

EDUCATION	Rice University , Houston, TX B.S., Computer Science with a minor in Mathematics • 3.67/4.00 Cumulative GPA • 3.66/4.00 Major GPA May 2024
RESEARCH EXPERIENCE	Rice University , Houston, TX Undergraduate Research Assistant August 2023–Present <ul style="list-style-type: none">Working with Dr. Nathan Dautenhahn on analyzing the information leaked by programs running in containers.Combining static program analysis and process time measurements to extract secret values through side channels in process lists. Undergraduate Research Assistant March–August 2022 <ul style="list-style-type: none">Worked with Dr. Dan. Wallach on a TypeScript implementation of Microsoft's ElectionGuard SDK for our partner, Enhanced Voting.Implemented robust codecs interoperable with the python reference implementation using <i>fp-ts</i> and <i>io-ts</i>.Wrote property-based tests and unit tests using <i>fast-check</i> and <i>jest</i> to achieve statement coverage of over 90%.Contributed new CLI commands to generate and submit test ballots to the open-source electionguard-python implementation. Max Planck Institute for Security and Privacy , Bochum, Germany Software Security Research Intern May–August 2023 <ul style="list-style-type: none">Worked with Dr. Marcel Böhme on quantifying information leakage of programs from just a small number of samples using statistical methods from ecology.Optimized experiment runtime from 20 to 2 hours by using fewer resamples and parallelizing mutual information computation in the Jackknife estimator.Implemented a prototype of our method in Python and plotted its mutual information estimates alongside those of state-of-the-art methods to find anomalies.
PROFESSIONAL EXPERIENCE	RiceApps , Houston, TX Tech Lead August 2022–May 2023 <ul style="list-style-type: none">Led a team of eight developers to build an app for in-community music sharing.Helped developers use Flutter to build the cross-platform frontend and NodeJS with TypeScript to develop the backend.Prototyped backend routing and database design using <i>Koa</i> and <i>TypeORM</i>. Software Developer August 2021–May 2022 <ul style="list-style-type: none">Developed the Rice Carpool React app with a team of seven other developers.Made over 15 pull requests fixing issues across the stack, including GraphQL performance improvements and preventing invalid rides from being created.Implemented email notifications in our Node.js backend using <i>nodemailer</i>, allowing users to receive real-time notifications of ride changes.

Cummins Inc., Indianapolis, IN

Software Engineering Intern

June–August 2022

- Fixed issues with the E-Commerce search system, including incorrect handling of edge-case queries and missing results.
- Enhanced the product checkout experience, improving accessibility and resolving bugs such as an inconsistent subproduct order for some products.
- Participated in code reviews, quality assurance, and DevOps, performing thorough testing and managing deployments.

Pashi, Remote

Software Engineering Intern

May–July 2020

- Built a prototype for Pashi’s interactive, visual programming language with JQuery and HTML5 Canvas.
- Worked with a REST API that controlled production lines to connect user-written code to real-world effects.
- Explored React and vanilla JavaScript as alternate stack choices by creating interactive, minimally viable demos.

MANUSCRIPTS

- [1] S. Lee, S. Minocha, and M. Böhme, “Accounting for missing events in statistical information leakage estimation,” **In submission.**

TEACHING
EXPERIENCE

Rice University, Houston, TX

Instructor

- Introduction to CTFs (COLL 123) **Spring 2023**
 - Developed and taught an activity-based course introducing students to capture-the-flag competitions.
- Covered the basics of web exploitation, reverse engineering, binary exploitation, cryptography, and digital forensics through lectures and demos.
- Eleven students enrolled; Overall quality rating of 1.22 vs. Rice mean of 1.72 (1 = Outstanding, 5 = Poor).

Teaching Assistant

- Introduction to Concurrent Program Design (COMP 318) **Fall 2023**
- Systems Software (COMP 621) **Summer 2023**
- Introduction to Computer Systems (COMP 321) **Fall 2022, Spring 2023**

LEADERSHIP &
OUTREACH

Rice Information Security Club

- President **Fall 2023–Present**
- Co-founder and Vice President **Spring 2023**

HackRice 13 CTF, Co-organizer and challenge developer

Fall 2023

- Organized a 36-hour capture-the-flag competition for over 25 participants.

RiceApps OSA Mentor

June–August 2022

- Introduced six students to full-stack development six students.

AWARDS

- Rice Undergraduate Scholars Program **2023–24**
Selected in a cohort of 25 students to receive a \$1000 honors thesis grant.
- Second Place Team, HackRice 12 **September 2022**
Built an encrypted chat platform to connect students with mental health resources.
- Eighth Place Team, UTCTF 2023 **March 2023**
- US-Canada Top 15 Team, CSAW CTF '22 Qualifiers **September 2022**
- Second Place Team, Education Track, HackRice 11 **September 2021**
Built a tool to generate lecture summaries from audio lectures.
- Google Code-in 2018 Grand Prize Winner **December 2019**
Completed over 20 tasks for Wikimedia Foundation.