Yepang Liu（刘烨庞）

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Education

2010/08 – 2015/08	**Ph.D.** in Computer Science and Engineering (Received on 20/11/2015) The Hong Kong University of Science and Technology (HKUST) Advisor: Shing-Chi Cheung (IEEE Fellow, ACM Distinguished Scientist)
2006/09 – 2010/06	**B.Sc.** in Computer Science (Received on 30/06/2010) Nanjing University (with the Outstanding Graduate honor)
2009/08 – 2009/12	**Visiting Student,** Wilfrid Laurier University

Employment

2023/12 – Present	**Associate Professor,** Department of Computer Science and Engineering, Southern University of Science and Technology (SUSTech)
2021/11 – Present	**Director,** Trustworthy Software Research Center, Research Institute of Trustworthy Autonomous Systems, SUSTech
2018/02 – 2018/12	**Assistant Professor,** Department of Computer Science and Engineering, Southern University of Science and Technology (SUSTech)
2015/09 – 2018/02	**Postdoc,** Department of Computer Science and Engineering (CSE), HKUST Advisors: Shing-Chi Cheung, Charles Zhang

Recognitions and Awards

I received the following recognitions and awards after joining SUSTech:

1. The World's Top-10 Most Active Early-Stage Software Engineering Researcher (2013-2020), according to an independent bibliometric assessment published in Journal of Systems and Software[1]

2. The World's Top-100 Software Engineering Researcher, according to an independent bibliometric assessment by Prof. Mathias Payer from EPFL[2]

3. ACM SIGSOFT Distinguished Paper Award (ICSE 2021)

4. ACM SIGSOFT Distinguished Artifact Award (ICSE 2019)

5. 南方科技大学年度青年教授奖 (Junior Faculty of the Year, SUSTech), 2021

6. 南方科技大学优秀教学奖 (Excellent Teaching Award, SUSTech), 2020

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[1]https://www.sciencedirect.com/science/article/pii/S0164121221001266.

[2]https://nebelwelt.net/pubstats/top-authors-sys_se.html, last checked on November 3, 2023.

7. 南方科技大学校级教学成果一等奖 (First Prize for Teaching Achievement, SUSTech), 2021[3]

8. 南方科技大学优秀书院导师奖 (Excellent College Tutor of SUSTech), 2020

9. 南方科技大学致新书院优秀导师奖 (Excellent Tutor in Zhixin College of SUSTech), 2019

10. 南方科技大学致新书院优秀导师奖 (Excellent Tutor in Zhixin College of SUSTech), 2021

11. 南方科技大学致新书院优秀导师奖 (Excellent Tutor in Zhixin College of SUSTech), 2022

12. 南方科技大学招生先进个人 (Student Recruitment Award, SUSTech), 2022

13. 全国大学生软件测试大赛杰出指导老师奖 (Outstanding Mentor Award of the National College Student Software Testing Competition), 2018

14. 全国大学生软件测试大赛卓越指导老师奖 (Excellent Mentor Award of the National College Student Software Testing Competition), 2019

15. 全国大学生计算机系统能力大赛优秀指导老师 (Excellent Mentor Award for the National College Student Computer System Ability Competition), 2023

16. 第二届火焰杯软件测试高校就业选拔赛优秀指导老师 (Outstanding Mentor Award of the 2nd "Goblet of Fire" National College Software Testing Competition for Employment), 2022

17. 第三届火焰杯软件测试开发选拔赛优秀指导老师 (Outstanding Mentor Award of the 3rd "Goblet of Fire" National College Software Test Development Competition), 2022

18. CCF 中国软件大会原型竞赛自由型二等奖 (Second Prize in the Free-Style Category of the CCF China-Soft Prototype Competition), 2020

19. CCF 中国软件大会原型竞赛自由型优秀奖 (Honorable Mention Award in the Free-Style Category of the CCF ChinaSoft Prototype Competition), 2020

20. 深圳市海外高层次人才 C 类 (Overseas High-Caliber Personnel in Shenzhen, Level C), 2018

21. 深圳市南山区领航人才 C 类 (Leading Talents in Nanshan District of Shenzhen, Level C), 2019

I received the following recognitions and awards before joining SUSTech:

1. ACM SIGSOFT Distinguished Paper Award (ASE 2016)

2. ACM SIGSOFT Distinguished Paper Award (ICSE 2014)

3. Platinum-Level Research Artifact (FSE 2016, Runner-up in the artifact evaluation)

4. ACM SIGSOFT Service Award (FSE 2014)

5. ACM SIGSOFT Service Recognition Award (FSE 2014)

6. 南京大学优秀毕业生 (Outstanding Graduate of Nanjing University), 2010

Research Interests

My main research area is software engineering, with emphases on software testing, program analysis, software analytics, and software security. I often conduct empirical studies to identify and characterize

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[3]This is a team award and I ranked 4th in all the eight awardees.

various software defects and vulnerabilities across a range of platforms and systems, including mobile platforms, blockchains, extended reality systems, and unmanned aerial vehicles, and so on. I also design techniques to help developers detect, diagnose, and fix software defects. My vision is to provide easy-to-use, scalable, and effective tools to help developers build and maintain trustworthy and high-quality software products.

- My papers appear in top international software engineering conferences (ICSE × 12, ESEC/FSE × 9, ASE × 10, ISSTA × 5) and journals (TOSEM × 5, TSE × 6, EMSE × 2).

- My work has been recognized by several awards and honors including three ACM SIGSOFT Distinguished Paper awards and one ACM SIGSOFT Distinguished Artifact award.

- I was ranked as one of the World's Top-10 Most Active Early-Stage Software Engineering Researchers (2013-2020) in an independent bibliometric assessment of software engineering scholars published in Journal of Systems and Software.

- I was ranked in the top-100 software engineering authors in the world according to an assessment[4] by Prof. Mathias Payer from EPFL (last update: November 3, 2023).

- I am a major contributor to the CSRankings[5] of SUSTech. As of November 3, 2023, for the software engineering area, SUSTech ranks at 48th in the world and 9th in China.

- Tools developed and maintained by me and my collaborators have helped detect 2,054 previously-unknown software defects in various open-source projects.

- We have collected a total of 2,946 real software bugs of various types from open-source projects and shared our datasets with the community.

Publications

Summary: As of December 17, 2023, I have published a total of 86 papers, of which 66 are published after joining SUSTech. Among these papers, 10 are first-authored, 30 are corresponding authored, 58 are in top computer science venues, including 41 CORE-A*/CCF-A conference papers, and 17 JCR-Q1/CCF-A journal papers.

Conference Papers (Full papers, * means corresponding authors, & means my students, # means co-supervised students, visitors, or research staffs in my group):

[c1] **[ICSE 2024, CORE-A*/CCF-A]** Dinghua Wang[&], Shuqing Li[#], Guanping Xiao, Yepang Liu[*], Yulei Sui, Pinjia He, Michael R. Lyu. *An Exploratory Investigation of Log Anomalies in Unmanned Aerial Vehicles.* In the 46th International Conference on Software Engineering, April 2024, Lisbon, Portugal, to appear.

