

# ANNA RAYMAKER

[araymaker3@gatech.edu](mailto:araymaker3@gatech.edu)  
<https://annaraymaker.dad/>

RESEARCH INTERESTS	<ul style="list-style-type: none"><li>• Network and system security, with a focus on securing cyber-physical and safety-critical infrastructures across transportation and energy systems.</li><li>• Large-scale data analysis and network measurement for uncovering real-world cyber risks, including GPS spoofing, sensor manipulation, and exposure of distributed energy resources.</li><li>• Human-centered and operational technology security, integrating usability, operator workflows, and domain constraints into practical and deployable defenses.</li></ul>	
EDUCATION	<b>Ph.D. in Electrical and Computer Engineering</b> Georgia Institute of Technology <a href="#">Cyber-Physical Systems Security Lab</a> Advisor: <a href="#">Professor Saman Zonouz</a>	Fall 2022 - Present Atlanta, GA
	<b>B. S. in Computer Engineering</b> University of Florida	Fall 2018 - Spring 2022 Gainesville, Florida
HONORS & AWARDS	<b>Spark Award Scholarship</b> Awarded to Georgia Tech graduate students demonstrating outstanding leadership in advancing student engagement in energy research and broader service impact. <b>President's Fellowship</b> Offered to the top 10% of the Georgia Institute of Technology's doctoral program applicants. <b>Commencement Speaker at the University of Florida</b> <a href="#">[link]</a> (52:00 - 57:00 approx.) <b>Presidential Service Award at the University of Florida</b> <b>National Merit Scholar</b> <b>Benacquisto, Bright Futures, and Vicar's Landing Scholarships</b>	November 2025 August 2022 Spring 2022 Spring 2022 2018 2018 - 2022
PUBLICATIONS	<p><b>Raymaker, A.</b>, Kumar, A., Wong, M., Pickren, R., Chhotaray, A., Li, F., Zonouz, S., Beyah, R., "A Sea of Cyber Threats: Maritime Cybersecurity from the Perspective of Mariners," in <i>The ACM Conference on Computer and Communications Security (CCS)</i>, 2025</p> <p><b>Raymaker, A.</b>, Von Brock, R., Pickren, R., Chhotaray, A., Li, F., Zonouz, S., Beyah, R., "She Spoofed Sea Ships by the Sea Shore: Characterizing GPS Anomalies in Global Maritime Positioning Data," <i>in submission</i>, 2025</p> <p>Pickren, R., <b>Raymaker, A.</b>, Chhotaray, A., Li, F., Zonouz, S., Beyah, R., "Mutiny!, Compromising Maritime Systems via Weaponized Situational Awareness Broadcast Messages," <i>in submission</i>, 2025</p> <p>Kumar, A., <b>Raymaker, A.</b>, Specter, M., "Security and Privacy Analysis of Tile's Location Tracking Protocol," <i>in submission</i>, 2025</p> <p>Ashebo, B., Asiamah, R., Talkington, S., <b>Raymaker, A.</b>, Chhotaray, A., Zonouz, S., Molzahn, D., "Analyzing Cyber Resilience of Distribution Systems with High Penetrations of Inverter-Based Resources," <i>in submission</i>, 2025</p> <p>Ryu, Z., Chung, S., Karim, M., <b>Raymaker, A.</b>, Jodha, K., Chaturvedi, Y., Mertoguno, S., "Beware EviLLM: Enabling Vulnerability Injection via Large Language Models," <i>in submission</i>, 2025</p>	

RELEVANT COURSEWORK	Advanced Computer Security, Empirical Computer Security, Cybersecurity of Drones, Network Security, Advanced Malware Analysis, Linear Systems and Controls, Advanced Programming Techniques	
RESEARCH EXPERIENCE	<b>Graduate Research Assistant - CPSec Lab</b> Georgia Institute of Technology <b>Energy and Critical Infrastructure Security (Department of Energy Funded)</b> <ul style="list-style-type: none"> <li>• Developed scalable techniques for discovering exposed Distributed Energy Resources (DERs), particularly solar inverters, using Censys data collection, web scraping, and active scanning.</li> <li>• Led a team of master's students to build a global pipeline that has already uncovered thousands of exposed inverters, with grid-impact simulations underway for Oahu, Hawaii to evaluate risks to real-world power systems.</li> </ul> <b>Maritime and Transportation Cybersecurity</b> <ul style="list-style-type: none"> <li>• Built a large-scale maritime data analysis tool to detect GPS spoofing by combining Kalman filtering, geodesic deviation checks, and spatial clustering; identified persistent spoofing zones worldwide (paper under submission).</li> <li>• Led a user study identifying key cybersecurity gaps in mariner mental models and training (CCS 2025).</li> <li>• Built a maritime cybersecurity testbed to evaluate cyber threats and defenses.</li> <li>• Contributed to a research project on AIS-based malware propagation, assisting in the development and evaluation of situational message-based attack vectors (paper under submission).</li> <li>• Reverse engineered NMEA 2000 messages over CAN bus to support analysis of vessel controller behavior.</li> </ul> <b>Binary Analysis for Software Supply Chain Security (Department of Defense Funded)</b> <ul style="list-style-type: none"> <li>• Applied machine learning models (e.g., Trex, GNNs) for binary similarity analysis to support automated Bill of Materials (BA-BOM) extraction in large-scale binaries.</li> </ul>	Spring 2024 - Current Atlanta,GA
	<b>Graduate Research Collaborator - D2I Lab</b> Georgia Institute of Technology	Spring 2024 Atlanta,GA
	<b>Graduate Research Collaborator - COEUS</b> Georgia Institute of Technology	Fall 2023 Atlanta,GA
	<b>Graduate Research Assistant - CyFI Lab</b> Georgia Institute of Technology	Fall 2022 - Fall 2023 Atlanta,GA
	<b>Undergraduate Research Assistant - ARC lab</b> University of Florida	August 2021 - May 2022 Gainesville, Florida
	<b>Undergraduate Research Assistant - FICS lab</b> University of Florida	June 2020 - Feb 2022 Gainesville, Florida
	<b>Undergraduate Research Assistant - SWAMP lab</b> University of Florida	August 2019 - 2020 Gainesville, Florida
TEACHING	<b>Head Graduate Teaching Assistant, Georgia Institute of Technology</b> ECE 3030: Physical Foundations of Computer Engineering	Spring 2024

