

Haonan Li

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Citizenship: China

Education

Southern University of Science and Technology (SUSTech)

Shenzhen, Guangdong

B.Eng in Computer Science

Sep. 2017 – Jun. 2021

Mentor: Professor Fengwei Zhang. *GPA: 3.66.*

Publications

A Novel Memory Management for RISC-V Enclaves

Haonan Li, Weijie Huang, Mingde Ren, Hongyi Lu, Zhenyu Ning, Heming Cui, and Fengwei Zhang.

In Proceedings of the Hardware and Architectural Support for Security and Privacy (HASP'21), October, 2021

Research experience

Using Hardware Features for Failure Diagnosis on Arm

Mentors: Fengwei Zhang, Zhenyu Ning

Dec. 2020 – Jun. 2021

(I guess it eventually) In submission to ASE'22, Second Author

We implement a failure diagnosis framework for practical systems based on Arm. At runtime, it leverages the hardware tracing component ETM and a lightweight event capturer to collect information. Then it identifies the control and data flow related to the cause of a failure, which further helps developers in bug fixing.

In this project, I was involved in architecture design. I also took responsibility for the design and development of the online part, which mainly includes the capture of non-deterministic events and hooks for library functions.

Towards Flexible and Modular Enclave Architecture

Mentors: Fengwei Zhang, Zhenyu Ning

Jun. 2021 – Present

(We are writing the paper but) TBD'22/23, First Author

We attempt to design a software based Trusted Execution Environment (TEE) in RISC-V that offers comparable security to hardware-assist TEE and decoupled functional modules. Besides, without any particular SDK or hardware implementation, it would become super easy to use.

I lead this work and am also involved in architecture design, code implementation, evaluation, paper writing, and most importantly, to let my team keep working.

Course project

Online Judge System ([Github](#))

Sep. 2019 – Dec. 2019

An online code submission and judge system that can support distributed judging nodes. I led the design and development of the entire project. This system supported the 2019 SUSTech Programming Competition with thousands of participants.

Hacking SUSTech Printing System

Sep. 2019 – Dec. 2019

We found some unauthenticated APIs between the printer controller and the central server. So we can masquerade as a legitimate printer controller in order to eavesdrop on other users' files. In addition, we found its page count algorithm actually implemented locally. Accordingly, we inspected its memory usage and achieved free printing.

Work experience

SUSTech, Compass Lab

Shenzhen

Research Assistant

Jul. 2021 – Present

Responsible for scientific research in the field of computer system security and assist in undergraduate/graduate students scientific research training.

Tencent, CDG (Corporate Development Group)

Shenzhen

Operations Development Engineer (internship)

Summer 2020

Responsible for the development and maintenance of some existing operation platforms, developed a new system to assist in status checking and reporting on thousands of servers.

Honors

The 2019 ICPC Asia Nanchang Regional Contest Bronze Medal 2019

The 2019 ICPC Asia Hong Kong Regional Contest Bronze Medal 2019