[c2] **[S&P 2024, CORE-A*/CCF-A]** Wuqi Zhang[#], Zhuo Zhang, Qingkai Shi, Lu Liu[&], Lili Wei, Yepang Liu, Xiangyu Zhang, Shing-Chi Cheung. *Nyx: Detecting Exploitable Front-Running Vulnerabilities in Smart*

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[4]https://nebelwelt.net/pubstats/top-authors-sys_se.html

[5]The ranking is designed to identify institutions and faculty actively engaged in research across a number of areas of computer science, based on the number of publications by faculty that have appeared at the most selective conferences in each area of computer science. It can be accessed via https://csrankings.org/.

Contracts. In the 45th IEEE Symposium on Security and Privacy, May 2024, San Francisco, California, United States, to appear.

[c3] **[APSEC 2023, CORE-B/CCF-C]** Siqi Zhou[&], Xian Zhan[#], Linlin Li[&], and Yepang Liu[*]. *Effective Anomaly Detection for Microservice Systems with Real-Time Feature Selection.* In the 30th Asia-Pacific Software Engineering Conference, December 2023, Seoul, South Korea, to appear.

[c4] **[ESEC/FSE 2023, CORE-A*/CCF-A]** Shangwen Wang[#], Gengming Yang, Bo Lin, Zhensu Sun, Ming Wen[*], Yepang Liu[*], Li Li, Tegawendé F. Bissyandé, and Xiaoguang Mao. *Natural Language to Code: How Far are We?* In the 31st ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, December 2023, San Francisco, California, United States, to appear.

[c5] **[ESEC/FSE 2023, CORE-A*/CCF-A]** Bo Lin, Shangwen Wang[#], Zhongxin Liu, Yepang Liu, Xin Xia, and Xiaoguang Mao. *CCT5: A Code-Change-Oriented Pre-Trained Model.* In the 31st ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, December 2023, San Francisco, California, United States, to appear.

[c6] **[ESEC/FSE 2023, CORE-A*/CCF-A]** Jun Wang, Guanping Xiao[*], Shuai Zhang, Huashan Lei, Yepang Liu, and Yulei Sui. *Compatibility Issues in Deep Learning Systems: Problems and Opportunities.* In the 31st ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, December 2023, San Francisco, California, United States, to appear.

[c7] **[ISSRE 2023, CORE-A/CCF-B]** Huashan Lei, Shuai Zhang, Jun Wang, Guanping Xiao[*], Yepang Liu, and Yulei Sui. *Why Do Deep Learning Projects Differ in Compatible Framework Versions? An Exploratory Study.* In the 34th IEEE International Symoposium on Software Reliability Engineering, October 2023, Florence, Italy, to appear.

[c8] **[OOPSLA 2023, CORE-A/CCF-A]** Shangwen Wang[#], Bo Lin, Zhensu Sun, Ming Wen[*], Yepang Liu[*], Yan Lei, and Xiaoguang Mao. *Two Birds with One Stone: Boosting Code Generation and Code Search via Generative Adversarial Network.* In the 2023 ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications, October 2023, Cascais, Portugal, to appear.

[c9] **[DSA 2023]** Yujia Fan[&], Siyi Wang[&], Sinan Wang[&], Yepang Liu[*], Guoyao Wen, and Qi Rong. *A Comprehensive Evaluation of Q-Learning Based Automatic Web GUI Testing.* In the 10th International Conference on Dependable Systems and Their Applications, August 2023, Tokyo, Japan, pp. 12-23, acceptance rate: 28.8% (36/125). In collaboration with Huawei. Tool deployed in Huawei.

[c10] **[Internetware 2023, CCF-C]** Lei Liu[&], Sinan Wang[&], Yepang Liu[*], Jinliang Deng, and Sicen Liu[&]. *DRIFT: Fine-Grained Prediction of the Co-Evolution of Production and Test Code via Machine Learning.* In the 14th Asia-Pacific Symposium on Internetware, August 2023, Hangzhou, China, pp. 227-237, acceptance rate: 40% (30/75).

[c11] **[ISSTA 2023, CORE-A/CCF-A]** Linlin Li[&], Ruifeng Wang, Xian Zhan[#], Ying Wang, Cuiyun Gao, Sinan Wang[&], and Yepang Liu[*]. *What You See Is What You Get? It Is Not the Case! Detecting Misleading Icons for Mobile Applications.* In the 32nd ACM SIGSOFT International Symposium on Software Testing and Analysis, July 2023, Seattle, WA, USA, pp. 538-550, acceptance rate: 28.8% (117/406).

[c12] **[ISSTA 2023, CORE-A/CCF-A]** Jiajun Hu[#], Lili Wei, Yepang Liu, and Shing-Chi Cheung[*]. *ωTest: WebView-Oriented Testing for Android Applications*. In the 32nd ACM SIGSOFT International Symposium on Software Testing and Analysis, July 2023, Seattle, WA, USA, pp. 992-1004, acceptance rate: 28.8% (117/406).

[c13] **[ISSTA 2023, CORE-A/CCF-A]** Huaxun Huang[#], Chi Xu[&], Ming Wen, Yepang Liu, and Shing-Chi Cheung[*]. *ConfFix: Repairing Configuration Compatibility Issues in Android Apps*. In the 32nd ACM SIGSOFT International Symposium on Software Testing and Analysis, July 2023, Seattle, WA, USA, pp. 514-525, acceptance rate: 28.8% (117/406).

[c14] **[ICSE 2023, CORE-A[*]/CCF-A]** Hao Guan[&], Ying Xiao[&], Jiaying Li, Yepang Liu[*], and Guangdong Bai[*]. *A Comprehensive Study of Real-World Bugs in Machine Learning Model Optimization*. In the 45th International Conference on Software Engineering, May 2023, Melbourne, Australia, pp. 147-158, acceptance rate: 26.7% (208/780). Hao Guan is currently a student in the Joint PhD Program between SUSTech and University of Queensland.

[c15] **[ICSE 2023, CORE-A[*]/CCF-A]** Jiwei Yan, Miaomiao Wang, Yepang Liu, Jun Yan[*], and Long Zhang. *Locating Framework-specific Crashing Faults with Compact and Explainable Candidate Set*. In the 45th International Conference on Software Engineering, May 2023, Melbourne, Australia, pp. 172-183, acceptance rate: 26.7% (208/780).

[c16] **[ICSE 2023, CORE-A[*]/CCF-A]** Kaifa Zhao, Xian Zhan[#], Le Yu, Shiyao Zhou, Hao Zhou, Xiapu Luo[*], Haoyu Wang, and Yepang Liu. *Demystifying Privacy Policy of Third-Party Libraries in Mobile Apps*. In the 45th International Conference on Software Engineering, May 2023, Melbourne, Australia, pp. 1583-1595, acceptance rate: 26.7% (208/780).

[c17] **[WWW 2023, CORE-A[*]/CCF-A]** Yanjie Zhao, Tianming Liu[#], Haoyu Wang, Yepang Liu, John Grundy, and Li Li[*]. *Are Mobile Advertisements in Compliance with App's Age Group?*. In the ACM Web Conference, Austin, TX, USA, April 2023, pp. 3132-3141, acceptance rate: 19.2% (365/1900).