	<b>Graduate Teaching Assistant, Georgia Institute of Technology</b> ECE 6100: Advanced Computer Architecture	Fall 2023
	<b>Undergraduate Teaching Assistant, University of Florida</b> EEL 4712: Digital Design EEL 4744: Microprocessor Applications EEL 3701C: Digital Logic and Computer Systems	Fall 2021 - Spring 2022 Fall 2021 Spring - Summer 2021
INVITED TALKS	<b>Cyber Security Agency of Singapore Talk (Atlanta, GA)</b> Will demonstrate the maritime cybersecurity testbed and present research findings to government officials at the <a href="#">Cyber Security Agency of Singapore</a> .	Nov 2025
	<b>SecurityWeek ICS Cybersecurity Conference (Atlanta, GA)</b> <i>From Ship to Shore: Real-World Threats and Zero-Day Attacks in Maritime Operational Technology</i> <a href="#">icscybersecurityconference.com</a>	Oct 2025
	<b>ACM CCS 2025 Conference Presentation (Taipei, Taiwan)</b> <i>A Sea of Cyber Threats: Maritime Cybersecurity from the Perspective of Mariners</i>	Oct 2025
	<b>Guest Lecture for Critical Infrastructure Security class (Atlanta, GA)</b> Presented research on maritime cybersecurity to a class of graduate and undergraduate students at Georgia Tech	Oct 2025
	<b>Georgia Institute of Technology - CPSec Lab Testbed Tour</b> Demonstrated the maritime cybersecurity testbed and research to faculty members, the School of Cybersecurity and Privacy (SCP) Chair, and distinguished visitors including <a href="#">John Tien</a> (former Deputy Secretary of DHS) and <a href="#">Ann Dunkin</a> (former CIO, U.S. Department of Energy).	Aug 2025
	<b>TEDxGeorgiaTech Talk</b> <i>The Invisible War: Protecting Our Future from Cyber Threats</i> <a href="#">tedxgeorgiatech.com/conference2025</a>	Mar 2025
PROFESSIONAL EXPERIENCE	<b>FPGA Electrical Engineering Intern</b> L3Harris <ul style="list-style-type: none"> <li>Developed SpaceVPX test card in Vivado SPI IP.</li> <li>Defined FPGA requirements &amp; collaborated with a multi-specialty engineering team.</li> </ul>	May 2021 - August 2021 Melbourne, Florida
SERVICE	<b>External Reviewer</b> Conference on Computer and Communications Security (CCS) European Symposium on Research in Computer Security (ESORICS) IEEE S&P Workshop on Language-Theoretic Security (LangSec) IEEE International Conference on Trust, Privacy and Security (TPS)	2023 2023 2023 2022
EXTRA-CURRICULAR ACTIVITIES	<b>President of SCP Graduate Student Association (GSA)</b> Georgia Institute of Technology <ul style="list-style-type: none"> <li>Lead the executive board and oversee all GSA initiatives across the SCP.</li> <li>Plan and organize inter-college and campus-wide engagement events for the COC.</li> <li>Serve as the sole student representative on the SCP Chair Search Committee, ensuring graduate student perspectives are included in the hiring process.</li> </ul>	May 2025 - Present Atlanta, Georgia
	<b>Student and Faculty Affairs Chair for SCP GSA</b> Georgia Institute of Technology <ul style="list-style-type: none"> <li>Organized faculty-student engagement events.</li> <li>Advocated for a graduate student ombudsperson and mental health resources.</li> </ul>	May 2024 - April 2025 Atlanta, Georgia

**Presencia Volunteer**

May 2024 - August 2024

Presencia

Atlanta, Georgia

- Assisted immigrant youth in nutrition & fitness programs.

**Engineering Ambassador**

January 2021 - May 2022

University of Florida

Gainesville, Florida

- Gave tours for the college and acted as a student engineering leader.

**IEEE HKN**

August 2020 - May 2022

University of Florida

Gainesville, Florida

- Held exam reviews and tutored students in the ECE department.

**Alpha Phi Omega**

August 2018 - May 2022

University of Florida

Gainesville, Florida

- Volunteered for over 1,000 hours at various local organizations (e.g., the Humane Society, Salvation Army, UF student gardens, CADE Museum for Science and Creativity, local nursing homes).