Yilu Dong

801 Toftrees Ave, 456, State College, PA, 16803

EDUCATION

• **The Pennsylvania State University** — *01/2024 - present*
Ph.D. student in Computer Science and Engineering — University Park, PA
  ◦ Advisor: Dr. Syed Rafiul Hussain

• **The Pennsylvania State University** — *08/2021 - 08/2023*
M.S. in Computer Science and Engineering — University Park, PA
  ◦ Advisor: Dr. Syed Rafiul Hussain
  ◦ Thesis: Deviant Behavior Analysis of 5G Core Network Implementations

• **The Pennsylvania State University** — *08/2017 - 05/2021*
B.S. in Computer Science — University Park, PA
Minor in Cybersecurity Computational Foundations, Computer Engineering, Statistics, and Mathematics Application
  ◦ Dean's List (Fall 18, Spring 19, Fall 19, Spring 20, Fall 20, Spring 21)

TEACHING EXPERIENCE

• **The Pennsylvania State University** — *08/2022 - 05/2023, 01/2024 - 05/2024*
Teaching Assistant (CMPSC 461: Programming Language Concepts) — University Park, PA
  ◦ Prepared questions for assignments and exams for a class of over 250 students.
  ◦ Held weekly office hours to help students with concepts and assignments.

• **The Pennsylvania State University** — *01/2022 - 05/2022*
Learning Assistant (CSE 543: Computer Security) — University Park, PA
  ◦ Designed graduate-level course projects, including cryptography and web security topics.
  ◦ Held weekly office hours and graded assignments.

• **The Pennsylvania State University** — *08/2020 - 12/2020*
Grader (CMPSC 465: Data Structures and Algorithms) — University Park, PA
  ◦ Graded assignments and exams for a class of over 200 students.

INDUSTRY EXPERIENCE

• **CableLabs** — *05/2022 - 08/2022*
5G Intern — Louisville, CO
  ◦ Deployed a test 5G SA network in the lab using SDRs (USRP B210, N310) and open-source implementation.
  ◦ Modified the OpenAirInterface code to develop a demo PKI solution to prevent fake base station attacks.
  ◦ Built a SIB message relay to evaluate our solution against potential relay attacks.

• **GE Healthcare** — *05/2019 - 08/2019*
Intern Engineer — Shanghai, China
  ◦ Designed a program to provide production data to the new Kanban system.
  ◦ Developed a web-based document management system using Spring and MySQL.

PUBLICATIONS — C=CONFERENCE, J=JOURNAL

[C4] Syed Md Mukit Rashid, Tianwei Wu, Kai Tu, Abdullah Al Ishtiaq, Ridwanul Hasan Tanvir, <u>Yilu Dong</u>, Omar Chowdhury, Syed Rafiul Hussain. **State Machine Mutation-based Testing Framework for Wireless Communication Protocols**. In *the 2024 ACM SIGSAC Conference on Computer and Communications Security (CCS)*, 2024.

[C3] Rabiah Alnashwan, Yang Yang, <u>Yilu Dong</u>, Prosanta Gope, Behzad Abdolmaleki, Syed Rafiul Hussain. **Strong Privacy-Preserving Universally Composable AKA Protocol with Seamless Handover Support for Mobile Virtual Network Operator**. In *the 2024 ACM SIGSAC Conference on Computer and Communications Security (CCS)*, 2024.

[C2] Kai Tu, Abdullah Al Ishtiaq, Syed Md Mukit Rashid, <u>Yilu Dong</u>, Weixuan Wang, Tianwei Wu, Syed Rafiul Hussain. **Logic Gone Astray: A Security Analysis Framework for the Control Plane Protocols of 5G Basebands**. In *the 33rd USENIX Security Symposium (USENIX Security)*, 2024. 🏆 Distinguished Paper Award

[C1] Mujtahid Akon, Tianchang Yang, <u>Yilu Dong</u>, Syed Rafiul Hussain. **Formal analysis of access control mechanism of 5G core network**. In *the 2023 ACM SIGSAC Conference on Computer and Communications Security (CCS)*, 2023.

Honors and Awards

- **Best AI Application Built with Cloudflare** *2024*
  HackPSU Fall 2024
  - Used LLM to provide interest points of a city specified by a user.
  - Built the web application using Flask and React with TypeScript.

- **Distinguished Paper Award** *2024*
  the 33rd USENIX Security Symposium
  - Logic Gone Astray: A Security Analysis Framework for the Control Plane Protocols of 5G Basebands **[C2]**.

- **KCF - Hack the Waiting Room Challenge** *2018*
  HackPSU Fall 2018
  - Composed sensor data to measure how many people are in a room. Built from scratch in 24 hours.
  - Acted as a major contributor in a 4-person team with no previous experience with Arduino.

Skills

- **Programming Languages:** C, C++, Python, Java, Kotlin, R, Go, Scheme, Rust
- **Web Technologies:** Flask, React.js, Nginx, REST API, JavaScript, TypeScript
- **Other Software and Tools:** Docker, Git, Bash, Wireshark, GDB, OpenSSL, SQL, MongoDB, NumPy, Pandas, protobuf
- **5G-Related Software Stack:** srsRAN, OpenAirInterface, free5GC, Open5GS, UERANSIM, Magma, asn1c
- **Languages:** English (professional), Chinese (native), Japanese (Elementary)