Shurui ZHOU

Phone: 416-978-4628
Email: shurui.zhou@utoronto.ca

RESEARCH INTERESTS

My research focuses on the collaboration and coordination challenges faced by interdisciplinary and distributed software development teams. I design, develop, and evaluate interventions (tools) to help software teams to collaborate more efficiently. My research uses methods from computer-supported cooperative work, empirical software engineering, and social computing.

ACADEMIC EMPLOYMENT

From July 2020	Assistant Professor, **University of Toronto,** Department of Electrical & Computer Engineering Department of Computer Science (Cross-Appointment) Schwartz Reisman Institute (Affiliated)

EDUCATION

Aug. 2014 – May. 2020	**Carnegie Mellon University,** Pittsburgh, PA Ph.D. Institute for Software Research, School of Computer Science **Advisor:** Christian Kästner
Sept. 2011 – Jun. 2014	**Peking University,** Beijing, China M.S. Dept. of Service Science and Engineering, School of Software and Microelectronics
Sept. 2007 – Jul. 2011	**Xi'an Jiaotong University,** Xi'an, China B.S. Dept. of Software Engineering, School of Software Engineering

WORK EXPERIENCE

Jun. 2016 – Aug. 2016	**Qualcomm Technologies, Inc.,** San Diego, CA Interim Engineering Intern, Security Exploration Group (SEG) A project of "Characterization of Features Using Community Detection"

TEACHING EXPERIENCE

Instructor	**(University of Toronto)**
Winter 2021- 2023	Graduate: (ECE1785/CSC2130) Empirical Software Engineering
Fall 2022	Undergraduate: (ECE358) Foundations of Computing
Fall 2021	Undergraduate: (ECE345) Algorithms and Data Structures
Fall 2020-2022	Undergraduate: (ECE444) Software Engineering
Teaching Assistant	**(Carnegie Mellon University)**
Fall 2018	Methods: Deciding What to Design
Spring 2019	Artificial Intelligence Methods for Social Good

PUBLICATIONS

Refereed Conference Publications

- **In the age of collaboration, the Computer-Aided Design ecosystem is behind: Evidence from an interview study of distributed CAD practice.** K. Cheng, S. Zhou, and A. Olechowski. *The 26th ACM Conference On Computer-Supported Cooperative Work And Social Computing (CSCW)*. 2023
- **Collaboration Challenges in Building ML-Enabled Systems: Communication, Documentation, Engineering, and Process.** Nadia Nahar, **S. Zhou**, Grace Lewis, and C. Kästner. . *In Proceedings of the 44nd International Conference on Software Engineering (ICSE)*, 2022. **[🏅Distinguished Paper Award]**
- **Subtle Bugs Everywhere: Generating Documentation for Data Wrangling Code**. C. Yang, **S. Zhou**, J. Guo, and C. Kästner. *In Proceedings of the 36th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, 2021.
- **Interactive Patch Filtering as Debugging Aid.** J. Liang, R. Ji, J. Jiang, **S. Zhou**, Y. Lou, Y. Xiong and G. Huang. *In Proceedings of the 37th International Conference on Software Maintenance and Evolution (ICSME)*, 2021. **[🏅IEEE TCSE Distinguished Paper Awards]**
- **Understanding Collaborative Software Development: An Interview Study.** K. Constantino, **S. Zhou**, M. Souza, E. Figueiredo, and C. Kästner. *In Proceedings of the 15th ACM/IEEE International Conference on Global Software Engineering (ICGSE)*, New York, NY: ACM Press *2020.*
- **How Has Forking Changed in the Last 20 Years? A Study of Hard Forks on GitHub. S. Zhou**, B. Vasilescu, and C. Kästner. *In Proceedings of the 42nd International Conference on Software Engineering (ICSE)*, New York, NY: ACM Press, May 2020
- **What the Fork: A Study of Inefficient and Efficient Forking Practices in Social Coding. S. Zhou**, B. Vasilescu, and C. Kästner. In *Proceedings of the 27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (FSE)*, New York, NY: ACM Press, August 2019

