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 Enigneer, 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 unkown bugs in Linux kernel, Redis, memcached, and GraphBLAS.

OMPRacer An LLVM-based race detector for OpenMP programs, using the SMT sovler and value-flow analysis to reason about interprocedure 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