# Wing Lam

✉ winglam@gmu.edu
🖱 cs.gmu.edu/~winglam
⌨ Google Scholar Profile

## Research Interests

My research interests are in Software Engineering, with a focus on Software Testing and Analysis, AI and Software Engineering, Software Evolution, and Software Dependability. Recent topics include detecting and fixing flaky tests, generating test inputs, testing mobile apps, optimizing continuous integration/deployment, and improving software engineering education.

## Employment

| | |
|---|---|
| Jan. 2022 – now | Assistant Professor, Computer Science, George Mason University (GMU) |
| 2021 – 2024 | Part Time Applied Research Scientist, Fraunhofer USA Center Mid-Atlantic, Software Systems Engineering Division |

## Education

| | |
|---|---|
| 2015 – 2021 | **PhD Computer Science**, *University of Illinois Urbana-Champaign (UIUC)*<br>Advisors: Tao Xie and Darko Marinov |
| 2010 – 2013 | **BSc Computer Science with Distinction**, *University of Washington (UW)*<br>Advisors: Michael D. Ernst and David Notkin |

## Selected Honors and Awards

| | |
|---|---|
| 2024 | NSF CAREER Award (National) |
| 2024 | George Mason University Outstanding Research Rising Star Award (Institutional) |
| 2022 | ACM SIGSOFT Outstanding Doctoral Dissertation Award (International) |
| 2020 | Google – CMD-IT FLIP Alliance Fellowship (National) |
| 2017 | NSF Graduate Research Fellowship Honorable Mention (National) |
| 2016 | Qualcomm Innovation Fellowship Finalist (International) |
| 2015 | Ray Ozzie Computer Science Fellowship (Institutional) |

## Research Grants

| | |
|---|---|
| 2024 | CAREER: Enhanced Reliability and Efficiency of Software Regression Testing in the Presence of Flaky Tests, *National Science Foundation*, CCF-2338287. PI: Wing Lam, $618,531 |
| 2023 | Collaborative Research: SHF: Medium: Bug Report Management 2.0, *National Science Foundation*, CCF-2343057. PI: Wing Lam, Former PI: Andrian Marcus, $408,677 |
| 2023 | Collaborative Research: CCRI: Planning-C: An Infrastructure and Dataset for Research in Android Testing & Analysis, *National Science Foundation*, CNS-2235136. PI: Wing Lam, co-PI: Kevin Moran, $66,250 |
| 2022 | Toward Automated Human-like Testing of Android Apps, *Dragon Testing*. PI: Wing Lam, co-PI: Kevin Moran, $50,000 |
| 2020 | Collaborative Research: SHF: Small: Towards a Holistic Causal Model for Continuous Software Traceability, *National Science Foundation*, CCF-2007246. PI: Denys Poshyvanyk, co-PIs: Kevin Moran, Wing Lam, $500,000 |

# Research Track Publications

ICSE'25 [22]   Shanto Rahman, **Bala Naren Chanumolu**, **Suzzana Rafi**, August Shi, and **Wing Lam**. Ranking Relevant Tests for Order-Dependent Flaky Tests. *47th International Conference on Software Engineering*, pages 1999–2011, (Ottawa, Ontario, Canada), 2025. Acceptance rate: 21% (245/1150)

TSE'24 [21]   Denini Silva, Martin Gruber, Satyajit Gokhale, Ellen Arteca, Alexi Turcotte, Marcelo d'Amorim, **Wing Lam**, Stefan Winter, Jonathan Bell. The Effects of Computational Resources on Flaky Tests. *IEEE Transactions on Software Engineering*, 2024.

ISSRE'24 [20]   Hao Wang, Pu Yi, Jeremias Parladorio, **Wing Lam**, Darko Marinov, and Tao Xie. Hierarchy-Aware Regression Test Prioritization. *35th IEEE International Symposium on Software Reliability Engineering*, pages 343–354, (Tsukuba, Japan), 2024. Acceptance rate: 28% (53/188)

ICSME'24 [19]   Hengchen Yuan, Jiefang Lin, **Wing Lam**, and August Shi. Test Scheduling Across Heterogeneous Machines While Balancing Running Time, Price, and Flakiness. *40th IEEE International Conference on Software Maintenance and Evolution*, pages 449–460, (Flagstaff, AZ, USA), 2024. Acceptance rate: 26% (49/188)