[c18] **[ICST 2023, CORE-A/CCF-C]** Jiayuan Liang[&], Sinan Wang[&], Xiangbo Deng[&], and Yepang Liu[*]. *RIDA: Cross-App Record and Replay for Android*. In the 16th IEEE International Conference on Software Testing, Verification and Validation, Dublin, Ireland, April 2023, pp. 246-257, acceptance rate: 28.9% (26/90). Jiayuan Liang was a 4th year undergraduate student when the paper was published.

[c19] **[ASE 2022, CORE-A[*]/CCF-A]** Jiwei Yan, Shixin Zhang, Yepang Liu, Xi Deng, Jun Yan[*], and Jian Zhang[*]. *A Comprehensive Evaluation of Android ICC Resolution Techniques*. In the 37th IEEE/ACM International Conference on Automated Software Engineering, Oakland Center, Michigan, USA, October 2022, pp. 1-13, acceptance rate: 18.8% (116/537).

[c20] **[ISSRE 2022, CORE-A/CCF-B]** Yue Liu[#], Chakkrit Tantithamthavorn[*], Li Li[*], and Yepang Liu. *Explainable AI for Android Malware Detection: Towards Understanding Why the Models Perform So Well?*. In the 33rd International Symposium on Software Reliability Engineering, Charlotte, North Carolina, USA, October 2022, pp. 169-180, acceptance rate: 29% (47/162).

[c21] **[MICRO 2022, CORE-A/CCF-A]** Xueliang Li[#], Zhuobin Shi, Junyang Chen[*], and Yepang Liu. *Realizing Emotional Interactions to Learn User Experience and Guide Energy Optimization for Mobile Architectures*. In the 55th IEEE/ACM International Symposium on Microarchitecture, Chicago, IL, USA,

October 2022, pp. 868-884, acceptance rate: 22% (83/366).

[c22] **[Internetware 2022, CCF-C]** Chenyu Zhou[&], Xian Zhan[#], Linlin Li[&], and Yepang Liu[*]. *Automatic Maturity Rating for Android Apps*. In the 13th Asia-Pacific Symposium on Internetware, June 2022, pp. 16-27, acceptance rate: 43.5% (30/69).

[c23] **[ICSE 2022, CORE-A[*]/CCF-A]** Sinan Wang[&], Yibo Wang[#], Xian Zhan[#], Ying Wang, Yepang Liu[*], Xiapu Luo, and Shing-Chi Cheung. *Aper: Evolution-Aware Runtime Permission Misuse Detection for Android Apps*. In the 44th International Conference on Software Engineering, May 2022, pp. 125-137, acceptance rate: 28.5% (197/691).

[c24] **[ASE 2021, CORE-A[*]/CCF-A]** Lu Liu[&], Lili Wei, Wuqi Zhang, Ming Wen, Yepang Liu[*], and Shing-Chi Cheung[*]. *Characterizing Transaction-Reverting Statements in Ethereum Smart Contracts*. In the 36th IEEE/ACM International Conference on Automated Software Engineering, Melbourne, Australia, November 2021, pp. 630-641, acceptance rate: 18.6% (82/440). Lu Liu is currently a student in the Joint PhD Program between SUSTech and HKUST.

[c25] **[ASE 2021, CORE-A[*]/CCF-A]** Huaxun Huang[#], Ming Wen, Lili Wei, Yepang Liu, and Shing-Chi Cheung[*]. *Characterizing and Detecting Configuration Compatibility Issues in Android Apps*. In the 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Melbourne, Australia, November 2021, pp. 517-528, acceptance rate: 18.6% (82/440).

[c26] **[ASE 2021, CORE-A[*]/CCF-A]** Mingwei Zheng, Jun Yang, Ming Wen[*], Hengcheng Zhu[&], Yepang Liu, and Hai Jin. *Why Do Developers Remove Lambda Expressions in Java?*. In the 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Melbourne, Australia, November 2021, pp. 67-78, acceptance rate: 18.6% (82/440).

[c27] **[ESEC/FSE 2021, CORE-A[*]/CCF-A]** Dinghua Wang[&], Shuqing Li[&], Guanping Xiao, Yepang Liu[*], and Yulei Sui. *An Exploratory Study of Autopilot Software Bugs in Unmanned Aerial Vehicles*. In the 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Athens, Greece, August 2021, pp. 20-31, acceptance rate: 24.5% (97/396). Dinghua Wang is currently a student in the Joint PhD Program between SUSTech and University of Technology Sydney. This paper received the Australian Artificial Intelligence Institute Student Best Paper Award.

[c28] **[ESEC/FSE 2021, CORE-A[*]/CCF-A]** Wuqi Zhang[#], Lili Wei[*], Shuqing Li[&], Yepang Liu, and Shing-Chi Cheung. *ÐArcher: Detecting On-Chain-Off-Chain Synchronization Bugs in Decentralized Applications*. In the 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Athens, Greece, August 2021, pp. 553-565, acceptance rate: 24.5% (97/396).

[c29] **[ESEC/FSE 2021, CORE-A[*]/CCF-A]** Yida Tao, Zhihui Chen, Yepang Liu, Zhiwu Xu[*], and Shengchao Qin. *Demystifying "Bad" Error Messages in Data Science Libraries*. In the 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Athens, Greece, August 2021, pp. 818-829, acceptance rate: 24.5% (97/396).

[c30] **[ICSE 2021, CORE-A[*]/CCF-A]** Yan Zheng, Yi Liu[&], Xiaofei Xie[*], Yepang Liu, Lei Ma, Jianye Hao,

and Yang Liu. *Automatic Web Testing using Curiosity-Driven Reinforcement Learning*. In the 43rd ACM/IEEE International Conference on Software Engineering, Madrid, Spain, May 2021, pp. 423-435, acceptance rate: 22.4% (138/615). Yi Liu was the co-first author. He was a 4th year undergraduate student when the paper was published.

[c31] **[ICSE 2021, CORE-A*/CCF-A]** Ying Wang[#], Liang Qiao, Chang Xu[*], Yepang Liu, Shing-Chi Cheung, Na Meng, Hai Yu, and Zhiliang Zhu. *Hero: On the Chaos When PATH Meets Modules*. In the 43rd ACM/IEEE International Conference on Software Engineering, Madrid, Spain, May 2021, pp. 99-111, acceptance rate: 22.4% (138/615). This work received the ACM SIGSOFT Distinguished Paper Award.

[c32] **[SANER 2021, CORE-A/CCF-B]** Sinan Wang[&], Ming Wen, Yepang Liu[*], Ying Wang, and Rongxin Wu. *Understanding and Facilitating the Co-Evolution of Production and Test Code.* In the 28th IEEE International Conference on Software Analysis, Evolution and Reengineering, Honolulu, Hawaii, March 2021, pp. 272-283, acceptance rate: 25% (42/165).

[c33] **[ISSRE 2020, CORE-A/CCF-B]** Shuqing Li[&], Yechang Wu[&], Yi Liu[&], Dinghua Wang[&], Ming Wen, Yida Tao, Yulei Sui, and Yepang Liu[*]. *An Exploratory Study of Bugs in Extended Reality Applications on the Web*. In the 31st International Symposium on Software Reliability Engineering, Coimbra, Portugal, October 2020, pp. 172-183, acceptance rate: 25.7% (38/148). Shuqing Li was a 3rd year undergraduate student when the paper was published.