- **How to Explain a Patch: An Empirical Study of Patch Explanations in Open Source Projects.** J. Liang, Y. Hou, **S. Zhou**, J. Chen, Y. Xiong, G. Huang. *The 30th International Symposium on Software Reliability Engineering (ISSRE)*, Berlin, Germany, October 2019.
- **Identifying Redundancies in Fork-based Development.** L. Ren, **S. Zhou,** C. Kästner, and A. Wąsowski. In Proceedings of the *27th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER)*, pages 230--241, March 2019.
- **Identifying Features in Forks. S. Zhou**, Ș. Stănciulescu, O. Leßenich, Y. Xiong, A. Wąsowski, and C. Kästner. Identifying Features in Forks. In Proceedings of the 40th International Conference on Software Engineering (ICSE), New York, NY: ACM Press, May 2018
- **Adding Sparkle to Social Coding: An Empirical Study of Repository Badges in the npm Ecosystem**. A. Trockman, **S. Zhou**, C. Kästner, and B. Vasilescu. In *Proceedings of the 40th International Conference on Software Engineering (ICSE)*, New York, NY: ACM Press, May 2018.
- **Elastic Resource Management for Heterogeneous Applications on PaaS**. H. Wei, **S. Zhou**, T. Yang, R. Zhang, Q. Wang. The Fifth Asia-Pacific Symposium on Internetware. (Internetware'13) Changsha, China, October 2013

Refereed Journal Articles

- **An Empirical Study of Emoji Use in Software Development Communication**. S. Rong, W. Wang, U. Mannan, E. Almeida, **S. Zhou**, I. Ahmed. *Information and Software Technology*, Volume 148, 2022.
- **Perceptions of Open-Source Software Developers on Collaborations: An Interview and Survey Study.** K. Constantino, **S. Zhou**, M. Souza, E. Figueiredo, and C. Kästner. *Journal of Software: Evolution and Process (JSME)*, 2021.

Refereed Short Publications

- **Elevating Jupyter Notebook Maintenance Tooling by Identifying and Extracting Notebook Structures.** Y. Jiang, C. Kästner, **S. Zhou.** *In Proceedings of the 38th International Conference on Software Maintenance and Evolution (ICSME) - NIER (New Ideas and Emerging Results) Track*, 2022.
- **Splitting, Renaming, Removing: A Study of Common Cleaning Activities in Jupyter Notebooks.** H. Dong, **S. Zhou,** J. Guo, and C. Kästner. *The 8th International Workshop on Realizing Artificial Intelligence Synergies in Software Engineering (RAISE)*, 2021.
- **An Exploratory Study to Find Motives behind Cross-platform Forks from Software Heritage Dataset.** A. Bhattacharjee, S. Nath, **S. Zhou**, D. Chakroborti, B. Roy, C. Roy, and K. Schneider. *In Proceedings of the 17th International Conference on Mining Software Repositories (MSR) - Mining Challenge Track*, 2020.
- **Improving Collaboration Efficiency in Fork-based Development. S. Zhou.** *In Proceedings of the Companion of the International Conference on Automated Software Engineering (ASE Doctoral Symposium)*, New York, NY: ACM Press, 2019.
- **Poster: Forks Insight: Providing an Overview of GitHub Forks**. L. Ren, **S. Zhou**, and C. Kästner. In *Proceedings of the Companion of the International Conference on Software Engineering (ICSE)*, New York, NY: ACM Press, 2018. Poster.
- **Extracting Configuration Knowledge from Build Files with Symbolic Analysis**. S. Zhou, J. Al-Kofahi, T. Nguyen, C. Kästner, and S. Nadi. In Proceedings of the 3rd International Workshop on Release Engineering (Releng), New York, NY: ACM Press, May 2015.

FORMAL PRESENTATIONS

- **Invited talk: Towards sustainable OSS communities.** NumFOCUS Project Summit, In-person, Sep 2022.
- **Invited talk: Improving Collaboration Efficiency for Building AI-based Software.** SMILE (Statistics and MachIne LEarning Journal Club, Department of Astronomy & Astrophysics, University of Toronto), Online, April 2022.
- **Invited talk: Improving Collaboration Efficiency for Building AI-based Software.** Perceive'21, Online, October 20-21, 2021
- **Invited talk: Improving Collaboration Efficiency for Distributed and Interdisciplinary Software Teams.** Consortium for Software Engineering Research 2020 Fall Meeting (CSER'20)
- **Invited talk: Improving Collaboration Efficiency for Software Development.** Peking University, Rochester Institute of Technology, Stevens Institute of Technology, University of Illinois Urbana-Champaign, Oregon State University, Drexel University, George Mason University, Stony Brook University, University of British Columbia, University of Toronto, University of Texas at Austin. Dec 2019 – Apr 2020
- **Versioning ML Models & Data in Time and Space.** Dagstuhl Seminar 19191, Software Evolution in Time and Space: Unifying Version and Variability Management, Wadern, Germany, May 2019
- **Extracting Configuration Knowledge from Build Files with Symbolic Analysis.** Feature-Oriented Software Development (FOSD) Meeting, Traunkirchen, Austria, May 2015
- **Identifying Features from Forks.** Feature-Oriented Software Development (FOSD) Meeting, Copenhagen, Denmark, May 2016
- **Evaluating INOX (Identifying Features in Forks**). Feature-Oriented Software Development (FOSD) Meeting, Grasellenbach, Germany, March, 2017
- **Identifying redundancies in Fork-based Development.** Feature-Oriented Software Development (FOSD) Meeting, Gothenburg, Sweden, June, 2018

