

# Ruibo Lu

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## EDUCATION

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- 8.2022 - now      **Master of Cyber and Information Security** at HUST  
*Huazhong University of Science and Technology*  
*Advised by Dr. Wei Zhou GPA: 3.77*
- 9.2018 - 7.2022    **Bachelor of Network Engineering** at DUT  
*Dalian University of Technology*  
*GPA: 3.86*

## PUBLICATION

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Nino Nicolas\*, **Ruibo Lu\***, Wei Zhou, Kyu Hyung Lee, Ziming Zhao and Le Guan. “Unveiling IoT Security in Reality: A Firmware-Centric Journey.” USENIX Security Symposium (2024). **equally contribution**

Wei Zhou, **Ruibo Lu**. “Crash analysis method and device for Internet of Things Firmware.” Chinese Patent 2024,103,089,256

## PROJECT

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### FirmFlaw Static Vulnerability Analysis of Real-World IoT Firmwares

- **Function similarity** generation over millions of binary functions database
- **N-days vulnerability** detection based on similarity result
- Hardware mitigation detection

### FirmAna Low-Cost In-Field Crash Replay and Analysis for IoT Firmwares

- High fidelity crash replay based on **symbolic execution** and **static analysis**
- Root cause analysis based on **symbolic execution**
- First author **Under Review by Usenix Security 25**

### QEMU-RVP/K RISC-V Crypto Extension in QEMU

- Implementation of crypto algorithms in QEMU
- **Accepted by community**

### XiangEmu performance simulator for RISC-V core

- Implementation of Frontend, Backend, MemBlock, Cache(in progress), etc.
- Cycle accuracy compared with Hardware

## SKILLS

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- Dynamic Analysis: **symbolic execution**, dynamic taint analysis, address sanitizer etc.
- Static Analysis: control flow and data flow analysis based on **Ghidra**(expert)
- Languages: C/C++(most used), python, java, rust