[c34] **[ASE 2020, CORE-A*/CCF-A]** Hengcheng Zhu[&], Lili Wei, Ming Wen, Yepang Liu[*], Shing-Chi Cheung[*], Qin Sheng, and Cui Zhou. *MockSniffer: Characterizing and Recommending Mocking Decisions for Unit Tests*. In the 35th IEEE/ACM International Conference on Automated Software Engineering, Melbourne, Australia, September 2020, pp. 436-447, acceptance rate: 22.4% (93/414). Hengcheng Zhu was a 4th year undergraduate student when the paper was published.

[c35] **[ASE 2020, CORE-A*/CCF-A]** Yida Tao, Jiefang Jiang, Yepang Liu, Zhiwu Xu, and Shengchao Qin[*]. *Understanding Performance Concerns in the API Documentation of Data Science Libraries*. In the 35th IEEE/ACM International Conference on Automated Software Engineering, Melbourne, Australia, September 2020, pp. 895-906, acceptance rate: 22.4% (93/414).

[c36] **[ISSTA 2020, CORE-A/CCF-A]** Xueliang Li, Yuming Yang, Yepang Liu, John P. Gallagher, and Kaishun Wu[*]. *Detecting and Diagnosing Energy Issues for Mobile Applications*. In the 29th ACM SIG-SOFT International Symposium on Software Testing and Analysis, Los Angeles, California, USA, July 2020, pp. 115-127, acceptance rate: 26.5% (43/162).

[c37] **[ICSE 2020, CORE-A*/CCF-A]** Ying Wang[#], Ming Wen[*], Yepang Liu[*], Yibo Wang, Zhenming Li, Chao Wang, Hai Yu, Shing-Chi Cheung, Chang Xu, and Zhiliang Zhu. *Watchman: Monitoring Dependency Conflicts for Python Library Ecosystem*. In the 42nd International Conference on Software Engineering, Seoul, South Korea, May 2020, pp. 125-325, acceptance rate: 20.9% (129/617).

[c38] **[SANER 2020, CORE-A/CCF-B]** Zhaoxu Zhang[&], Hengcheng Zhu[&], Ming Wen, Yida Tao, Yepang Liu[*], and Yingfei Xiong. *How Do Python Framework APIs Evolve? An Exploratory Study*. In the 27th IEEE International Conference on Software Analysis, Evolution and Reengineering, London, Ontario, Canada, Feb 2020, pp. 81-92, acceptance rate: 27% (46/170). Zhaoxu Zhang and Hengcheng Zhu

were both 4th year undergraduate students when the paper was published.

[c39] **[ESEC/FSE 2019, CORE-A*/CCF-A]** Ming Wen[#], Rongxin Wu[*], <u>Yepang Liu</u>, Yongqiang Tian, Xuan Xie[#], Shing-Chi Cheung, and Zhendong Su. *Exploring and Exploiting the Correlations between Bug-Inducing and Bug-Fixing Commits*. In the 27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Tallinn, Estonia, August 2019, pp. 326-337, acceptance rate: 24.4% (74/303).

[c40] **[ICSE 2019, CORE-A*/CCF-A]** Lili Wei[#], <u>Yepang Liu</u>[*], and Shing-Chi Cheung. *PIVOT: Learning API-Device Correlations to Facilitate Android Compatibility Issue Detection*. In the 41st ACM/IEEE International Conference on Software Engineering, Montreal, Canada, May 2019, pp. 878-888, acceptance rate: 21% (109/529). This work received the ACM SIGSOFT Distinguished Artifact Award.

[c41] **[ICSE 2019, CORE-A*/CCF-A]** Ming Wen[#], <u>Yepang Liu</u>[*], Rongxin Wu, Xuan Xie[#], Shing-Chi Cheung, and Zhendong Su. *Exposing API Misuses via Mutation Analysis*. In the 41st ACM/IEEE International Conference on Software Engineering, Montreal, Canada, May 2019, pp. 866-877, acceptance rate: 21% (109/529).

[c42] **[SANER 2019, CORE-A/CCF-B]** Wenjie Li, Yanyan Jiang[*], Chang Xu[*], <u>Yepang Liu</u>, Xiaoxing Ma, and Jian Lu. *Characterizing and Detecting Inefficient Image Displaying Issues in Android Apps*. In the 26th IEEE International Conference on Software Analysis, Evolution and Reengineering, Hangzhou, China, Feb 2019, pp. 355-365, acceptance rate: 29.8% (45/151).

[c43] **[ASE 2018, CORE-A*/CCF-A]** Huaxun Huang[#], Lili Wei[#], <u>Yepang Liu</u>[*], and Shing-Chi Cheung. *Understanding and Detecting Callback Compatibility Issues for Android Applications*. In the 33rd International Conference on Automated Software Engineering, Montpellier, France, September 2018, pp. 532-542, acceptance rate: 20.3% (64/315).

[c44] **[ASE 2018, CORE-A*/CCF-A]** Jiajun Hu[#], Lili Wei[#], <u>Yepang Liu</u>[*], Shing-Chi Cheung, and Huaxun Huang[#]. *A Tale of Two Cities: How WebView Induces Bugs to Android Applications*. In the 33rd International Conference on Automated Software Engineering, Montpellier, France, September 2018, pp. 702-713, acceptance rate: 20.3% (64/315).

[c45] **[ESEC/FSE 2017, CORE-A*/CCF-A]** Lili Wei[#], <u>Yepang Liu</u>, and Shing-Chi Cheung. *OASIS: Prioritizing Static Analysis Warnings for Android Apps Based on App User Reviews*. In the 11th Joint Meeting of The European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering, Paderborn, Germany, September 2017, pp. 672-682, acceptance rate: 24.4% (72/295).

[c46] **[FSE 2016, CORE-A*/CCF-A]** <u>Yepang Liu</u>, Chang Xu[*], Shing-Chi Cheung[*], and Valerio Terragni. *Understanding and Detecting Wake Lock Misuses for Android Applications*. In the 24th ACM SIGSOFT International Symposium on Foundations of Software Engineering, Seattle, WA, USA, November 2016, pp. 396-409, acceptance rate: 27.1% (74/273). The tool received the Platinum-Level Artifact honor. It was the first runner-up in the artifact track.

[c47] **[ASE 2016, CORE-A*/CCF-A]** Lili Wei[#], <u>Yepang Liu</u>, and Shing-Chi Cheung. *Taming Android Fragmentation: Characterizing and Detecting Compatibility Issues for Android Apps*. In the 31st IEEE/ACM

International Conference on Automated Software Engineering, Singapore, September 2016, pp. 226-237, acceptance rate: 18.7% (53/284). This work received the ACM SIGSOFT Distinguished Paper Award.

[c48] **[Internetware 2016, CCF-C]** Jue Wang, Yepang Liu, Chang Xu*, Xiaoxing Ma, and Jian Lu. *E-GreenDroid: Effective Energy Inefficiency Analysis for Android Applications*. In the 8th Asia-Pacific Symposium on Internetware, Beijing, China, September 2016, pp. 71-80.

