

Wenxuan Shi

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Education

Shenzhen, China

Southern University of Science and Technology

09/2018–06/2022

- Bachelor in Computer Science and Engineering (CSE)
GPA: 3.79/4, Average Score: 91/100, Rank: 23/156
- Advisor: Prof. Fengwei Zhang

Singapore

National University of Singapore

08/2021–12/2021

- Visiting student in School of Computing, NGNE Research Program
- Advisor: Prof. Zhenkai Liang

Research Experiences

A Practical Failure Diagnosis Framework via Arm Hardware Features

02/2021–08/2021

- COMPASS Research Group
Under supervision of Fengwei Zhang and Zhenyu Ning
- An analysis system that can be used for long-term operation, utilizing hardware features to track program execution online and analyze data flow in an offline phase.
- *As a co-author, our paper is in submission to OSDI'22.*

Transparent Tracing and Debugging on Arm

09/2020–12/2020

- COMPASS Research Group
Under supervision of Fengwei Zhang and Zhenyu Ning
- Combining Arm TrustZone and some hardware components to provide a transparent tracing and debugging environment for security analysers.

Hardware-assisted Concurrent Bugs Detection

08/2021–06/2022

- Curiosity Research Group
Under supervision of Zhenkai Liang and Fengwei Zhang

Course Projects

- **MALLOC: Memory Allocation Leakage Live Observer and Capturer**
“CS302 Operating System” Monitoring the memory allocation and usage of arbitrary processes and threads in Linux by runtime interpositioning, dynamic code instrumentation, and memory permission trapping.
- **Reliable Data Transport**
“CS305 Computer Networking” Implement a self-defined protocol based on UDP providing reliable and secure data transport. The project focus on data integrity, congestion control, and error tolerance.
- **Docker Escape**
“CS315 Computer Security” Escape from the preset limitations of containerisation like limitations between containers and limitations between container and host; resource limitations like CPU cores, memory usage, and the number of derived process numbers.

Teaching Experiences

Southern University of Science and Technology

Teaching Assistant

02/2021–06/2021

- Assisted in teaching the course *Introduction to Computer Programming A*.

Honors & Awards

- 2019 ICPC Asia Yinchuan Regional Contest Silver Medal
- 2019 ICPC Asia Nanjing Regional Contest Bronze Medal
- 2019 ASC Student Supercomputer Challenge Second Class Prize
- 2020 Mathematical Contest in Modeling Honorable Mention
- 2018,2019,2020,2021 Outstanding Student Scholarship (SUSTech)

Proficient Computer Languages

- C/C++, Rust, Python, Java/Kotlin, Swift

Standard Tests

- **TOEFL iBT Test:** 99
Reading:30, Listening:24, Speaking:24, Writing:21
- **GRE General Test:** 321
Verbal:152, Quantitative:169