Yiwen Dong

University of Waterloo, Waterloo, ON N2L3G1 • (226) 507-8135 • yiwen.dong.98@gmail.com • yiwendong.com

RESEARCH INTERESTS

My research interest lies at the intersection of Software Engineering and Programming languages. I believe that tools should make software development more accessible and less error-prone. To that end, I have examined many real-world software bugs and worked on tools that improve the reliability of code.

EDUCATION

University of Waterloo, Waterloo, ON — September 2019 - Present
Faculty of Mathematics
PhD Candidate in Computer Science - Advisor: Chengnian Sun

Northeastern University, Boston, MA — September 2016 - December 2018
College of Computer and Information Science
Bachelor of Science in Computer Science (GPA: 3.9/4.0)

Honors: Dean's List

Related Courses: Networks and Distributed Systems, Programming Languages (Masters), Web Development, Database Design, Computer Systems (Masters), Software Development, Algorithms (Masters), Object-Oriented Design, Embedded Design: Enabling Robotics

PUBLICATIONS

5. Yongqiang Tian, Xueyan Zhang, Yiwen Dong, Zhenyang Xu, Mengxiao Zhang, Yu Jiang, Shing-Chi Cheung, and Chengnian Sun. 2023. **On the Caching Schemes to Speed Up Program Reduction**. *ACM Trans. Softw. Eng. Methodol.* Just Accepted (September 2023). doi: 10.1145/3617172
4. Yongqiang Tian, Zhenyang Xu, Yiwen Dong, Chengnian Sun, and Shing-Chi Cheung. 2023. **Revisiting the Evaluation of Deep Learning-Based Compiler Testing**. In *Proceedings of the Thirty-Second International Joint Conference on Artificial Intelligence, IJCAI-23*, International Joint Conferences on Artificial Intelligence Organization, 4873–4882. doi: 10.24963/ijcai.2023/542.
3. Theodore Luo Wang, Yongqiang Tian, Yiwen Dong, Zhenyang Xu, and Chengnian Sun. 2023. **Compilation Consistency Modulo Debug Information**. In *Proceedings of the 28th ACM International Conference on Architectural Support for Programming Languages and Operating Systems*, Volume 2 (*ASPLOS 2023*). Association for Computing Machinery, New York, NY, USA, 146–158, doi: 10.1145/3575693.3575740.
2. Yiwen Dong, Tianxiao Gu, Yongqiang Tian and Chengnian Sun, **SnR: Constraint-Based Type Inference for Incomplete Java Code Snippets**, *2022 IEEE/ACM 44th International Conference on Software Engineering (ICSE)*, 2022, pp. 1982-1993, doi: 10.1145/3510003.3510061.
1. Yiwen Dong, Zheyang Li, Yongqiang Tian, Chengnian Sun, Michael W. Godfrey, and Meiyappan Nagappan. 2023. **Bash in the Wild: Language Usage, Code Smells, and Bugs**. *ACM Trans. Softw. Eng. Methodol. 32, 1, Article 8 (January 2023), 22 pages*, doi: 10.1145/3517193.

TALKS

Bash in the Wild: Language Usage, Code Smells, and Bugs. 2023 IEEE/ACM 45th International Conference on Software Engineering (ICSE), Melbourne Australia, May 2023.

SnR: Constraint-Based Type Inference for Incomplete Java Code Snippets. 2022 IEEE/ACM 44th International Conference on Software Engineering (ICSE), Online, May 2022.

TEACHING EXPERIENCE

University of Waterloo, Teaching Assistant

CS 346 – Application Development	Fall 2023
CS 446 – Software Design and Architectures	Spring 2023, 2022, 2021, 2020
SE 465 – Software Testing and Quality Assurance	Winter 2023, 2022, 2021, 2020
CS 246 – Object-Oriented Software Development	Fall 2021, 2020
CS 135 – Designing Functional Programs	Fall 2019

TECHNICAL KNOWLEDGE

Languages

- Java, Python, JavaScript, C, C++, Datalog, Racket, MySQL, Verilog, Latex

Frameworks

- Spring 4, Hibernate 4, React, jQuery, JUnit, Maven, node.js, Express, MongoDB, JSP, Tomcat

OTHER PROJECTS

Recumbent Bike Fall 2017-Winter 2019

- Lead a team of engineers designing and building a recumbent trike for young boy with disability, customized to fit his needs.

QEMU Live Migration Improvement Spring 2018

- Implemented faster live migration method for memory-heavy virtual machines than QEMU default implementation by optimizing hot spots.

CS 2510 Code Documentation Generator Spring 2017

- Developed Eclipse plugin for generating custom code documentation automatically.

Traffic Visualization Fall 2016

- Created visualization on top of Google Maps with construction, accident, and congestion data scraped from online sources for the Boston area.