ICST'24 [18]   **Safwat Ali Khan**, Wenyu Wang, Yiran Ren, Bin Zhu, Jiangfan Shi, **Wing Lam**, and Kevin Moran. AURORA: Navigating UI Tarpits via Automated Neural Screen Understanding. *17th IEEE International Conference on Software Testing, Verification and Validation*, pages 221–232, (Toronto, Canada), 2024. Acceptance rate: 25% (28/112)

ICST'24 [17]   Shanto Rahman, Aaron Massey, **Wing Lam**, August Shi, and Jonathan Bell. Automatically Reproducing Timing-Dependent Flaky-Test Failures. *17th IEEE International Conference on Software Testing, Verification and Validation*, pages 269–280, (Toronto, Canada), 2024. Acceptance rate: 25% (28/112)

ASE'23 [16]   **Talank Baral**, Shanto Rahman, **Bala Naren Chanumolu**, Basak Balci, Tuna Tuncer, August Shi, and **Wing Lam**. Optimizing Continuous Development By Detecting and Preventing Unnecessary Content Generation. *38th Annual International Conference on Automated Software Engineering*, pages 901–913, (Kirchberg, Luxembourg), 2023. Acceptance rate: 21% (134/630)

ISSTA'23 [15]   Chengpeng Li, Mahdi Khosravi, **Wing Lam**, and August Shi. Systematically Producing Test-Orders to Detect Order-Dependent Flaky Tests. *2023 International Symposium on Software Testing and Analysis*, pages 627–638, (Seattle, WA, USA), 2023. Acceptance rate: 13% (20/159)

ICSE'22 [14]   Anjiang Wei, Pu Yi, Zhengxi Li, Tao Xie, Darko Marinov, and **Wing Lam**. Preempting Flaky Tests via Non-Idempotent-Outcome Tests. *44th International Conference on Software Engineering*, pages 1730–1742, (Pittsburgh, PA, USA), 2022. Acceptance rate: 26% (197/751)

TACAS'22 [13]   Pu Yi, Hao Wang, Tao Xie, Darko Marinov, and **Wing Lam**. A Theoretical Analysis of Random Regression Test Prioritization. *28th International Conference on Tools and Algorithms for the Construction and Analysis of Systems*, pages 217–235, (Munich, Germany), 2022. Acceptance rate: 31% (50/159)

ISSTA'21 [12]   Wenyu Wang, **Wing Lam**, and Tao Xie. An Infrastructure Approach to Improving Effectiveness of Android UI Testing Tools. *2021 International Symposium on Software Testing and Analysis*, pages 165–176, (Virtual Event), 2021. Acceptance rate: 22% (51/233)

TACAS'21 [11]   Anjiang Wei, Pu Yi, Tao Xie, Darko Marinov, and **Wing Lam**. Probabilistic and Systematic Coverage of Consecutive Test-Method Pairs for Detecting Order-Dependent Flaky Tests. *27th International Conference on Tools and Algorithms for the Construction and Analysis of Systems*, pages 270–287, (Virtual Event), 2021. Acceptance rate: 33% (47/141)

ICSE'20 [10]   **Wing Lam**, Kıvanç Muşlu, Hitesh Sajnani, and Suresh Thummalapenta. A Study on the Lifecycle of Flaky Tests. *42nd International Conference on Software Engineering*, pages 1471–1482, (Virtual Event), 2020. Acceptance rate: 21% (129/617) **This paper was featured in Google's Software Engineering and Programming Languages Journal Club**

OOPSLA'20 [9]   **Wing Lam**, Stefan Winter, Anjiang Wei, Tao Xie, Darko Marinov, and Jonathan Bell. A Large-Scale Longitudinal Study of Flaky Tests. *35th ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications*, pages 202:1–202:29, (Virtual Event), 2020. Acceptance rate: 36% (109/302)

ISSTA'20 [8]   **Wing Lam**, August Shi, Reed Oei, Sai Zhang, Michael D. Ernst, and Tao Xie. Dependent-Test-Aware Regression Testing Techniques. *2020 International Symposium on Software Testing and Analysis*, pages 298–311, (Virtual Event), 2020. Acceptance rate: 27% (43/162)

