

# Jonathon Sonneborn

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## EDUCATION

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**University of Michigan, College of Engineering**  
B.S.E. in Computer Science, Minor in Electrical Engineering

Ann Arbor, MI  
Expected Graduation: April 2024

## TECHNICAL SKILLS

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**Languages:** C++, SystemVerilog, Java, JavaScript, HTML, SQL, Bash, Python, RISC-V, ARM, x86

**Tools:** Git, Linux, Docker, SQLite3, Make, REST API

**Frameworks:** Ncurses, React, Flask

## WORK EXPERIENCE

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### EECS DCO Computer Consultant

January 2023 - Present

*University of Michigan, Ann Arbor*

- Provided technical support to faculty, staff, and students on computer and networking issues
- Assisted in the setup and maintenance of computer labs and classrooms
- Managed thousands of user's accounts and permissions on Windows and Linux systems

## PROJECTS

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### Nintendo Entertainment System Emulator

- Currently developing a Nintendo Entertainment System (NES) emulator using Rust. Demonstrating strong programming skills and understanding of computer architecture to design and implement key components for accurate emulation. Showcasing proficiency in low-level programming and commitment to tackling complex challenges in systems development.

*Technologies Used:* Rust, SDL2

### Fully Synthesizable P6 N-Way Superscalar Processor

*Collaborative Project with a team of 7*

- Contributed to the development of a fully synthesizable Out of Order P6 N-way superscalar RISC-V processor, emphasizing high performance and efficient execution.
- Independently developed a visual debugger for the processor in C++, utilizing Ncurses to enhance debugging capabilities. Innovatively employed pipes for inter-process communication between the SystemVerilog code and the C++ code, enabling real-time data exchange.

*Technologies Used:* SystemVerilog, C++, Ncurses

### Server Filesystem in C++

- Engineered a server filesystem in C++ enabling client command processing via sockets. Implemented dynamic memory allocation for upgradeable reader-writer locks, facilitating multiple readers or exclusive writer access.

*Technologies Used:* C++, Sockets, Smart Pointers, Threads

### Instagram Clone with React and JavaScript

- Developed a client-side dynamic Instagram clone using React and JavaScript, featuring infinite scroll. Integrated a REST API and Flask for backend communication, with SQLite3 for database management.

*Technologies Used:* Python, JavaScript, React, SQLite3, Flask