Yahui Sun

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EDUCATION

Texas A&M University (TAMU), College Station, TX — Aug 2018 – Present
Ph.D. Student in Computer Science. 4.0/4.0 GPA. — Advisor: Prof. Jeff Huang

Wuhan University (WHU), Wuhan, China — Sep 2014 – June 2018
B.Sc. in Computer Science.

EXPERIENCE

Research Intern, **Microsoft**, Redmond, WA (Remote) — June 2020 - Sep 2020

- Working on the Checked C project with Mandeep Singh Grang and Dr. David Tarditi.

Research Assistant, **Texas A&M University**, College Station, TX — Aug 2018 – Present

- Developing a tool to find high-level race conditions in Go programs. The tool has found 3 race conditions in Kubernetes, all of which have been confirmed and fixed by the developers.
- Designed a new algorithm to detect a type of security vulnerabilities called concurrency use-after-free (UAF) in modern browsers such as Chromium and Firefox. Implemented the algorithm into a tool called CUSAN, which is based on LLVM TSAN. CUSAN can detect more concurrency UAF errors at runtime than state-of-the-art techniques on large systems such as Chromium, and achieved **10X-62X speedup** compared with SMT based techniques.
- Implemented a model checker NCMC that utilizes a semantic commutativity equivalence class that is exponentially coarser than Mazurkiewicz traces. Using an SMT solver as backend, NCMC yields exponential speedup in Java benchmarks compared to state-of-the-art techniques.

Software Engineer Intern, **Eyepetizer**, Beijing, China — Dec 2017 – Apr 2018

- Developed a web service (webpy, redis, Docker) for automatically generating customizable Wechat mini-apps for short video content providers who lack technology background, which was used by **over 100** short video platforms providing user-generated content in the first two months.
- Developed the backend APIs (webpy, Java Spring) for online configuring and monitoring the generated Wechat mini-apps, with an admin UI page used internally by the operational team.
- Rewrote the official Eyepetizer Wechat mini app and developed the Wechat app templates for third-party content providers.

Software Engineer Intern, **Baidu**, Beijing, China — July 2017 – Sep 2017

- Worked in the Growth Hacker team. Developed the frontend and backend (PHP) for displaying information aggregation cards in Baidu's search result pages, with **800K daily visits**.
- Developed an A/B test log processing pipeline for the Growth Hacker products in AWK and Python, deployed on Hadoop. Improved the log processing speed by up to **71%**.

SPECIALTIES

Languages: C++, Go, C, Python, Javascript, Java, Bash, Ruby, Lisp, AWK, PHP
Tools: Git, LLVM, Z3, libFuzzer, CBMC, Docker
Web Development: VueJS, AngularJS, Webpy, D3, Webpack, Redis, Java Spring, AWS
Misc: Inter-thread Synchronization, Lock-free Algorithms, Weak Memory Consistency

TEACHING AND SERVICE

Teaching Assistant for Data Structure and Algorithms, TAMU — Fall 2019
Teaching Assistant for Compilers, WHU — Spring 2017
Artifact Evaluation Committee Member, PLDI 2019
Sub-reviewer: FSE 2020, PPoPP 2020, ICSE 2019, PLDI 2019, FSE 2019, OOPSLA 2019