Yingao (Elaine) Yao

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Personal Website
Github Linkedin

Education

09/2021–12/2022 (expected) **University of British Columbia**, *Vancouver, Canada*.
MASc student in Electrical & Computer Engineering; Avg. Score: 85.3/100
Advisor: Karthik Pattabiraman.

09/2017–6/2021 **University of Electronic Science and Technology of China**, *Chengdu, China*.
B.E. in Electrical & Communication Engineering; GPA: 3.96/4.0.

Publications

DSN'23 **SwarmFuzz: Discovering GPS Spoofing Attacks in Drone Swarms**.
Yingao (Elaine) Yao, Pritam Dash, Karthik Pattabiranman
IEEE/IFIP International Conference on Dependable Systems and Networks, 2023. (Acceptance rate: 20%)

CCS'22 **Poster: May the Swarm Be With You: Sensor Spoofing Attacks Against Drone Swarms**.
Yingao (Elaine) Yao, Pritam Dash, Karthik Pattabiranman
ACM SIGSAC Conference on Computer and Communications Security, 2022.

Employment Experience

2021 – present **Research Assistant**, *University of British Columbia*.
Advisor: Karthik Pattabiraman

2021 – present **Teaching Assistant**, *University of British Columbia*.
CPEN 333 - Software Engineering.

Project Experience

02/2022 – 05/2022 **Is the Synthesized Scene in the Autonomous Driving Realistic?**.
Evaluated the feasibility of the MSF-ADV (the attack targets at both camera and LiDAR sensors) on autonomous driving cars under different driving scenarios. Tested with YOLOv3 and KITTI dataset
Advisor: Karthik Pattabiraman, University of British Columbia.

02/2022 – 05/2022 **Measuring Context Switches in Serverless Environment**.
Measured the context switch time in Google Cloud Function via benchmarks such as pingpong pipes, conditional variable and Lmbench. Analyzed the factors influencing the context switch time.
Advisor: Mohammad Shahrad, University of British Columbia.

09/2021 – 12/2021 **Encryption in ICS Networks: Is it enough?**.
Leveraged the side-channel information leaks in the observed network pattern, to design the DoS attacks in Industrial Control Systems (e.g., SWaT testbed) equipped with encrypted network protocols.
Advisor: Aastha Mehta, University of British Columbia.

Honors & Awards

2022 ***Faculty of Applied Science Graduate Award***, CAD 600, University of British Columbia.
2020 ***Outstanding Winner (0.2%)***, in COMAP Interdisciplinary Contest in Modeling.
2020 ***Thanksgiving Scholarship for Modern Scientists***, CAD 4000, 12 per school per year.
2020 ***National Scholarship***, CAD 1600, for top 1.5% students per school.
2019 ***National Second Prize (3%)***, in China Undergraduate Mathematical Contest in Modeling.

Skill Summary

Programming Python, C, C++, Bash, Java, Matlab
Softwares ArduPilot, Linux, IDA Pro, Linux, Git