ISSRE'20 [7]   **Wing Lam**, Stefan Winter, Angello Astorga, Victoria Stodden, and Darko Marinov. Understanding Reproducibility and Characteristics of Flaky Tests Through Test Reruns in Java Projects. *31st IEEE International Conference on Software Reliability Engineering*, pages 403–413, (Virtual Event), 2020. Acceptance rate: 26% (38/148)

ESEC/FSE'19 [6]   August Shi, **Wing Lam**, Reed Oei, Tao Xie, and Darko Marinov. iFixFlakies: A Framework for Automatically Fixing Order-dependent Flaky Tests. *27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering*, pages 545–555, (Tallinn, Estonia), 2019. Acceptance rate: 24% (74/303)

ISSTA'19 [5]   **Wing Lam**, Patrice Godefroid, Suman Nath, Anirudh Santhiar, and Suresh Thummalapenta. Root Causing Flaky Tests in a Large-scale Industrial Setting. *2019 International Symposium on Software Testing and Analysis, Experience Paper*, pages 101–111, (Beijing, China), 2019. Acceptance rate: 20% (29/142)

ICST'19 [4]   **Wing Lam**, Reed Oei, August Shi, Darko Marinov, and Tao Xie. iDFlakies: A Framework for Detecting and Partially Classifying Flaky Tests. *12th IEEE International Conference on Software Testing, Verification and Validation*, pages 312–322, (Xi'an, China), 2019. Acceptance rate: 29% (31/110)

ICPC'19 [3]   Hao Yu, **Wing Lam**, Long Chen, Ge Li, Tao Xie and Qianxiang Wang. Neural Detection of Semantic Code Clones via Tree-Based Convolution. *27th IEEE/ACM International Conference on Program Comprehension*, pages 70–80, (Montreal, Canada), 2019. Acceptance rate: 26% (24/93)

ECOOP'18 [2]   **Wing Lam**, Siwakorn Srisakaokul, Blake Bassett, Peyman Mahdian, Pratap Lakshman, and Jonathan de Halleux. A Characteristic Study of Parameterized Unit Tests in .NET Open Source Projects. *32nd European Conference on Object-Oriented Programming*, pages 5:1–5:27, (Amsterdam, Netherlands), 2018. Acceptance rate: 39% (26/66)

ISSTA'14 [1]  Sai Zhang, Darioush Jalali, Jochen Wuttke, Kıvanç Muşlu, **Wing Lam**, Michael D. Ernst, and David Notkin. Empirically Revisiting the Test Independence Assumption. *2014 International Symposium on Software Testing and Analysis*, pages 385–396, (San Jose, CA, USA), 2014. Acceptance rate: 28% (36/128) **This paper was featured in Google's Software Engineering and Programming Languages Journal Club**

## Other Publications

*12 other publications (3 industry track, 3 workshop, 2 demonstrations track,*
*1 data showcase track, 1 new ideas track, 1 dissertation, 1 student research competition)*

ICSE NIER'25 [12]  Nate Levin, Chengpeng Li, Yule Zhang, August Shi, and **Wing Lam**. Takuan: Using Dynamic Invariants To Debug Order-Dependent Flaky Tests. *47th International Conference on Software Engineering, New Ideas and Emerging Results Track*, pages 81–45, (Ottawa, Ontario, Canada), 2025. Acceptance rate: 26% (25/96)

ICSE DEMO'25 [11]  **Talank Baral**, Emirhan Oğul, Shanto Rahman, August Shi, and **Wing Lam**. OptCD: Optimizing Continuous Development. *47th International Conference on Software Engineering, Demonstrations Track*, pages 45–48, (Ottawa, Ontario, Canada), 2025.

TestEd'23 [10]  Sajed Jalil, **Suzzana Rafi**, Thomas D. LaToza, Kevin Moran, and **Wing Lam**. ChatGPT and Software Testing Education: Promises & Perils. *2nd Software Testing Education Workshop*, pages 4130–4137, (Dublin, Ireland), 2023.