[c49] **[ISSTA 2016, CORE-A/CCF-A]** Valerio Terragni, Yepang Liu, and Shing-Chi Cheung. *CSNIPPEX: Automated Synthesis of Compilable Code Snippets from Q&A Sites*. In the 25th International Symposium on Software Testing and Analysis, Saarbrücken, Germany, July 2016, pp. 118-129, acceptance rate: 25.2% (37/147).

[c50] **[ICSE 2016, CORE-A*/CCF-A]** Shing-Chi Cheung*, Wanjun Chen#, Yepang Liu, and Chang Xu*. *CUSTODES: Automatic Spreadsheet Cell Clustering and Smell Detection Using Strong and Weak Features*. In the 38th International Conference on Software Engineering, Austin, TX, USA, May 2016, pp. 464-475, acceptance rate: 19.1% (101/530).

[c51] **[APSEC 2014, CORE-B/CCF-C]** Xiujiang Li, Yanyan Jiang, Yepang Liu, Chang Xu*, Xiaoxing Ma*, and Jian Lu. *User Guided Automation for Testing Mobile Apps*. In the 21st Asia-Pacific Software Engineering Conference, Jeju, Korea, December 2014, pp. 27-34, acceptance rate: 29.6% (67/226).

[c52] **[ASE 2014, CORE-A*/CCF-A]** Wenhua Yang, Chang Xu*, Yepang Liu, Chun Cao, Xiaoxing Ma, and Jian Lu. *Verifying Self-adaptive Applications with Uncertainty*. In 29th IEEE/ACM International Conference on Automated Software Engineering, Vasteras, Sweden, September 2014, pp. 199-209, acceptance rate: 19.9% (55/276).

[c53] **[ICSE 2014, CORE-A*/CCF-A]** Yepang Liu, Chang Xu*, and Shing-Chi Cheung. *Characterizing and Detecting Performance Bugs for Smartphone Applications*. In the 36th International Conference on Software Engineering, Hyderabad, India, June 2014, pp. 1013-1024, acceptance rate: 20% (99/496). This work received the ACM SIGSOFT Distinguished Paper Award.

[c54] **[PerCom 2013, CORE-A*/CCF-B]** Yepang Liu, Chang Xu*, and Shing-Chi Cheung. *Where Has My Battery Gone? Finding Sensor Related Energy Black Holes in Smartphone Applications*. In the 11th IEEE International Conference on Pervasive Computing and Communications, San Diego, CA, USA, March 2013, pp. 2-10, acceptance rate: 15.5% (27/174).

Conference Papers (Short papers, * means corresponding authors, & means my students, # means co-supervised students, visitors, or research staffs in my group):

[c55] **[QRS 2023]** Jinrun Liu&, Xinyu Tang&, Linlin Li&, Panpan Chen&, and Yepang Liu*. *ChatGPT vs. Stack Overflow: An Exploratory Comparison of Programming Assistance Tools*. In the co-located workshop of the 23rd IEEE International Conference on Software Quality, Reliability, and Security, October 2023, to appear.

[c56] **[QRS 2023]** Jiacheng Li&, Kerui Huang&, Sinan Wang&, Yepang Liu*. *Towards the Adoption and Adaptation of the AndroidX Library: An Empirical Study*. In the 23rd IEEE International Conference on Software Quality, Reliability, and Security, October 2023, to appear.

[c57] **[ICSE 2022 Demo]** Jiwei Yan, Shixin Zhang, Yepang Liu, Jun Yan[*], and Jian Zhang[*]. *ICCBot: Fragment-Aware and Context-Sensitive ICC Resolution for Android Applications*. In the Demonstrations Track of the 44th International Conference on Software Engineering, May 2022, pp. 105-109.

[c58] **[ASE 2020 Industry Showcase]** Yi Liu[&], Jinhui Xie, Jianbo Yang, Shiyu Guo, Yuetang Deng, Shuqing Li[&], Yechang Wu[&], and Yepang Liu[*]. *Industry Practice of JavaScript Dynamic Analysis on WeChat Mini-Programs*. In the 35th IEEE/ACM International Conference on Automated Software Engineering (Industry Showcase Track), Melbourne, Australia, September 2020, pp. 1189-1193. Yi Liu was a 4th year undergraduate student when the paper was published. The project was supported by the Tencent Rhino-Bird Elite Talent Development Program.

[c59] **[ICSE 2020 Demo]** Yongqiang Tian[#], Zhihua Zeng, Ming Wen, Yepang Liu, Tzu-yang Kuo, and Shing-Chi Cheung. *EvalDNN: A Toolbox for Evaluating Deep Neural Network Models*. In the 42nd International Conference on Software Engineering (Demonstrations Track), Seoul, South Korea, May 2020, pp. 45-48.

[c60] **[ICSE 2020 NIER]** Ming Wen[#], Yepang Liu, and Shing-Chi Cheung. *Boosting Automated Program Repair with Bug-Inducing Commits*. In the 42nd International Conference on Software Engineering (New Ideas and Emerging Results Track), Seoul, South Korea, May 2020, pp. 77-80.

[c61] **[ASE 2019 NIER]** Yida Tao, Shan Tang, Yepang Liu, Zhiwu Xu[*], and Shengchao Qin. *How Do API Selections Affect the Runtime Performance of Data Analytics Tasks?* In the 34th IEEE/ACM International Conference on Automated Software Engineering (New Ideas Paper), San Diego, CA, USA, November 2019, pp. 665-668.

[c62] **[Middleware 2013 Doctoral Symposium]** Yepang Liu and Chang Xu[*]. *VeriDroid: Automating Android Application Verification*. In the 14th ACM/IFIP/USENIX International Middleware Conference (Doctoral Symposium), Beijing, China, December 2013, Article 5, pp. 1-6.

Journal Papers (* means corresponding authors, & means my students, # means co-supervised students, visitors, or research staffs in my group):

[j1] **[TOSEM 2023, JCR-Q1/CCF-A]** Hengcheng Zhu[#], Lili Wei, Valerio Terragni, Yepang Liu, Shing-Chi Cheung[*], Jiarong Wu, Qin Sheng, Bing Zhang, and Lihong Song. *StubCoder: Automated Generation and Repair of Stub Code for Mock Objects*. In ACM Transactions on Software Engineering and Methodology, accepted for publication. In collaboration with WeBank.

[j2] **[TOSEM 2023, JCR-Q1/CCF-A]** Shangwen Wang[#], Ming Wen[*], Bo Lin[*], Yepang Liu, Tegawende Bissyande, Xiaoguang Mao. *Pre-Implementation Method Name Prediction for Object-Oriented Programming*. In ACM Transactions on Software Engineering and Methodology, Vol. 32, Iss. 6, Article 157, pp. 1-35.

[j3] **[TSE 2023, JCR-Q1/CCF-A]** Wuqi Zhang[#], Lili Wei, Shing-Chi Cheung[*], Yepang Liu, Shuqing Li[#], Lu Liu[&], and Michael R. Lyu. *Combatting Front-Running in Smart Contracts: Attack Mining, Benchmark Construction and Vulnerability Detector Evaluation*. In IEEE Transactions on Software Engineering, Vol. 49, Iss. 6, pp. 3630-3646, June 2023.

