

# Eric Zhang

U.S Citizen | 734-546-0902 | [emzhang@umich.edu](mailto:emzhang@umich.edu) | [LinkedIn](#) | [website](#) | [GitHub](#)

## Education

### University of Michigan

*Bachelor of Science in Computer Science*

Ann Arbor, MI

*Expected Graduation May 2026*

- **GPA: 3.97/4.0** | **Awards:** James B. Angell Scholar, William J. Branstrom Prize, University Honors
- **Relevant Coursework:** Data Structures & Algorithms, Operating Systems, Machine Learning, Distributed Systems, Embedded Systems, Computer Vision, Computer Architecture, Computer Networks, Theory of Computer Science, Software Engineering, Discrete Mathematics, Linear Algebra, Multivariable & Vector Calculus

## Technical Skills

**Languages:** C, C++, Python, Golang, HTML, CSS, JavaScript, Verilog, System Verilog, ARM, RISC-V

**Tools and Frameworks:** git, Linux, React, node.js, Vue, GDB, RTL Design, VSCode

**Skills:** Data Structures and Algorithms, Multi-Threading, OOP

## Work Experience

### Boston Scientific

*Software Engineer Intern*

Waltham, MA

*May 2024 - Aug 2024*

- Integrated YOLOv10 computer vision models with Squish for QT to automate catheter visibility testing in cardiology mapping software, saving **2 hours of manual testing per week**
- Designed a Python framework for automatic image labeling, increasing the efficiency of bounding box creation around detected objects by **500%**
- Developed a web tool using React and Node.js for easy control of relays and input channels in signal processing hardware, improving system accessibility and simplifying task management for users

### Michigan Medicine

*Machine Learning Research Assistant*

Ann Arbor, MI

*May 2023 - Aug 2023*

- Developed a privileged logistic regression pipeline for identifying Acute Respiratory Distress Syndrome in chest x-ray embeddings, achieving an AUC over **84%**
- Produced a localization map highlighting critical areas within chest x-rays used by Convolutional Neural Nets for identifying Acute Respiratory Distress Syndrome
- Leveraged 15 minute intervals of Apple Watch heart rate data to predict Atrial Fibrillation events 5 minutes in advance, attaining an accuracy over **69%**

## Project Experience

### Michigan Mars Rover Team

*Teleoperation Team Member*

Ann Arbor, MI

*Sep 2022 - Apr 2024*

- Developed interactive user interface components for the rover's GUI using Vue.js, enabling remote control of the rover and real-time data visualization
- Utilized Django for publishing and subscribing to Robot Operating System (ROS) topics, enabling communication between the rover and GUI

## Projects

### Out-of-Order RISC-V Processor | *SystemVerilog, RISC-V, RTL*

- Designed a RISC-V processor with out-of-order & N-way superscalar execution, early tag broadcast, fast branch recovery, early branch resolution, store queue, non-blocking data cache, Gshare branch prediction, and instruction prefetching. Achieved **11.5ns clock period** and average **1.3 CPI**.

### Multi-threaded File Server | *C++*

- Implemented a thread-safe file server in C++ using upgradable reader/writer locks and TCP sockets, allowing users to manage files and directories via network messages

### Virtual Memory Pager | *C++*

- Designed a virtual memory pager in C++ that supports swap-backed and file-backed pages for multiple processes and manages page faults, process creation, forking, and process destruction

### Thread Library | *C++*

- Developed a kernel-level C++ thread library using UNIX contexts for thread lifecycle management, CPU booting, and interrupt handling, including synchronization primitives such as mutexes, condition variables, and spinlocks