Ruizhe Wang

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EDUCATION

University of Wisconsin-Madison
B.S. in Computer Sciences (honor) and Mathematics. ***GPA: 4.0/4.0*** *Sep 19 - Dec 21*
- **Advisor**: Earlence Fernandes

Beijing Institute of Technology
B.Engr. in The Internet of Things Engineering (honor) ***GPA: 91.5/100 (1/31)*** *Sep 17 - Jun 19*

RELEVANT EXPERIENCES

Research Assistant, UW-Madison Security and Privacy (Mad S&P) *Nov 19 – present*
- Conduct research in the Cyber Physical System Security.

Software Development Engineer Intern, Last Mile Team, Amazon LLC. *May 20 – Aug 20*
- Co-Implemented a serverless application to increase Amazon package delivery efficiency by automatically providing rescue plans for delayed packages using Typescript and Java.
- Deployed the application on AWS and created four RESTful APIs using Google Guice and AWS CDK
- Fully tested the service with Mockito and JUnit and created AWS Metrics dashboards and thresholds that can automatically fire alarms.

PUBLICATIONS

Yunang Chen, Amrita Roy Chowdhury, Ruizhe Wang, Andrei Sabelfeld, Rahul Chatterjee, and Earlence Fernandes. Data privacy in trigger-action iot systems. *IEEE Symposium on Security and Privacy (S&P) (Oakland)*, 2020.

Yuzhe Ma, Jon Sharp, Ruizhe Wang, Earlence Fernandes, and Xiaojin Zhu. Sequential attacks on kalman filter-based forward collision warning systems. *The Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI)*, 2020.

SELECTED RESEARCH PROJECTS

Black-Box Physical Attack on Smart Cameras *Dec 20 – present*
- Evaluate the Machine Learning Models and Motion Detectors of popular commercial smart cameras.
- Create a physical black-box attack to compromise these smart cameras to prevent detecting intruders and triggering intrusion alarms.

Adversarial Attacks on Kalman Filter Based Autopilot System *Apr 20 – Mar 21*
- Co-Proposed a Model Predictive Control algorithm to compute the optimization approach to compromise a Machine-Human Hybrid Forward Collision Warning System by causing the Kalman Filter give false state estimations.
- Evaluated the attack on CARLA driving simulator and designed two dangerous situation that could cause collisions after attack.

Data Privacy in Trigger-Action Platforms *Sep 19 – Apr 2020*
- Co-Proposed a protocol in Trigger-Action Platforms (TAPs) using Garbled Circuits that can avoid leaking sensitive information when the trigger or the platform is compromised.
- Evaluated the efficiency of the new protocol on the rules of popular commercial TAPS (IFTTT Zapier) using Python Flask. Showed that more than 90

HONORS & AWARDS

ACM ICPC NCNA Regional 4th position (4/90) *Feb 21*

CRA (Computing Research Association) Outstanding Undergraduate Researcher Awards Honorable Mention *Dec 20*

DeWitt Scholarship of Department of Computer Sciences, UW-Madison ($8000) *May 20*

Dean's List of College of L&S, UW-Madison *All Semesters*

First-Class Academic Excellence Scholarship of Beijing Institute of Technology (10%) *Oct 18*

3rd Place of Freshman Programming Contest at Beijing Institute of Technology (3/369) *Apr 18*

2nd Price in Lssec Techall Beijing Institute of Technology Programming Contest (10%) *Apr 17*

OTHER EXPERIENCES

External Reviewer, IEEE Internet of Things Journal *2021*

Volunteer Translator, Coursera *Mar 2020 – present*

Volunteer Instructor, Charity Primary School *Mar 2019 – Mar 2019*

MISCELLANEOUS

- **Languages**: Python, Java, C/C++, JavaScript/TypeScript, SQL, MATLAB, nesC
- **Frameworks/Tools**: Flask, PyTorch, Google Guice, React, Mockito, JUnit, Lombok
- **Relevant Courses**: Operation Systems, Computer Networks, Linear Optimization, Real Analysis, Topology, Information Security, Cryptography, Combinatorics, Numerical Algebra, Algorithms & Computing Theory