

# Mary Tsahas

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## EDUCATION

### Princeton University

Princeton, NJ

B.S.E. Graduate, Computer Science Major

- **GPA:** 3.82/4.0
- **Relevant coursework:** Programming Systems, Introduction to Machine Learning, Reasoning about Computation, Advanced Programming Techniques, Economics and Computing, Principles of Computer System Design, Contemporary Logic Design, Ethics of Computing, Information Security, Blockchains and Their Applications

## EXPERIENCE

### Intel Corporation

Remote

Offensive Security Research Intern

June 2023 - August 2023

- researched hardware security threats like software-accessible power and frequency throttling side-channels
- expanded functionality of internal validation and threat analysis software tool using C++
- presented research and project contributions to Intel Product Assurance & Security team

### COS 226 - Data Structures and Algorithms

Princeton, NJ

Precept Assistant

January 2022 - May 2023

- attended weekly precepts and answers any questions students have while working through exercises
- explained topics like searching, sorting, interfaces, DFS, graphs, trees, tries, etc. to a class of 30 students

### Princeton-Intel REU

Princeton, NJ

Researcher

June 2022 - August 2022

- conducted research on Sequestered Encryption, a hardware solution to computer security vulnerabilities
- implemented design in Chisel with purposeful timing side channels to test formal verification systems

### ZeusLN App

Remote

Intern

June 2021 - August 2021

- worked as an intern for Zeus, a start-up Lightning Node Bitcoin Wallet app
- coded a new feature allowing users to sign messages as they send payments
- learned basic JavaScript, React Native, and GitHub through weekly technical challenges

## PROJECTS

### Princeton DElection: Decentralized Voting Web App

Princeton, NJ

<https://mtsahas.github.io/cos471-webapp/>

April 2024

- developed a blockchain-based voting app using Ethereum smart contracts deployed on the Sepolia testnet
- used Solidity for smart contract development and HTML/JS for frontend development

### Ultralight Website

Princeton, NJ

<https://mtsahas.github.io/ultralight/>

Spring 2024

- designed and developed a series of visually diverse web pages on weekly prompts, using HTML, CSS, and JS

### e2e: End-to-end Encrypted Messaging Web App

Princeton, NJ

<https://github.com/mtsahas/e2e>

December 2023

- developed a secure end-to-end encrypted instant messaging web app using a double ratchet encryption library
- used HTML, Javascript, and Olm for client and Python Flask and websockets for server

### Foreign Song Lyric Analysis Independent Work

Princeton, NJ

<https://github.com/mtsahas/lyricsAnalysis>

January 2023 - June 2023

- performed analysis of the use of English in 500+ foreign songs using web scraping, Genius API, Python, etc.

### Princeton iMuseum Web App

Princeton, NJ

<https://princeton-imuseum.onrender.com/login>

September 2022 - December 2022

- worked on a team of 5 to create a personal art hub using the Princeton Art Museum's art collection
- developed features allowing users to search/browse art pieces and save them to personalized collections
- used technologies like PostgreSQL, SQLAlchemy, Python, Flask, HTML, CSS, JavaScript, Ajax, and more

## LEADERSHIP

### Princeton Association for Computing Machinery

Princeton, NJ

Outreach Chair

June 2023 - Present

- designs and distributes marketing materials for club events, including graphics, emails, and merchandise
- assists in planning ACM events, including COSCON, Princeton's annual computer science competition

## SKILLS

**Technical:** Java, Python, Github, HTML, CSS, Javascript, Go, C, SQL, Flask