

## Education

### **Pennsylvania State University (PSU)**

Informatics, PhD

Aug. 2019 - Present

Advisor: Dr. Linhai Song

(Note: major changed from Nuclear Engineering)

Nuclear Engineering, PhD

Aug. 2018 - May. 2019

### **University of Science and Technology of China (USTC)**

Bachelor of Engineering

Sep. 2014 - June. 2018

## Academic Projects

### **Pennsylvania State University (PSU)**

Dynamic Detection and Testing of Go Concurrency Bugs Aug. 2020 - Present

- Invented a unique oracle to detect channel-related concurrency bugs
- Implementing a test scheduler designed for message-passing concurrency

### **Pennsylvania State University (PSU) and ByteDance AI Lab**

Static Detection and Fixing of Go Concurrency Bugs May. 2019 - Aug. 2020

- Presented a static detection tool and a fixing tool for concurrency bugs in Go
- Found 276 new bugs in popular Go projects, including 223 bugs fixed or confirmed
- Contributing to bug fixing for Docker, Kubernetes, Golang, etcd, etc.

### **Pennsylvania State University (PSU)**

Algorithm Profiling For Real-world Complexity Problems Sep. 2018 - Feb. 2019

- Developed an algorithm to infer the complexity for a code region
- Reproduced real-world performance bugs from MySQL, Mozilla, Apache, etc.

## Publications

Automatically Detecting and Fixing Concurrency Bugs in Go Software Systems

Ziheng Liu, Shuofei Zhu, Boqin Qin, Hao Chen, Linhai Song

(Accepted by ASPLOS'21)

Algorithmic Profiling for Real-world Complexity Problems

Boqin Qin, Tengfei Tu, Ziheng Liu, Tingting Yu, Linhai Song

(Under major revision of TSE)

## Programming Languages

**Go; Python; C; Matlab; Rust**