[j4] **[TOSEM 2023, JCR-Q1/CCF-A]** Xueliang Li[#], Junyang Chen[*], Yepang Liu, John P. Gallagher, Kaishun

Wu. *Combatting Energy Issues for Mobile Applications.* In ACM Transactions on Software Engineering and Methodology, Volume 32, Issue 1, Article 13, pp. 1-44, February 2023.

[j5] **[TSE 2023, JCR-Q1/CCF-A]** Ying Wang[#], Yibo Wang[#], Sinan Wang[&], Yepang Liu[*], Chang Xu, Shing-Chi Cheung, Hai Yu, and Zhiliang Zhu. *Runtime Permission Issues in Android Apps: Taxonomy, Practices, and Ways Forward.* In IEEE Transactions on Software Engineering, vol. 49, no. 1, pp. 185-210, January 2023.

[j6] **[SCIS 2023, JCR-Q1/CCF-A]** Yingfei Xiong[*], Yongqiang Tian[*], Yepang Liu[*], and Shing-Chi Cheung[*]. *Towards Actionable Testing of Deep Learning Models.* In Science China Information Sciences, Vol. 66, No. 17601, Perspective Paper, June 2023.

[j7] **[FCS 2023, JCR-Q1/CCF-B]** Yuxia Sun, Jiefeng Fang, Yanjia Chen, Yepang Liu[*], Zhao Chen, Song Guo, Xinkai Chen, and Ziyuan Tan. *Energy Inefficiency Diagnosis for Android Applications: A Literature Review.* In Frontiers of Computer Science, Vol. 17, No. 171201, 21 pages, 2023.

[j8] **[CSUR 2022, JCR-Q1]** Yue Liu[#], Chakkrit Tantithamthavorn, Li Li, and Yepang Liu. *Deep Learning for Android Malware Defenses: a Systematic Literature Review.* In ACM Computing Surveys, 2022, Volume 55, Issue 8, Article 153, pp. 1–36, December 2022.

[j9] **[TSE 2022, JCR-Q1/CCF-A]** Xian Zhan[#], Tianming Liu[#], Yepang Liu, Yang Liu, Li Li, Haoyu Wang, and Xiapu Luo[*]. *A Systematic Assessment on Android Third-party Library Detection Tools.* In IEEE Transactions on Software Engineering, vol. 48, no. 11, pp. 4249-4273, November 2022.

[j10] **[TSE 2022, JCR-Q1/CCF-A]** Ying Wang[#], Rongxin Wu, Chao Wang, Ming Wen, Yepang Liu, Shing-Chi Cheung, Hai Yu[*], Chang Xu, and Zhiliang Zhu. *Will Dependency Conflicts Affect My Program's Semantics?.* In IEEE Transactions on Software Engineering, Vol. 48, Iss. 7, pp. 2295-2316, July 2022.

[j11] **[EMSE 2021, JCR-Q2/CCF-B]** Yongqiang Tian[#], Shiqing Ma, Ming Wen, Yepang Liu, Shing-Chi Cheung[*], and Xiangyu Zhang. *To What Extent Do DNN-based Image Classification Models Make Unreliable Inferences?.* In Empirical Software Engineering, Volume 26, Issue 5, Article No. 84, 40 pages, September 2021. The technique was applied in PopSquare, a company in Hong Kong. Our research was reported by the Wenhui Daily newspaper.

[j12] **[TOSEM 2021, JCR-Q1/CCF-A]** Yida Tao, Shan Tang, Yepang Liu, Zhiwu Xu, and Shengchao Qin[*]. *Speeding up Data Manipulation Tasks with Alternative Implementations: An Exploratory Study.* In ACM Transactions on Software Engineering and Methodology, Vol. 30, Iss. 4, Article No. 49, pp. 1-28, October 2021.

[j13] **[IST 2021, JCR-Q2/CCF-B]** Sen Fang, Youshuai Tian, Tao Zhang[*], and Yepang Liu. *Self-Attention Networks for Code Search.* In Information and Software Technology, Volume 134, article 106542, 12 pages, 2021.

[j14] **[TSE 2020, JCR-Q1/CCF-A]** Lili Wei[#], Yepang Liu[*], Shing-Chi Cheung[*], Huaxun Huang[#], Xuan Lu, and Xuanzhe Liu. *Understanding and Detecting Fragmentation-Induced Compatibility Issues for Android Apps.* In IEEE Transactions on Software Engineering, vol. 46, no. 11, pp. 1176-1199, Nov. 2020.

[j15] **[EMSE 2019, JCR-Q2/CCF-B]** Yepang Liu[*], Jue Wang, Lili Wei[#], Chang Xu, Shing-Chi Cheung, Tianyong Wu, Jun Yan, and Jian Zhang. DROIDLEAKS: *A Comprehensive Database of Resource Leaks*

in Android Apps. In Empirical Software Engineering, vol. 24, no. 6, pp. 3435-3483, December 2019.

[j16] **[SCIS 2017, JCR-Q1/CCF-A]** Qiwei Li, Chang Xu[*], <u>Yepang Liu</u>, Chun Cao, Xiaoxing Ma, and Jian Lu. *CyanDroid: Stable and Effective Energy Inefficiency Diagnosis for Android Apps.* In Science China Information Sciences, January 2017, Vol. 60, Article 012104.

[j17] **[SCIS 2015, JCR-Q1/CCF-A]** Wenhua Yang, <u>Yepang Liu</u>, Chang Xu[*], and Shing-Chi Cheung[*]. *A Survey on Dependability Improvement Techniques for Pervasive Computing Systems.* In Science China Information Sciences, Vol. 58, No. 5, Article 052102, pp. 1-14, May 2015.

[j18] **[SW 2015, JCR-Q2]** <u>Yepang Liu</u>, Chang Xu[*], and Shing-Chi Cheung[*]. *Diagnosing Energy Efficiency and Performance for Mobile Internetware Applications.* In IEEE Software, Vol. 32, No. 1, pp. 67-75, January 2015.

[j19] **[CCCF 2014]** <u>Yepang Liu</u>, Chang Xu, and Shing-Chi Cheung. *Detecting Energy and Performance Bugs for Smartphone Applications.* In Communications of the CCF (a magazine in Chinese), Vol. 10, No. 12, pp. 40-42, December 2014. Invited article.

[j20] **[TSE 2014, JCR-Q1/CCF-A]** <u>Yepang Liu</u>, Chang Xu[*], Shing-Chi Cheung, and Jian Lu. *GreenDroid: Automated Diagnosis of Energy Inefficiency for Smartphone Applications.* In IEEE Transactions on Software Engineering, Vol. 40, Iss. 9, pp. 911-940, September 2014. Featured article of the issue.

[j21] **[TOSEM 2014, JCR-Q1/CCF-A]** Yueqi Li[*], Shing-Chi Cheung, Xiangyu Zhang, and <u>Yepang Liu</u>. *Scaling Up Symbolic Analysis by Removing Z-Equivalent States.* In ACM Transactions on Software Engineering and Methodology, Vol. 23, Iss. 4, Article 34, pp. 1-32, August 2014.

[j22] **[IJSI 2014]** <u>Yepang Liu</u>, Chang Xu[*], Shing-Chi Cheung[*], and Wenhua Yang. CHECKERDROID: *Automated Quality Assurance for Smartphone Applications.* In International Journal of Software and Informatics, Vol. 8, Iss. 1, pp. 21-41, August 2014. Invited article.

