

Yanze Li

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RESEARCH INTERESTS

My area of interest is **Programming Language**. I enjoy doing research related to functional programming, program verification, type system and static analysis, etc. I believe the future programming languages will be more expressive to enable programmers to specify important properties and even synthesis implementation automatically. My goal is to applying PL techniques to facilitate programming productivity and software correctness.

EDUCATION

- M.S. Computer Science, Texas A&M University, 2020
Thesis: Efficient and Scalable Whole Program Race Detection for Java and Android Programs
Advisor: Jeff Huang
GPA: 4.0/4.0
- B.Eng. Electrical Engineering, Huazhong University of Science and Technology, 2017
GPA: 3.67/4.0 Major GPA: 3.81/4.0

PUBLICATIONS

- SC'20 “OMPRacer: A Scalable and Precise Static Race Detector for OpenMP Programs”
Bradley Swain, **Yanze Li**, Peiming Liu, Ignacio Laguna, Giorgis Georgakoudis, Jeff Huang
- ICSE'19 (Demo Track) “SWORD: A Scalable Whole Program Race Detector for Java”
Yanze Li, Bozhen Liu, Jeff Huang

RESEARCH EXPERIENCE

- 2020.8- **Research Intern, Utrecht University, Netherland**
Working with Dr. Jurriaan Hage on Helium compiler. Implementing its LLVM backend, FFI and module system.
- 2018.6- **Research Assistant, Texas A&M University, USA**
2020.6 Working on static analysis for concurrent program. Developed tools that scale to million lines of Java/C++/Android programs and efficiently detect potential data races and deadlocks.

WORK EXPERIENCE

- 2019.7- **Software Engineer, Coderrect Inc., USA**
Working as the main developer of an LLVM-based program analysis tool for detecting concurrency bugs and anti-patterns in C/C++/Fortran/CUDA code. I've designed a highly efficient static happens-before graph, lock tracking algorithm and race detection algorithm which enable the tool to analyze million lines of code in minutes accurately.
- 2015-2017 **Software Engineer, Nightingale Technology, China**
Working on a second-hand commodities trading platform for college students and an integrated web application for editing and publishing news articles as well as managing and visualizing their statistics.

PROJECTS

- Helium** (Ongoing) A compiler for a subset of Haskell that aims at delivering high quality type error messages particularly for beginner programmers. It also includes facilities for specializing type error diagnosis for embedded domain specific languages.
- LLVMRace** (Ongoing) An LLVM-based race detection framework, found several previously unknown bugs in Linux kernel, Redis, memcached, and GraphBLAS.
- OMPRacer** An LLVM-based race detector for OpenMP programs, using the SMT solver and value-flow analysis to reason about interprocedural array accesses.
Found several previously unknown bug in ECP proxy applications and covid-sim (the simulation program for COVID-19).
- Crappie** An incremental race detection engine that scales to distributed systems and Android apps and has been implemented as a IntelliJ IDEA plugin.
- SWORD** A whole program race detector for Java (source code/bytecode) and has been implemented as a Eclipse plugin.

HONOR AND AWARDS

- 2019 ACM SIGSOFT CAPS Award
- 2017 Excellent Graduated Student at HUST
- 2015 Scientific Research Innovation Scholarship
- 2014 3rd Place, China University Cloud Computing Innovation Competition

SERVICE

Sub-Reviewer

- 2020 OOPSLA
- 2019 PLDI, ICSE, FSE, OOPSLA
- 2018 TSE