ICSE DEMO'22 [9]  Ruixin Wang, Yang Chen, and **Wing Lam**. iPFlakies: A Framework for Detecting and Fixing Python Order-Dependent Flaky Tests. *44th International Conference on Software Engineering, Demonstrations Track*, pages 120–124, (Pittsburgh, PA, USA), 2022. Acceptance rate: 50% (49/98)

PhD'21 [8]  **Wing Lam**. Detecting, Characterizing, and Taming Flaky Tests. *PhD thesis, University of Illinois at Urbana-Champaign*, (Urbana, IL, USA), 2021. **This work won the ACM SIGSOFT Outstanding Doctoral Dissertation Award**

SEN'21 [7]  Pu Yi, Anjiang Wei, **Wing Lam**, Tao Xie, and Darko Marinov. Finding Polluter Tests Using Java PathFinder. *ACM SIGSOFT Software Engineering Notes*, (Virtual Event), 2021.

MSR DS'18 [6]  Ripon K. Saha, Yingjun Lyu, **Wing Lam**, Hiroaki Yoshida, and Mukul R. Prasad. Bugs.jar: A Large-scale, Diverse Dataset of Real-world Java Bugs. *15th Working Conference on Mining Software Repositories, Data Showcase (DS) track*, pages 10–13, (Gothenburg, Sweden), 2018. Acceptance rate: 58% (14/24)

ESEC/FSE'17 [5] Industry  **Wing Lam**, Zhengkai Wu, Dengfeng Li, Wenyu Wang, Haibing Zheng, Hui Luo, Peng Yan, Yuetang Deng, and Tao Xie. Record and Replay for Android: Are We There Yet in Industrial Cases? *11th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Industry track*, pages 854–859, (Paderborn, Germany), 2017.

ICSE SEIP'17 [4]  Haibing Zheng, Dengfeng Li, Xia Zeng, Beihai Liang, Wujie Zheng, Yuetang Deng, **Wing Lam**, Wei Yang, and Tao Xie. Automated Test Input Generation for Android: Towards Getting There in an Industrial Case. *39th International Conference on Software Engineering, Software Engineering in Practice (SEIP) track*, pages 253–262, (Buenos Aires, Argentina), 2017. Acceptance rate: 29% (31/107)

HotSoS'17 [3]  Dengfeng Li, **Wing Lam**, Wei Yang, Zhengkai Wu, Xusheng Xiao, and Tao Xie. Towards Privacy-Preserving Mobile Apps: A Balancing Act. *Symposium and Bootcamp on the Science of Security*, pages 1, (Hanover, MD, USA), 2017.

| | |
|---|---|
| FSE'16 [2] Industry | Xia Zeng, Dengfeng Li, Wujie Zheng, Fan Xia, Yuetang Deng, **Wing Lam**, Wei Yang, and Tao Xie. Automated Test Input Generation for Android: Are We Really There Yet in an Industrial Case? *24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering, Industry track*, pages 987–992, (Seattle, WA, USA), 2016. |
| FSE SRC'16 [1] | **Wing Lam**. Repairing Test Dependence. *24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering, Student Research Competition (SRC)*, pages 1121–1123, (Seattle, WA, USA), 2016. |

## Service to Professional Community

| | |
|---|---|
| Organizing Com. | Flaky Test Workshop (FTW) 2026, Flaky Test Workshop (FTW) 2025 |
| General Chair | MOBILESoft 2026 |
| PC Co-Chair | ASE 2024 Journal-First Track, FSE 2024 Doctoral Symposium, MOBILESoft 2024 Research Track |
| PC Member Research Track | ASE 2025, ICSE 2025, MOBILESoft 2025, FSE 2024, ISSTA 2024, ICST 2024, ISSTA 2023, ICST 2023, ASE 2022, ISSRE 2022 |
| PC Member Other | ICSE 2026 New Ideas and Emerging Results Track, ASE 2025 New Ideas and Emerging Results Track, ICSE 2025 New Ideas and Emerging Results Track, ICPC 2022 ERA Track, ICSE 2022 Demonstration Track, ESEC/FSE 2021 Industry Track, OOPSLA 2020 Student Research Competition, OOPSLA 2018 Artifact Evaluation, ISSTA 2018 Artifact Evaluation, OOPSLA 2017 Artifact Evaluation, ISSTA 2017 Artifact Evaluation |
| Panelist | National Science Foundation 2025, National Science Foundation 2024, National Science Foundation 2023 |
| Panelist | Early Career Academic Careers Workshop (EC-ACW) 2025, LEAP Alliance 2023: Why Go to Graduate School, ISSTA 2022: Doctoral Symposium, Tapia 2018: Disability Disclosure in Education and Employment |
| Judge | Thomas Jefferson High School Science Fair in 2023 |
| Reviewer | TSE 2025, TSE 2024, TSE 2023, TSE 2022, EMSE 2021, TSE 2021, TSE 2020, TOSEM 2020 |

