

Yang Chen

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📄 <https://yangc9.github.io>

Research Interests

My research interests lie at the intersection of software engineering and AI, including (1) **integrating static analysis with LLMs to tackle real-world challenges**, such as **flaky test repair** and **SWE issue repair**; (2) **synthetic data generation**, such as evaluating flakiness detection tools and **benchmarking LLMs**. I also study LLM **code reasoning**. Prior research projects have equipped me with skills and experience in *neurosymbolic program analysis*, *genetic algorithms* and *LLM fine-tuning*, as well as software testing including flaky tests detection & repair (accumulating to 139 accepted patches in real-world projects), *mutation testing*, and *test suite minimization*. My ongoing research focuses on building **agentic systems** that integrate software engineering knowledge.

Education

- 2022-Present **University of Illinois Urbana-Champaign (USA)**.
Ph.D. Candidate in Computer Science
Co-advisors: [Darko Marinov](#) and [Reyhaneh Jabbarvand](#)
- 2018–2022 **Huazhong University of Science and Technology (China)**.
B.Sc. in Computer Science

Publications

- [1] ICSE 2026 **Assessing Coherency and Consistency of Code Execution Reasoning by LLMs**.
Changshu Liu, Yang Chen, and Reyhaneh Jabbarvand.
- [2] ICSE-FTW 2025 **A Preliminary Study of Fixed Flaky Tests in Rust Projects on GitHub**.
Tom Schroeder, Minh Phan, and Yang Chen.
Flaky Test Workshop in Proceedings of the 47th International Conference on Software Engineering. Ottawa, Canada. April 2025.
- [3] ISSTA 2024 **Neurosymbolic Repair of Test Flakiness**.
Yang Chen and Reyhaneh Jabbarvand.
The 33rd ACM SIGSOFT International Symposium on Software Testing and Analysis. Vienna, Austria. September 2024.
- [4] ICSE-FTW 2024 **Can ChatGPT Repair Non-Order-Dependent Flaky Tests?**.
Yang Chen and Reyhaneh Jabbarvand.
Flaky Test Workshop in Proceedings of the 46th International Conference on Software Engineering. Lisbon, Portugal. April 2024.
- [5] ICSE -Companion 2024 **Flakiness Repair in the Era of Large Language Models**.
Yang Chen.
[2nd Place in Student Research Competition] Proceedings of the 46th International Conference on Software Engineering, Lisbon, Portugal. April 2024.
- [6] ISSTA 2023 **Transforming Test Suites into Croissants**.
Yang Chen, Alperen Yildiz, Darko Marinov, and Reyhaneh Jabbarvand.
Proceedings of the 32nd ACM SIGSOFT International Symposium on Software Testing and Analysis, Seattle, USA. July 2023.

- [7] preprint **Automated Bug Generation in the Era of Large Language Models.**
Ali Reza Ibrahimzada, [Yang Chen](#), Ryan Rong, and Reyhaneh Jabbarvand.
- [8] **Benchmarking Generalizability of LLMs.**
Under Review [Yang Chen](#), Shuyang Liu, and Reyhaneh Jabbarvand.
- [9] **Process-Centric Analysis of Agentic Software Systems.**
Under Review Shuyang Liu, [Yang Chen](#), Rahul Krishna, Saurabh Sinha, and Reyhaneh Jabbarvand.
- [10] **Enhancing SWE Issue Repair with Regression Tests.**
Under Review [Yang Chen](#), Toufique Ahmed, Reyhaneh Jabbarvand, and Martin Hirzel.
- [11] **Evaluating Code Reasoning Abilities of Large Language Models Under Real-World Settings.**
Under Review Changshu Liu, Alireza Ghazanfari, [Yang Chen](#), and Reyhaneh Jabbarvand.
- [12] **Can Large Language Models Reason About Code?.**
Under Review Changshu Liu, Shizhuo Zhang, [Yang Chen](#), and Reyhaneh Jabbarvand.
- [13] ICSE-Demo 2022 **iPFlakies: A Framework for Detecting and Fixing Python Order-Dependent Flaky Tests.**
Ruixin Wang, [Yang Chen](#), and Wing Lam.
Demonstration Track, Proceedings of the 44th International Conference on Software Engineering, Pittsburgh, USA. May 2022.

Experience

- 2025 **IBM Research Scientist Intern**, *IBM Research, NY*.
- May – Aug Manager & Mentor: [Martin Hirzel](#) and [Toufique Ahmed](#).

Selected Honors and Grants

- 2024 Ranked 2nd in the 46th ACM Student Research Competition at ICSE 2024.
- 2023 SIGSOFT CAPS Grants for ISSTA 2023, ICSE 2024, and ISSTA 2024.
- 2022 Outstanding Graduate of Class 2022, Huazhong University of Science and Technology.

Academic Service

Reviewer: MSR 2024, TOSEM 2025.

Artifact Evaluation PC: ISSTA 2024, ISSTA 2025.

Research Track PC: MSR 2024.