Mary Tsahas

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EDUCATION

Princeton University   **Princeton, NJ**
B.S.E Recipient, Computer Science   *May 2024*
- **GPA:** 3.82/4.0
- **Relevant coursework:** Programming Systems, Introduction to Machine Learning, Advanced Programming Techniques, Principles of Computer System Design, Information Security, Blockchains and Their Applications

EXPERIENCE

Intel Corporation   **Remote**
Offensive Security Research Intern   *June 2023 - August 2023*
- Conducted research on hardware security threats, focusing on software-accessible power and frequency throttling side-channels.
- Expanded functionality of an internal validation and threat analysis tool using C++ to enhance detection capabilities and extend support for additional input sources.
- Implemented functions that increased the number of possible data point collection by 3x.

COS 226 - Data Structures and Algorithms   **Princeton, NJ**
Undergraduate Course Assistant   *January 2022 - May 2023*
- Mentored students in weekly precepts, addressing questions and guiding them through exercises.
- Explained foundational topics like searching, sorting, DFS, graphs, trees, and tries to 100 students.

Princeton-Intel REU   **Princeton, NJ**
Undergraduate Researcher   *June 2022 - August 2022*
- Researched Sequestered Encryption, a hardware-based approach to mitigating computer security vulnerabilities.
- Implemented design in Chisel with controlled timing side channels to test formal verification systems.
- Collaborated with undergraduate, graduate students, and professors, using GitHub to manage code contributions.

ZeusLN App   **Remote**
Intern   *June 2021 - August 2021*
- Worked closely with mentor to design and implement a new feature in React Native, enabling users to sign messages while sending payments across a Bitcoin Lightning node network to enhance security.

PROJECTS

Princeton DElection: Decentralized Voting Web App   **Princeton, NJ**
https://github.com/mtsahas/cos471-webapp   *April 2024*
- Developed a blockchain-based voting app using Ethereum smart contracts deployed on the Sepolia testnet.

Humans of 33 Prospect   **Princeton, NJ**
https://mtsahas.github.io/ultralight/local_website/index.html   *Spring 2024*
- Designed and developed a lightweight website (under 1MB) to showcase members of the Quadrangle Club.

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 application utilizing a double ratchet encryption protocol for strong message confidentiality.

Foreign Song Lyric Analysis Independent Work   **Princeton, NJ**
https://github.com/mtsahas/lyricsAnalysis   *January 2023 - June 2023*
- Conducted an in-depth analysis of English language presence in over 500 foreign-language songs.
- Collected data by web scraping 500 pages and using the Genius API to retrieve song metadata.

Princeton iMuseum Web App   **Princeton, NJ**
https://princeton-imuseum.onrender.com/login   *September 2022 - December 2022*
- Worked in a team of five to build a personal art hub using the Princeton Art Museum's collection, enabling users to search, browse, and save art pieces.
- Developed backend features with PostgreSQL, SQLAlchemy, and Flask, and created an interactive frontend with HTML, CSS, JavaScript, and Ajax.
- Collaborated on GitHub for version control, managing code contributions through branches, pull requests, and code reviews.

SKILLS

Technical: Java, Python, Github, HTML, CSS, Javascript, SQL, Go, C, C++, Chisel, Solidity