

## EDUCATION

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| <b>University at Buffalo</b><br>Ph.D. in Computer Science and Engineering, GPA: 3.91/4.00<br>– Advisor: Prof. Ziming Zhao<br>– Research Area: System Security | NY, U.S.<br>2021–Current   |
| <b>University at Buffalo</b><br>M.S. in Engineering Science (Robotics), GPA: 3.89/4.00  | NY, U.S.<br>2019–2021      |
| <b>Fuzhou University</b><br>B.E. in Software Engineering  | Fujian, China<br>2015–2019 |

## RESEARCH TOPICS

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| <b>System security with a focus on embedded systems</b><br>Cortex-M Systematization of Knowledge<br>– This research provides an overview of the security landscape of Arm Cortex-M microcontroller-based systems, analyzing hardware security limitations and issues, conducting a deep study of the software stack, categorizing reported implementation issues, and systematizing efforts to secure Cortex-M systems.<br>– <i>Submitted to IEEE S&amp;P 2023</i> | 2021–Current |
| <b>Cortex-M Return to Non-Secure World Attack</b><br>– This research presents a new attack vector on Cortex-M TrustZone, ret2ns, which exploits the return from a secure state to a non-secure state to escalate privilege and execute arbitrary code, and proposes two mechanisms to mitigate the attack.<br>– <i>Accepted at DAC 2023</i>  |              |

## EXPERIENCE

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| <b>University at Buffalo</b><br>CyberTruck Challenge 2022 Participant<br>Team member of Cacti for MITRE eCTF 2022 (5th place)<br>Team member of Cacti for Baidu AutoDriving CTF (6th place)<br>CSE573 Computer Vision and Image Processing Group Project<br>– Visual Welcome Center, <i>Group Leader</i><br>– In this project, we developed an interface to interact with visitors to the CSE department. The system has features of real-time facial recognition, background database and business card OCR reader. The project was written in Python. | NY, U.S.<br>Summer 2022<br>Spring 2022<br>Summer 2021<br>Spring 2020 |
| <b>MAE593 Robotics I Group Project</b><br>– FANUC Robot Manipulator, <i>Group Member</i><br>– In this project, we used a FANUC Robot LR Mate 200iD Robot as the base model, and derived the corresponding robotics dynamic equations from the physical parameters. The calculation was done in Matlab.  | Fall 2020  |

- Robot Vacuum Cleaner Simulation, *Group Leader*
- In this project we simulated a robot cleaner with laser sensor in ROS and implemented some path planning algorithm to build the room map. The goal is to construct the shortest comprehensive motion path.

**Fuzhou University**

Fujian, China

## Graduation Thesis

Spring 2019

- Spam Message Machine Learning Classification Model Based on TensorFlow and NLP Technology
- The subject mainly applies machine learning classification models such as support vector machine, naive Bayes and word embedded NN neural network, and fits the source training data after training through NLP algorithm.

**West2Online** - A student operated software outsourcing studio

Fujian, China

## Formal Member / iOS Developer

2016–2019

- Ctrl-Ctrl App Development, *Founder and Group Leader*
- Awarded 1st Prize in Software Design Innovation and Entrepreneurship Competition, Fuzhou U & Jiangsu Shidadime Data Processing Company
- Launch a business plan: to equip unused mobile phones with multi-functions (cloud storage, remote monitoring, signal transferring and etc.)
- FZUHelper App Development, *Group Member*
- Accessible in iOS App Store
- Responsible for the development and maintenance

## INTERNSHIP

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**State Grid Corporation of China**

Shanxi, China

## Network Test Assistant

Jan 2016–Feb 2016

- Assisted with network set-up in Intelligent Meter Cabinet facilities
- Install new hardware or software systems or components, ensuring integration with existing network systems. Configure wide area network (WAN) or local area network (LAN) routers or related equipment.

## PROGRAMMING SKILLS

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- **Programming Languages:**  
Python, C, C++, Java, MATLAB, LaTeX, etc.

## EXTRACURRICULAR ACTIVITIES

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- Teaching Assistant 2021–Current  
*for UB CSE 4/589: Modern Networking Concepts*
- Member of West2Online 2016–2019  
*participated in development outsourcing projects*
- Technical Consultant at Fuzhou University Yiban Service Center 2016–2017  
*deal with computer problems and teach employees computer skills*
- Member at Student Associations in Fuzhou University 2015–2016  
*video-maker in the Network Department*