis (ISSTA 2019)
PC Member	28th International Symposium on Software Testing and Analysis, Tool Demonstration Track (ISSTA 2019 Tool Demo)
PC Member	34th IEEE/ACM International Conference on Automated Software Engineering (ASE 2019)
PC Member	34th IEEE/ACM International Conference on Automated Software Engineering, Student Research Competition (ASE 2019 SRC)
PC Member	12th IEEE International Conference on Software Testing, Verification and Validation (ICST 2019)
PC Member	35th IEEE International Conference on Software Maintenance and Evolution (ICSME 2019)
PC Member	IEEE International Conference on Software Quality, Reliability & Security (QRS 2019)
PC Member	14th International Workshop on Mutation Analysis (Mutation 2019)
PC Member	4th International Workshop on Metamorphic Testing (MET 2019)
PC Member	Annual Conference on Software Analysis, Testing and Evolution (SATE 2019)
PC Member	33rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2018)
PC Member	40nd IEEE/ACM International Conference on Software Engineering, ACM Student Research Competition (ICSE 2018 SRC)
PC Member	IEEE International Conference on Software Quality, Reliability & Security (QRS 2018)
PC Member	42nd International Computer, Software & Applications Conference (COMPSAC 2018)
PC Member	32nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2017)
PC Member	IEEE International Conference on Software Testing, Verification and Validation (ICST 2017)
PC Member	IEEE International Conference on Software Quality, Reliability & Security (QRS 2017)
PC Member	41st International Computer, Software & Applications Conference (COMPSAC 2017)
PC Member	33rd IEEE International Conference on Software Maintenance and Evolution, Tool Demonstration Track (ICSME 2017 Tool Demo)
PC Member	31st IEEE/ACM International Conference on Automated Software Engineering (ASE 2016)

PC Member	IEEE International Conference on Software Testing, Verification and Validation (ICST 2016)
PC Member	40th Annual International Computer, Software & Applications Conference (COMPSAC 2016)
PC Member	4th International Workshop on Software Mining (SoftwareMining-2015)
PC Member	39th Annual International Computer, Software & Applications Conference (COMPSAC 2015)
PC Member	IEEE International Conference on Software Quality, Reliability & Security (QRS 2015)
PC Member	30th IEEE International Conference on Software Maintenance (ICSM 2014)
PC Member	25th IEEE International Symposium on Software Reliability Engineering (ISSRE 2014)
PC Member	29th IEEE International Conference on Software Maintenance (ICSM 2013)
	Others (18 in total)
AEC Member	ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA 2014)
AEC Member	International Symposium on Software Testing and Analysis (ISSTA 2014)
Co-Reviewer	ACM International Symposium on Software Testing and Analysis (ISSTA 2015)
Co-Reviewer	8th International Conference on Software Testing, Verification and Validation (ICST 2015)
Co-Reviewer	22rd International Symposium on the Foundations of Software Engineering (FSE 2014)
Co-Reviewer	International Symposium on Software Testing and Analysis (ISSTA 2014)
Co-Reviewer	28th IEEE/ACM Conference on Automated Software Engineering (ASE 2013)
Co-Reviewer	21rd International Symposium on the Foundations of Software Engineering (FSE 2013)
Co-Reviewer	6th International Conference on Software Testing, Verification and Validation (ICST 2013)
Co-Reviewer	11th ACM Workshop on Program Analysis for Software Tools and Engineering (PASTE 2013)
Co-Reviewer	28th ACM Symposium On Applied Computing (SAC 2013)
Co-Reviewer	20th International Symposium on the Foundations of Software Engineering (FSE 2012)
Co-Reviewer	18th International Symposium on Formal Methods (FM 2012)
Co-Reviewer	27th IEEE/ACM International Conference on Automated Software Engineering (ASE 2012)
Co-Reviewer	26th IEEE/ACM International Conference on Automated Software Engineering (ASE 2011)
Co-Reviewer	International Symposium on Software Testing and Analysis (ISSTA 2011)
Co-Reviewer	Java PathFinder Workshop 2011
Volunteer	24th IEEE International Conference on Software Maintenance (ICSM 2008)

Professional Service (Journal)

Reviewer	IEEE Transaction on Software Engineering (TSE)
Reviewer	IEEE Transaction on Software Engineering and Methodology (TOSEM)
Reviewer	Journal of Systems and Software (JSS)
Reviewer	IEEE Transactions on Dependable and Secure Computing (TPSC)
Reviewer	Journal of Software: Practice and Experience (SPE)
Reviewer	IEEE Software
Reviewer	Information and Software Technology (IST)
Reviewer	Journal of Software Testing, Verification and Reliability (STVR)
Reviewer	Empirical Software Engineering (ESEM)
Reviewer	IEEE Transactions on Services Computing (TSC)
Reviewer	Journal of Computer Science and Technology (JCST)
Reviewer	Transactions on Reliability (ToR)
Reviewer	Journal of Software: Evolution and Process (JSEP)
Reviewer	Journal of Information Science and Engineering (JISE)