## Service to University

| | |
|---|---|
| Ambassador | GMU Fall Newly Admitted Undergrad Day in 2025 |
| Organizer | GMU Software Engineering Seminar in 2025, 2024, 2023, 2022 |
| Mentor | GMU Aspiring Scientists Summer Internship Program (ASSIP) in 2025, 2024, 2023, 2022 |
| Mentor | UIUC Promoting Undergraduate Research in Engineering (PURE) in 2019, 2018, 2017, 2016 |
| Mentor | UIUC Mentoring Undergraduates in Science and Engineering (MUSE) in 2018, 2017 |
| Ambassador | UIUC CS Department Graduate Student Ambassador in 2020, 2019, 2018, 2017, 2016 |
| Presenter | UIUC Prospective Graduate Students Visit Days in 2019, 2018 |

## Teaching Experience

| | |
|---|---|
| GMU, Fall'25 | Instructor for SWE 437/637 (Undergraduate & Graduate-level): Software Testing and Maintenance |
| GMU, Fall'24 | Instructor for CS 691 / SWE 699 (Graduate-level): Research in Automated Software Engineering |
| GMU, Spring'24 | Instructor for SWE 637 (Graduate-level): Software Testing |
| GMU, Fall'23 | Instructor for SWE 637 (Graduate-level): Software Testing |
| GMU, Spring'23 | Instructor for SWE 637 (Graduate-level): Software Testing |
| GMU, Fall'22 | Instructor for SWE 437 (Undergraduate-level): Software Testing and Maintenance |
| GMU, Spring'22 | Instructor for SWE 437 (Undergraduate-level): Software Testing and Maintenance |
| UIUC, Fall'17 | Teaching Assistant for CS 498 ST (Graduate-level): Software Testing |
| UW, Fall'13 | Teaching Assistant for CS 331 (Undergraduate-level): Software Design and Implementation |
| UW, Winter'13 | Teaching Assistant for CS 331 (Undergraduate-level): Software Design and Implementation |

## Industry Experience

| | |
|---|---|
| 2019 | Microsoft Research Intern, Redmond, WA, USA<br>○ Published ICSE'20 [10] |
| 2018 | Microsoft Research Intern, Redmond, WA, USA<br>○ Published ISSTA'19 [5] |
| 2017 | Fujitsu Laboratories of America Research Intern, Sunnyvale, CA, USA<br>○ Published MSR DS'19 [6] |
| 2016 | Microsoft Research Intern, Cambridge, UK<br>○ Won **first place** at Microsoft Hackathon competition |
| 2014 – 2015 | Whitepages Inc. Mobile Software Engineer, Seattle, WA, USA<br>○ Full-time software developer, building mobile apps for both Android and iOS |
| 2013 | Google Intern: Advertising Mobile (AdMob) Infrastructure Development, Mountain View, CA, USA<br>○ Won **first place** at Google Glass Hackathon competition |

## Research Advising & Mentoring

*Advising or co-advising the research of **<u>five PhD</u>** students*

○ Talank Baral (PhD, George Mason University)
  - Co-authored: ASE'23 [16], ICSE DEMO'25 [11]
○ Safwat Ali Khan (PhD, George Mason University, co-advised with Kevin Moran)
  - Co-authored: ICST'24 [18]
○ Md. Mahmudul Hasan Pious (PhD, George Mason University)
○ Suzzana Rafi (PhD, George Mason University)
  - Co-authored: ICSE'25 [22], TestEd'23 [10]
○ Ying Zhou (PhD, George Mason University, co-advised with Andrian Marcus)

*Mentored the research of **three graduate** students, **15 undergraduate** students, and **one high school** student*

