

RuiZhe Wang

 [ruiZhe-W.github.io](https://github.com/ruiZhe-W)

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EDUCATION

University of Wisconsin-Madison

B.S. in Computer Sciences (*honor*) and Mathematics; **GPA: 4.0/4.0**

Sep. 2019 - Dec. 2021

- Advisor: Earlence Fernandes

Beijing Institute of Technology

B.Engr. in The Internet of Things Engineering (*honor*); **GPA: 91.5/100 (1/31)**

Sep. 2017 - Jun. 2019

RELEVANT EXPERIENCES

Research Assistant, UW-Madison Security and Privacy (Mad S&P)

Nov. 2019 – Present

- Conduct research about the Cyber-Physical System (CPS) Security.

Software Development Engineer Intern, Last Mile, Amazon LLC.

May. 2020 – Aug. 2020

- 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.

External Reviewer, IEEE Internet of Things Journal (IoT-J)

2021

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 (Oakland)*, 2021.

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

Adversarial Attacks on Kalman Filter Based Autopilot System

Apr. 2020 – Mar. 2021

- 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. 2019 – 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% of the top-500 frequency rules are supported while the latency and throughput reduced less than 60%.

HONORS & AWARDS

CONTEST AWARDS

2021	4th Place (4/90) , ACM ICPC NCNA Regional Contest	<i>Madison, WI</i>
2018	3rd Place (3/369) , Freshman Programming Contest at BIT	<i>Beijing, China</i>
2017	2nd Prize (10%) , Lssec Techall BIT Programming Contest	<i>Beijing, China</i>

HONORS

2020	Honorable Mention , Computing Research Association (CRA) Outstanding Undergraduate Researcher Award	<i>Madison, WI</i>
2020	DeWitt Scholarship (\$8000) , Department of Computer Sciences, UW-Madison	<i>Madison, WI</i>
All Sems.	Dean's List , College of L&S, UW-Madison	<i>Madison, WI</i>
2018	First-Class Academic Excellence Scholarship (10%) , BIT	<i>Beijing, China</i>

OTHER EXPERIENCES

Volunteer Translator , Coursera	<i>Mar. 2020 – Present</i>
Volunteer Instructor , Charity Primary School	<i>Mar. 2019 – Mar. 2019</i>

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