Zihan (Tomson) Li

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EDUCATION

DePauw University
Greencastle, IN
Bachelor of Arts
Aug. 2017 – May 2020

Washington University in St. Louis
St. Louis, MO
Bachelor of Science in Computer Engineering, Master of Science in Cybersecurity Engineering
Aug. 2020 – May 2023

Washington University in St. Louis
St. Louis, MO
Doctor of Philosophy in Computer Science
Aug. 2023 – Present (Anticipated 2028)

EXPERIENCE

Graduate Research Assistant
May 2022 – Present
Washington University in St. Louis
St. Louis, MO

- Advisor: Dr. Ning Zhang
- Current research focuses on the real-time analysis/study of real-time cyber-physical systems as well as differential privacy protection on geolocation
- Conducted IoT devices firmware update pipeline study
- Developed experimental Linux scheduler enforcer for better performance
- Performed sensitive analysis on Linux perf counters
- Experimental fuzzing on open-source QUIC implementations

C++ Backend Development Intern
July 2020 – Sept. 2020
Youme.im
Shenzhen, China

- Developed an end-to-end encryption module for audio and video real-time communication

PROJECTS

RichArduino V4 | *VHDL, Assembly, Python, Circuit Design*
January 2022 – May 2022

- Designed and implemented I^2C module and XADC wrapper for our FPGA-based microcontroller system
- Implemented a RISC-based assembly bootloader for the microcontroller
- Developed a Python GUI-based UART serial connection software for debugging and uploading assembly program
- Designed an RC circuit and soldered components on the PCB shield

PUBLICATIONS

Your Firmware Has Arrived: A Study of Firmware Update Vulnerabilities
USENIX Security '24
Yuhao Wu, Jinwen Wang, Yujie Wang, Shixuan Zhai, **Zihan Li**, Yi He, Kun Sun, Qi Li, Ning Zhang

Work-in-Progress: Measuring Security Protection in Real-time Embedded Firmware
2022 IEEE Real-Time Systems Symposium (RTSS)
Yuhao Wu, Yujie Wang, Shixuan Zhai, **Zihan Li**, Ao Li, Jinwen Wang, Ning Zhang

HONOR AWARDS

2022 Dean's Select PhD Fellowship
Washington University in St. Louis

Nominated for the 2022 Dean's Select PhD Fellowship at Washington University in St. Louis.

SERVICES

Reviwer

- IEEE Transactions on Information Forensics and Security
- IEEE/ACM Transactions on Networking
- ISOC Symposium on Vehicle Security and Privacy (VehicleSec '24)

Technical Skills

Languages: C/C++, Python, Java, JavaScript, HTML/CSS, VHDL, Assembly, SQL, PHP
Frameworks: React, Node.js
Developer Tools: Git, Cmake, Docker, VS Code, Visual Studio, Eclipse, Wireshark, Xcode, Ghidra
Libraries: pandas, NumPy, Matplotlib, Tkinter