- Basak Balci (BS, Ozyegin University. Next: MS, Technical University of Munich)
  - Co-authored: ASE'23 [16]
- Bala Naren Chanumolu (MS, George Mason University. Next: Amazon Web Services (AWS))
  - Co-authored: ICSE'25 [22], ASE'23 [16]
- Yang Chen (BS, Huazhong University of Science and Technology. Next: PhD, University of Illinois at Urbana-Champaign)
  - Co-authored: ICSE DEMO'22 [9]
- Mahdi Khosravi (BS, Middle East Technical University. Next: MS, Bilkent University)
  - Co-authored: ISSTA'23 [15]
- Nate Levin (High School, Yorktown High School. Next: Undergraduate, Georgia Tech)
  - Co-authored: ICSE NIER'25 [12]
- Dengfeng Li (MS, UIUC. Next: Salesforce)
  - Co-authored: ESEC/FSE Industry'17 [5], ICSE SEIP'17 [4], FSE Industry'16 [2]
  - Award(s): 2017 Siebel Scholar
- Jiefang Lin (BS, Southern University of Science and Technology. Next: PhD, University of Texas at Austin)
  - Co-authored: ICSME'24 [19]
- Reed Oei (BS, UIUC. Next: PhD, University of California, Los Angeles)
  - Co-authored: ISSTA'20 [8], ESEC/FSE'19 [6], ICST'19 [4]
  - Award(s): Runner Up of the 2021 CRA Outstanding Undergraduate Researcher Award, NSF Graduate Research Fellowship
- Emirhan Oğul (BS, Middle East Technical University)
  - Co-authored: ICSE DEMO'25 [11]
- Jackie Oh (BS, UIUC. Next: Stripe, Inc.)
  - Award(s): 2019 PURE Best Presentation Award, 2019 Engineering Visionary Scholarship, 2018 National Merit PPG Foundation Scholarship, 2018 Spyglass Endowed Scholarship
- Tuna Tuncer (BS, Ozyegin University. Next: MS, Technical University of Munich)
  - Co-authored: ASE'23 [16]
- Hao Wang (BS, Peking University. Next: PhD, UC Berkeley)
  - Co-authored: ISSRE'24 [20], TACAS'22 [13]
- Ruixin Wang (BS, Zhejiang University. Next: PhD, Purdue University)
  - Co-authored: ICSE DEMO'22 [9]
- Anjiang Wei (BS, Peking University. Next: PhD, Stanford University)
  - Co-authored: ICSE'22 [14], TACAS'21 [11], OOPSLA'20 [9]
- Henry Wu (BS, UIUC. Next: MEng, Cornell University)
  - Award(s): 2017 Barbara H. and Brian L. Renwick Electrical Engineering Scholarship
- Jinlin Xu (BS, UIUC. Next: MS, University of Pennsylvania)
  - Award(s): 2019 Yunni and Maxine Pao Memorial Scholarship, 2018 Fiddler Innovation Undergraduate Fellowship
- Pu Yi (BS, Peking University. Next: PhD, Stanford University)
  - Co-authored: ICSE'22 [14], TACAS'22 [13], TACAS'21 [11], SEN'21 [7]
- Hao Yu (MS, Peking University. Next: PhD, Peking University)
  - Co-authored: ICPC'19 [3]
- Yule Zhang (BS, George Mason University. Next: MS, UC San Diego)
  - Co-authored: ICSE NIER'25 [12]

## Notable Open-Source Contributions

My GitHub ID · `https://github.com/winglam`

International Dataset of Flaky Tests (IDoFT) · A dataset of **8000+** flaky tests detected in **100+** real-world projects and **4500+** flaky tests addressed. The dataset is obtained through my own research, my supervision of students, and the contributions of others. One important obstacle to performing research on flaky tests has been obtaining a dataset of flaky tests in real-world projects. The goal of IDoFT is to crowd-source such a dataset and to compile a variety of information (e.g., failure rates, flakiness-introducing commits) about flaky tests. IDoFT is available at `https://github.com/TestingResearchIllinois/idoft`

iDFlakies · iDFlakies is a framework for detecting and partially classifying flaky tests. iDFlakies reruns tests in different orders and considers as flaky any tests that fail (but passed in another order). iDFlakies further classifies each detected flaky test as order-dependent or non-order-dependent. iDFlakies detected **1800+** flaky tests in open-source GitHub projects, where 50.5% of these flaky tests are order-dependent and 49.5% are non-order-dependent. iDFlakies is available at `https://github.com/iDFlakies/iDFlakies`

iFixFlakies · iFixFlakies is a framework for automatically fixing order-dependent flaky tests. iFixFlakies finds tests in the test suite that contain logic for resetting/setting state for order-dependent tests to pass. Once iFixFlakies finds these tests, it minimizes the code from those tests to generate a patch to apply to the order-dependent test such that it passes when run in the failing order. iFixFlakies automatically fixed **100+** order-dependent tests from open-source GitHub projects. iFixFlakies is available at `https://github.com/TestingResearchIllinois/iFixFlakies`

