

# LIAM TYLER

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## Research Interests

1. Developing hardware-based runtime integrity protections for embedded systems through Isolation, Compartmentalization, and Control Flow Attestation/Auditing (CFA)
  2. Applying a systems security perspective to browser security with a focus on malicious extensions
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## Education

<b>Ph.D. in Computing and Information Sciences</b> Rochester Institute of Technology, Rochester, NY	August 2022 – Present
<b>M.S. in Computing Security</b> Rochester Institute of Technology, Rochester, NY	August 2018 - May 2022
<b>B.S. in Computing Security, <i>summa cum laude</i></b> Rochester Institute of Technology, Rochester, NY GPA: 4.0	August 2018 - May 2022

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## Publications

- Adam Caulfield, **Liam Tyler**, and Ivan De Oliveira Nunes, "SpecCFA: Enhancing Control Flow Attestation and Auditing via Application-Aware Sub-Path Speculation" (To appear in ACSAC 2024)
  - **Liam Tyler** and Ivan De Oliveira Nunes, "Untrusted Code Compartmentalization for Bare Metal Embedded Devices." IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, vol. 43, no. 11, pp. 3419-3430, Nov. 2023
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## Posters

- **Liam Tyler** and Ivan De Oliveira Nunes, "Compartmentalizing Untrusted Code in Bare-Metal Embedded Devices", 33<sup>rd</sup> USENIX Security Symposium (USENIX Security 24), Aug. 2024
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## Pre-Prints/Under Review

- **Liam Tyler**, Adam Caulfield, and Ivan De Oliveira Nunes, "ReSpec-CFA: Representation-Aware Speculative Control Flow Attestation" (in submission)
  - **Liam Tyler** and Ivan De Oliveira Nunes, "Towards Browser Controls to Protect Cookies from Malicious Extensions" (arXiv preprint) May 2024
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## Professional Service

### External Reviewer

- USENIX Security 2024
  - ACM CCS 2023
  - ESORICS 2023
  - NDSS 2023
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## Awards And Honors

<b>Dean's List</b> (6 of 6 eligible semesters), Rochester Institute of Technology	2018-2022
<b>Outstanding Undergraduate Scholar</b> , Rochester Institute of Technology	2021

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## Teaching Experience

**Teaching Assistant**, IoT Security (CSEC 741)

January 2024 – May 2024

**Teaching Assistant**, Trusted Computing (CSEC 530/630)

August 2023 – December 2023

**Course Assistant**, Software Development 1/2 (GCIS 123/124)

August 2021 – May 2022

**Course Assistant**, Software Development 2 (CSEC 124)

January 2021 – May 2021

**Supplemental Lab Instructor**, Computer Science 1/2 (CSIC 141/142)

August 2019 – May 2020

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## Technical Experience

**Co-op Student (ENGRG/COMP SCI)**

June 2021 – August 2021

Parsons Corporation

Centreville, VA

- Integrated system testing into automated CI/CD pipelines
- Developed APIs to system-test products

**Co-op Student (ENGRG/COMP SCI)**

June 2020 – December 2020

Parsons Corporation

Centreville, VA

- Worked on a team to develop a cybersecurity tool in Python and C using agile methodologies
  - Worked with other teams to develop a microservice that conforms to their API
  - Added and improved product functionality to meet customer objectives
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## Technical Skills

**Languages:** Python, Java, C/C++, JavaScript, HTML, Verilog HDL, SQL

**Operating Systems:** Windows, Linux

**Networking:** Wireshark, Nmap, Docker, VMWare, OpenVPN

**Other Tools:** Git, GitLab CI/CD, Vivado, NuSMV, LTL, Machine Learning

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