PROFESSIONAL SERVICES

- **Program Committee** for ICSE2023, ASE2022, FSE2022, ICSE2022-Poster, ACMwomENcourage2021-Posters, FSE2021-Student Research Competition, VariVolution 2020 Workshop
- **Co-Chair** for Consortium for Software Engineering Research (CSER) Fall 2021 Meeting
- **Reviewer** for TOSEM Board of Distinguished Reviewers (2021, 2022), TSE (2019, 2020, 2021), CSCW2022, EMSE(2021), Journal of Systems & Software (2021), Journal of Software (2021), IST 2020
- **Grant External Reviewer** for NSERC Discovery 2021
- **Organization Committee** for FOSD (Feature-Oriented Software Development) 2018 Meeting
- **Sub-Reviewer** for ICSE (2017, 2018, 2020), FSE (2017, 2019), ASE (2015, 2017, 2019, 2020), SPLC (2016, 2017), VAMOS 2017, and TSE 2015

GRANT & AWAREDS

- NumFOCUS Research Fund 2022
- CFI-JELF Grant 2021-2024
- IBM CAS Fellowship 2021-2023
- NSERC Discovery Grant Early Career Researcher 2021
- NSERC Discovery Grant 2021-2026
- CARET Seed Award from Faculty of Applied Science & Engineering at University of Toronto 2021
- NSF Student Travel Grant 2019
- NSF Student Travel Grant 2018
- Outstanding Student (Top 5%) from PKU 2012
- Scholarship of May 4th (Top 5%) from PKU 2012
- Excellent Graduation Thesis from Xi'an Jiaotong University (Top 1%) 2011
- Excellent Student Leader Award of Xi'an Jiaotong University (Top 5%) 2010
- Best Student Award from Xi'an Jiaotong University (5%) 2009, 2008
- Siyuan Scholarship from Xi'an Jiaotong University (10%) 2010, 2009, 2008

STUDENTS SUPERVISED

Ph.D. Students (University of Toronto)

- Rohith Pudari, ECE 2022-Present
- Jiayi Sun, ECE 2021-Present

MASc (Master of Applied Science) Students

- Arjun Sridharkumar, ECE 2021-2023
- Enmeng Liu, ECE 2022-2024
- Kathy Cheng, MIE (co-supervised with Prof. Alison Olechowski) 2021-2023

MScAC (Master of Science in Applied Computing), Department of Computer Science

- Yash Prakash 2022
- Haoxuan Shi 2022
- Yuxiao Sun 2022
- Ao Tang 2021
- Kexin Yan 2021

Undergraduate Thesis Students (University of Toronto)

- Tina Yang 2022
- Yee Man Choi 2021-2022
- Steven Xia (now PhD at UIUC) 2020-2021
- Andy Zhou 2020-2021
- Sophie Zou 2020-2021

Undergraduate Research Intern (University of Toronto)

- Phil Cuvin (co-supervised with Prof. Alison Olechowski) 2022 Summer
- Quanming Wang 2022 Summer
- Minghao Li 2022
- Xinyan He 2022
- Youhai Li 2022
- Tianyu Zhang 2022
- Chan Yang 2022-2023
- Chuyun Shen 2022 Summer
- Robert Ren 2022 Summer
- Shutong Zhang 2022-2023
- Jasmine Zhang 2021 Summer
- Tiffany Yeh 2021-2022
- Sophie Kim 2021 Summer

- Jimmy Yang (now PhD at UCLA) 2021 Summer
- Willis Guo 2021 Summer
- Hamza Dugmag 2021 Summer
- Vicky Xu 2021 Summer
- Zihan Chen 2021 Summer
- Nilofer Hyder 2021 Summer
- Jiachen Meng 2020-2021

Undergraduate Students (Carnegie Mellon University)

- Chenyang Yang (now PhD at CMU) 2020-2021
- Helen Dong 2020 Summer
- Isabel Gan 2020 Summer
- Yuan (Cindy) Jiang (now Master at CMU) 2020-2022
- Jerry Lu 2020 Summer
- Mark Chen 2020 Summer
- Luyao Ren, now PhD at PKU 2019-2020
- Annika Esau 2020 Summer
- Avijit Bhattacharjee (Undergrad at U of Saskatchewan) 2019-2020
- Min Wang (PhD at Peking University) 2019-2021