## Presentations

*18 seminar talks, 11 conference talks, 8 invited talks, 8 posters, 6 guest lectures*

Seminar Talk · *Optimizing Continuous Development Reliability and Efficiency*, University of Central Florida, November 2025

Invited Talk · *Optimizing Continuous Development Reliability and Efficiency*, Georgia Institute of Technology, March 2025

Invited Talk · *Optimizing Continuous Development Reliability and Efficiency*, North Carolina State University, February 2025

Seminar Talk · *Optimizing Continuous Development Reliability and Efficiency*, Northeastern University, February 2025

Seminar Talk · *Systematic and Lightweight Techniques to Preempt Flaky Tests*, Osaka University, December 2024

Invited Talk · *Systematic and Lightweight Techniques to Preempt Flaky Tests*, Arizona State University (ASU), October 2024

Seminar Talk · *Systematic and Lightweight Techniques to Preempt Flaky Tests*, Mathematics Seminar, National Institute of Standards and Technology (NIST), December 2023

Poster · *MObile app Data collection and AnaLysis (MODAL): An Infrastructure for Improving Mobile App Quality*, National Science Foundation CIRC Principal Investigators Meeting, Salt Lake City, UT, USA, November 2023

Conference Talk · *Optimizing Continuous Development By Detecting and Preventing Unnecessary Content Generation*, ASE 2023, Kirchberg, Luxembourg, September 2023

Seminar Talk · *Systematic and Lightweight Techniques to Preempt Flaky Tests*, Hong Kong University of Science and Technology, Spring 2023

| | |
|---|---|
| Seminar Talk | *Taming Flaky Tests in a Non-Deterministic World*, Aarhus University, Fall 2022 |
| Seminar Talk | *Taming Flaky Tests in a Non-Deterministic World*, Stevens Institute of Technology, Fall 2022 |
| Seminar Talk | *Taming Flaky Tests in a Non-Deterministic World*, University of Toronto, Fall 2022 |
| Seminar Talk | *Taming Flaky Tests in a Non-Deterministic World*, University of Washington, Fall 2022 |
| Conference Talk | *iPFlakies: A Framework for Detecting and Fixing Python Order-Dependent Flaky Tests*, ICSE DEMO 2022, Pittsburgh, PA, USA, May 2022 |
| Seminar Talk | *Taming Flaky Tests in a Non-Deterministic World*, PLSE Seminar, National University of Singapore, Spring 2022 |
| Invited Talk | *Taming Flaky Tests in a Non-Deterministic World*, Drexel University, Spring 2021 |
| Invited Talk | *Taming Flaky Tests in a Non-Deterministic World*, George Mason University, Spring 2021 |
| Invited Talk | *Taming Flaky Tests in a Non-Deterministic World*, Hong Kong University of Science and Technology, Spring 2021 |
| Invited Talk | *Taming Flaky Tests in a Non-Deterministic World*, Oregon State University, Spring 2021 |
| Invited Talk | *Taming Flaky Tests in a Non-Deterministic World*, University of Victoria, Spring 2021 |
| Guest Lecture | *Taming Flaky Tests in a Non-Deterministic World*, CS 428 (Software Engineering II), UIUC, Spring 2021 |
| Conference Talk | *A Large-Scale Longitudinal Study of Flaky Tests*, OOPSLA 2020, Virtual event, November 2020 |
| Seminar Talk | *A Large-Scale Longitudinal Study of Flaky Tests*, Brett Daniel Software Engineering Seminar, UIUC, Fall 2020 |
| Guest Lecture | *A Large-Scale Longitudinal Study of Flaky Tests*, CS 527 (Topics in Software Engineering), UIUC, Fall 2020 |
| Conference Talk | *Understanding Reproducibility and Characteristics of Flaky Tests Through Test Reruns in Java Projects*, ISSRE 2020, Virtual event, October 2020 |
| Seminar Talk | *Understanding Reproducibility and Characteristics of Flaky Tests Through Test Reruns in Java Projects*, Brett Daniel Software Engineering Seminar, UIUC, Fall 2020 |
| Guest Lecture | *Understanding Reproducibility and Characteristics of Flaky Tests Through Test Reruns in Java Projects*, CS 527 (Topics in Software Engineering), UIUC, Fall 2020 |
| Conference Talk | *Dependent-Test-Aware Regression Testing Techniques*, ISSTA 2020, Virtual event, July 2020 |
| Conference Talk | *A Study on the Lifecycle of Flaky Tests*, ICSE 2020, Virtual event, July 2020 |
| Poster | *iDFlakies: A Framework for Detecting and Partially Classifying Flaky Tests*, Grad Cohort Workshop for Underrepresented Minorities and Persons with Disabilities (URMD), Austin, TX, USA, March 2020 |
| Seminar Talk | *Flaky tests are not to be feared – they are only to be understood*, University of Texas at Dallas, March 2020 |
| Guest Lecture | *Flaky tests are not to be feared – they are only to be understood*, CS 428 (Software Engineering II), UIUC, Spring 2020 |
| Conference Talk | *Root Causing Flaky Tests in a Large-scale Industrial Setting*, ISSTA 2019, Beijing, China, July 2019 |

