Molly MacLaren

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EDUCATION

University of California, San Diego *Sept 2021 - Dec 2024*
B.S. in Computer Engineering *3.56/4.0*

Past coursework: Advanced Data Structures, Systems Programming, Algorithm Design, Software Engineering, Intro AI: Search and Reasoning, Discrete Math, CS Theory, Programming Languages, Operating Systems, Digital Design, Security, Compiler Construction, Engineering Statistics, Analog Design, Circuits and Systems, Signal Analysis

Current coursework (complete by December 2024): Advanced Digital Design, CPU Architecture

EXPERIENCE

Lawrence Livermore National Laboratory June 2024 - Sept 2024
Applied Formal Methods Research Assistant *Livermore, CA*

- Evaluated capabilities and usability of frameworks Creusot and Prusti for formally verifying code written in Rust.
- Investigated source code and reached out to developers for clarity and discussion on areas of improvement.
- Formally verified the backing data structure and union-find algorithm of the *egg* e-graph library.
- Submitted case study and usability analysis to VMCAI 2025 conference (pending acceptance).

SALAD Lab, UCSD CSE June 2023 - Present
Programming Languages Research Assistant *San Diego, CA*

- Analyzed frequency and time consumption of compiler error resolution among programmers in the Rust language.
- Contributed Analysis and Results for a paper in HATRA, part of SPLASH 2023.
- Developed SALT, a VScode extension hosting a public-facing study to analyze effectiveness of Rust tools.
- Incorporated study sign-up, logging system for compiler errors and IDE interactions, and database to receive logs. Currently has 300+ users and 50+ active research participants.

Ujima Lab, UCSD CSE Sept 2022 - August 2023
Privacy and Security Research Assitant *San Diego, CA*

- Designed and deployed surveys based on weaknesses discovered in VR and gaming privacy policies.
- Performed NLP analysis on 30k online posts to find the most pressing privacy topics in gaming communities.
- Presented a poster at JSOE's Undergrad Research Symposium and a workshop paper in WIPS, part of SOUPS 2023.

ACM Cyber, UCSD Student Org April 2022 - Present
Competitions Comittee and Board Member *San Diego, CA*

- Hosted informational events for undergraduates on security topics from steganography to memory safety.
- Organized Capture-the-Flag (CTF) teams for club members to practice skills in cybersecurity.
- Forensics and OSINT challenge writer for SDCTF since 2023.

TECHNICAL STRENGTHS

Languages Rust, Python, Haskell, C, C++, Java, Typescript, HTML, CSS, System Verilog, ARM Assembly
Tools Git, Unix, VS Code, SQLite, AWS, Azure