[j23] **[SCIS 2013, JCR-Q1/CCF-A]** Chang Xu[*], <u>Yepang Liu</u>, Shing-Chi Cheung, Chun Cao, and Jian Lu. *Towards Context Consistency by Concurrent Checking for Internetware Applications.* In Science China Information Sciences, Vol. 56, Iss. 8, Article 082105, pp. 1-20, August 2013.

[j24] **[JSS 2013, JCR-Q2/CCF-B]** <u>Yepang Liu</u>, Chang Xu[*], and Shing-Chi Cheung. *AFChecker: Effective Model Checking for Context-Aware Adaptive Applications.* In Journal of Systems and Software, Vol. 86, Iss. 3, pp. 854-867, March 2013.

Book Chapter:

1. <u>Yepang Liu</u>, Chang Xu, Shing-Chi Cheung, and Jian Lu. *GreenDroid: Automated Diagnosis of Energy Inefficiency for Smartphone Applications.* In Internetware: A New Software Paradigm for Internet Computing (Edited by Hong Mei and Jian Lu), Springer Singapore, chapter 18, pp. 389-438, December 2016.

Patents

Granted (& means my students):

1. 一种软件兼容性检测方法、智能终端及存储介质 (A Software Compatibility Testing Technique)

   - Inventors: Linlin Li[&], <u>Yepang Liu</u>, Zhirui Lu[&], Tiancheng Yu[&], Yifan Zhang[&].

- Applied on 2020-07-31; Granted on: 2023-05-15; Patent number: ZL202010759630.2.

2. 一种促进测试代码与产品代码协同演化的方法及终端设备 (A Method for Promoting Production and Test Code Co-Evolution)

- Inventors: Sinan Wang[&], Lei Liu[&], Yepang Liu.
- Applied on 2021-03-05; Granted on: 2023-05-09; Patent number: ZL202110245711.5.

3. 一种页面的修复方法及装置 (A Technique for Repairing Accessibility Issues in Webpages)

- Inventors: Yi Liu[&], Yepang Liu，Tao Ren[&].
- Applied on 2020-04-03; Granted on: 2023-03-14; Patent number: ZL202010258326.X.

Tools & Datasets

Tools: Over the years, my students, collaborators and myself have developed and released the following software testing and analysis tools. The tools have helped find 2,054 previously-unknown defects in various types of software.

1. *Aper:* A permission misuse detector for Android apps. `https://github.com/sqlab-sustech/APER-tool`.

2. *IconSeer:* A misleading icon detector for Android apps. `https://sites.google.com/view/iconseer/`.

3. *AlterAPI:* A tool for optimizing the runtime performance of data science programs. `https://sites.google.com/view/alterapi-artifacts/`.

4. *CrashTracker:* A framework-specific crash bug locator for Android apps. `https://github.com/hanada31/CrashTracker`.

5. *ICCBot:* A inter-component communication resolution tool for Android apps. `https://github.com/hanada31/ICCBot`.

6. *ConfDroid:* A configuration compatibility issue detector for Android apps. `https://sites.google.com/view/confdroid`.

7. *ĐArcher:* A on-chain-off-chain data inconsistency detector for DApps. `https://github.com/Troublor/darcher`.

8. *Sitar:* An obsolete test case detector for Java projects. `https://github.com/sqlab-sustech/Sitar-project`.

9. *MockSniffer:* A mock object recommender for unit testing. `https://github.com/henryhchchc/MockSniffer`.

10. *Hero:* A dependency analyzer for Go projects. `http://www.hero-go.com/`.

11. *EvalDNN:* A tool for testing deep neural networks. `https://github.com/yqtianust/EvalDNN`.

12. *Watchman:* A dependency analyzer for Python projects. `http://www.watchman-pypi.com/`.

13. *PyCompat:* A compatibility analyzer for Python projects. `https://github.com/sqlab-sustech/PyCompat`.

14. *PIVOT:* An API-device correlation extractor for Android. `https://ficissuepivot.github.io/Pivot/`.

15. *ωDroid:* A WebView testing tool for Android apps. `http://home.cse.ust.hk/~jhuao/wDroid.html`.

16. *Cider:* A callback compatibility issue detector. `https://cideranalyzer.github.io/`.

17. *OASIS:* A warning prioritization tool for Android static analyzers. `http://sccpu2.cse.ust.hk/oasis/`.

18. *Custodes:* A tool for detecting smells in spreadsheets. `http://sccpu2.cse.ust.hk/custodes/`.

19. *Elite:* A wake lock misuse detector for Android apps. `http://sccpu2.cse.ust.hk/elite/`.

20. *PerfChecker:* A performance bug detector for Android apps. `http://sccpu2.cse.ust.hk/perfchecker/`.

21. *GreenDroid:* An energy bug detector for Android apps. `http://sccpu2.cse.ust.hk/greendroid/`.

22. *AFChecker:* A configuration error detector for adaptive systems. `http://sccpu2.cse.ust.hk/afchecker/`.

Bug datasets: Besides tools, we have also constructed and released the following software bug datasets:

1. A dataset of 371 model optimization bugs in poplualr machine learning frameworks. `https://github.com/MOB2022/MOB-dataset`.

2. A dataset of 235 vulnerable smart contracts and 513 real front-running attacks on Ethereum blockchain. `https://github.com/Troublor/erebus-redgiant`.

3. A dataset of 368 real bugs in the open-source extended reality applications. `https://doi.org/10.5281/zenodo.3992105`.

4. A dataset of 199 runtime permission issues in open-source Android apps. `https://doi.org/10.5281/zenodo.5717473`.

5. A dataset of 569 software bugs in unmanned aerial vehicles. `https://zenodo.org/record/5090536`.

6. A dataset of 235 dependency conflict bugs in Python projects. `http://www.watchman-pypi.com/`.

7. A dataset of 196 configuration compatibility issues in Android apps. `https://sites.google.com/view/confdroid`.

8. A dataset of 292 resource leak bugs in Android apps. `https://zenodo.org/record/2589909`.

9. A dataset of 100 callback compatibility issues in Android apps. `https://cideranalyzer.github.io/`.

10. A dataset of 222 API compatibility issues in Android apps: `http://castle.cse.ust.hk/ficfinder/`.

11. A dataset of 55 wake lock misuse bugs in Android apps. `http://castle.cse.ust.hk/elite/`.

12. A dataset of 70 performance bugs in Android apps. `http://castle.cse.ust.hk/perfchecker/`.

13. A dataset of 34 open-source Android apps with energy bugs. `http://castle.cse.ust.hk/greendroid/`.

Academic Services

Summary: Starting from 2014, I have served on the organizing committee and program committee for more than 50 software engineering conferences. I am currently an Associate Editor of Journal of Computer Science and Technology.