| | |
|---|---|
| Conference Talk | *iDFlakies: A Framework for Detecting and Partially Classifying Flaky Tests*, ICST 2019, Xi'an, China, April 2019 |
| Poster | *iDFlakies: A Framework for Detecting and Partially Classifying Flaky Tests*, Huawei Software Engineering Research Summit 2019, Champaign, IL, USA, March 2019 |
| Seminar Talk | *iDFlakies: A Framework for Detecting and Partially Classifying Flaky Tests*, Brett Daniel Software Engineering Seminar, UIUC, Spring 2019 |
| Guest Lecture | *Flaky tests – Overview, Recent work, and Future work*, CS 427 (Software Engineering I), UIUC, Fall 2018 |
| Poster | *Towards Root Causing Flaky Tests in a Large-scale Industrial Setting*, Microsoft PhD Summit 2018, Redmond, WA, USA, October 2018 |
| Conference Talk | *A Characteristic Study of Parameterized Unit Tests in .NET Open Source Projects*, ECOOP 2018, Amsterdam, Netherlands, July 2018 |
| Poster | *A Characteristic Study of Parameterized Unit Tests in .NET Open Source Projects*, ECOOP 2018, Amsterdam, Netherlands, July 2018 |
| Seminar Talk | *A Characteristic Study of Parameterized Unit Tests in .NET Open Source Projects*, Brett Daniel Software Engineering Seminar, UIUC, Spring 2018 |
| Poster | *How Useful Are Bug Reports in Writing Failure-Reproducing Tests?*, Grad Cohort Workshop for Underrepresented Minorities and Persons with Disabilities (URMD), San Diego, CA, USA, March 2018 |
| Conference Talk | *Record and Replay for Android: Are We There Yet in Industrial Cases?*, ESEC/FSE 2017, Paderborn, Germany, September 2017 |
| Poster | *Record and Replay for Android: Are We There Yet in Industrial Cases?*, ESEC/FSE 2017, Paderborn, Germany, September 2017 |
| Semnar Talk | *Automated Testing Tools for Android: Are We There Yet in Industrial Cases?*, Chinese University of Hong Kong, December 2017 |
| Seminar Talk | *Automated Testing Tools for Android: Are We There Yet in Industrial Cases?*, Hong Kong University, December 2017 |
| Seminar Talk | *Automated Testing Tools for Android: Are We There Yet in Industrial Cases?*, Hong Kong University of Science and Technology, December 2017 |
| Guest Lecture | *Detection and Accommodation of Test Dependence*, CS 427 (Software Engineering I), UIUC, Fall 2017 |
| Conference Talk | *Preliminary Analysis of Code Hunt Data Set from a Contest*, FSE 2016, Seattle, WA, USA, November 2016 |
| Poster | *Repairing Test Dependence*, FSE 2016, Seattle, WA, USA, November 2016 |
| Seminar Talk | *When Tests Collide: Evaluating and Coping with the Impact of Test Dependence*, Brett Daniel Software Engineering Seminar, UIUC, Fall 2015 |