Conference Organizing Committee:

1. Co-Chair, Computer Software Education Forum, CCF ChinaSoft 2023

2. Program Co-Chair，The Novel Ideas and Emerging Results Track, The 10th IEEE/ACM International Conference on Mobile Software Engineering and Systems (MobileSoft 2023)

3. Proceedings Chair，The 28th International Conference on Program Comprehension (ICPC 2020)

4. Co-Chair, Special Track on Security and Privacy of Modern Software, The 12th Asia-Pacific Symposium on Internetware (Internetware 2020)

5. Conference Secretary，The 22nd ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE 2014)

Journal Editorial/Review Board:

1. Young Scientist Associate Editor, Journal of Computer Science and Technology (JCST), 2021 - Present

2. Review Board Member, Empirical Software Engineering (EMSE), 2017-2018

Conference Program Committee:

1. The 47th International Conference on Software Engineering (ICSE 2025)

2. The 39th IEEE/ACM International Conference on Automated Software Engineering (ASE 2024)

3. Symposium on Software Engineering Technologies & Applications (SETA), The 48th IEEE International Conference on Computers, Software, and Applications (COMPSAC 2024)

4. The 18th International Symposium on Theoretical Aspects of Software Engineering (TASE 2024)

5. Testing and Validation of System Software Track, CCF ChinaSoft 2023

6. Defect Detection and Repair Techniques for Complex Software Track, CCF ChinaSoft 2023

7. System and Network Security Track, CCF ChinaSoft 2023

8. The 6th International Workshop on Advances in Mobile App Analysis (A-Mobile 2023)

9. New Ideas and Emerging Results (NIER) Track, The 38th IEEE/ACM International Conference on Automated Software Engineering (ASE 2023)

10. The 19th International Conference on Predictive Models and Data Analytics in Software Engineering (PROMISE 2023)

11. Tool Demonstrations Track, The 32nd ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2023)

12. Student Research Competition Track, The 45th International Conference on Software Engineering (ICSE 2023)

13. Symposium on Software Engineering Technologies & Applications (SETA), The 47th Annual International Computers, Software and Applications Conference (COMPSAC 2023)

14. The 10th International Conference on Dependable Systems and Their Applications (DSA 2023)

15. Novel Ideas and Emerging Results Track, The 10th IEEE/ACM International Confenrence on Mobile Software Engineering and Systems (MobileSoft 2023)

16. The 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2022)

17. Student Research Competition Track, The 44th International Conference on Software Engineering (ICSE 2022)

18. Artifact Evaluation Track, The 37th IEEE/ACM International Conference on Automated Software Engineering (ASE 2022)

19. Symposium on Software Engineering Technologies & Applications (SETA), The 46th Annual International Computers, Software and Applications Conference (COMPSAC 2022)

20. Software Engineering Track, The 37th ACM/SIGAPP Symposium on Applied Computing (SAC 2022)

21. The 9th International Conference on Dependable Systems and Their Applications (DSA 2022)

22. The 5th International Workshop on Advances in Mobile App Analysis (A-Mobile 2022)

23. The 1st International Workshop on Virtual and Augmented Reality Software Engineering (VARSE 2022)

24. The 36th IEEE/ACM International Conference on Automated Software Engineering (ASE 2021)

25. Artifact Evaluation Track, The 36th IEEE/ACM International Conference on Automated Software Engineering (ASE 2021)

26. Tool Demonstrations Track, The 30th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2021)

27. Symposium on Software Engineering Technologies & Applications (SETA), The 45th Annual International Computers, Software and Applications Conference (COMPSAC 2021)

28. The 8th International Conference on Dependable Systems and Their Applications (DSA 2021)

29. Vision and Tool Demos Track, the 8th IEEE/ACM International Conference on Mobile Software Engineering and Systems (MobileSoft 2021)

30. The 3rd International Workshop on Machine Learning Systems Engineering (iMLSE 2021)

31. The 3rd International Workshop on Intelligent Bug Fixing (IBF 2021)

32. The 4th International Workshop on Advances in Mobile App Analysis (A-Mobile 2021)

33. Software Engineering Track, The 36th ACM/SIGAPP Symposium on Applied Computing (SAC 2021)

34. The 35th IEEE/ACM International Conference on Automated Software Engineering (ASE 2020)

35. Symposium on Software Engineering Technologies & Applications (SETA), The 44th Annual International Computers, Software and Applications Conference (COMPSAC 2020)

36. Poster Track, The 42nd International Conference on Software Engineering (ICSE 2020)

37. Artifact Evaluation Track, The 42nd International Conference on Software Engineering (ICSE 2020)

38. New Ideas and Emerging Results Track, The 42nd International Conference on Software Engineering (ICSE 2020)

39. The 14th International Symposium on Theoretical Aspects of Software Engineering (TASE 2020)

40. Poster Track, The 13th IEEE Conference on Software Testing, Validation and Verification (ICST 2020)

41. The 2nd International Workshop on Machine Learning Systems Engineering (iMLSE 2020)

42. The 3rd International Workshop on Advances in Mobile App Analysis (A-Mobile 2020)

43. The 1st IEEE/ACM International Conference on Automation of Software Test (AST 2020)

44. The 2nd International Workshop on Intelligent Bug Fixing (IBF 2020)

45. Symposium on Software Engineering Technologies & Applications (SETA), The 43rd Annual International Computers, Software and Applications Conference (COMPSAC 2019)

46. The 13th International Symposium on Theoretical Aspects of Software Engineering (TASE 2019)

47. The Annual Conference on Software Analysis, Testing and Evolution (SATE 2019)

48. The 10th International Workshop on Empirical Software Engineering in Practice (IWESEP 2019)

49. The 2nd International Workshop on Advances in Mobile App Analysis (A-Mobile 2019)

50. The 1st IEEE International Workshop on Artificial Intelligence for Mobile (AI4Mobile 2019)

51. The 1st International Workshop on Intelligent Bug Fixing (IBF 2019)

52. Symposium on Software Engineering Technologies & Applications (SETA), The 42nd Annual International Computers, Software and Applications Conference (COMPSAC 2018)

53. The Annual Conference on Software Analysis, Testing and Evolution (SATE 2018)

54. The 9th International Workshop on Empirical Software Engineering in Practice (IWESEP 2018)

55. The 2018 International Workshop on Advances in Mobile App Analysis (A-Mobile 2018)

56. Symposium on Software Engineering Technologies & Applications (SETA), The 41st Annual International Computers, Software and Applications Conference (COMPSAC 2017)

57. The 8th International Workshop on Empirical Software Engineering in Practice (IWESEP 2017)

58. The 15th National Software Application Conference (NASAC 2016)

59. The 9th Asia-Pacific Services Computing Conference (APSCC 2015)

60. The 8th Asia-Pacific Services Computing Conference (APSCC 2014)

Journal Reviewer (Selected):

1. IEEE Transactions on Software Engineering (TSE)

2. ACM Transactions on Software Engineering and Methodology (TOSEM)

3. IEEE Transactions on Dependable and Secure Computing (TDSC)

4. Empirical Software Engineering (EMSE)

5. Journal of Systems and Software (JSS)

6. IEEE Transactions on Services Computing (TSC)

7. Journal of Computer Science and Technology (JCST)

8. Automated Software Engineering journal (ASE)

9. Journal of Software: Evolution and Process (JSME)

10. Software Quality Journal (SQJ)

11. Journal of Software (JOS, 软件学报)

12. Chinese Journal of Computers (CJC, 计算机学报)

13. Frontiers of Computer Science (FCS)

14. IET Software (IETS)

15. IEEE Communications