

Alex Mitelman

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EDUCATION

The Ohio State University

B.S. in Computer Science Engineering, Information and Computation Assurance Specialization

Cumulative GPA: 3.6/4.0; Dean's List 2022-2025

Columbus, OH

December 2025

EXPERIENCE

QXSOFT - CMM-Manager

Computer Science Intern

Lewis Center, OH

March 2025 – October 2025

- Fully prototyped 3 iterations of a full-stack IoT humiture and collision detection system achieving greater than 120-day battery life through deep sleep and hardware interrupt optimization by managing the entire lifecycle and hardware selection.
- Engineered a C# companion application for real-time sensor visualization, device configuration, TCP-based data streaming to an existing CMM Monitor application, and designed a custom JSON protocol over BLE/TCP while debugging and resolving critical connection instability issues.
- Implemented custom JSON exports for 16+ different feature types including Cloud-to-Surface and Tolerance reports by refactoring core C++ systems to enable automated deviation calculations for client-side data analysis.
- Simulated over 1,200 hours of continuous CMM operation using PLC hardware and PowerShell scripts to display real-world usage within the CMM Monitor application which became standard in the company's product demo.
- Authored a C++ Smart Cylinder algorithm that calculates measurement boundaries by factoring in cylinder height, stylus length, and ruby radius to eliminate 100% of path-planning and out-of-range errors in all non-conventional cylinder feature reports.
- Reworked cross-application communication layers using named pipes to sequentially query report status, ensuring data integrity and resolving race conditions in high-frequency data environments.

JSET Automated Technologies

Controls Technician Apprentice

Columbus, OH

Jul 2022 – Sep 2022

- Executed large-scale temperature control installations for AWS and Google data centers focusing on commercial HVAC and cooling efficiency.
- Installed surveillance devices and Wi-Fi networks at an industrial scale and learned technical engineering practices.

PROJECTS

Repo Rover | *Next.js, Flask, LangChain, Elasticsearch, OpenAI*

Dec 2025

- Built an AI assistant RAG pipeline to provide code explanations and security insights without local cloning for public Github repos.
- Implemented hybrid semantic and keyword search with vector embeddings to generate contextual, cited answers from GitHub APIs.
- Architected data flow from ingestion to language detection, providing users with specific file and line references.

React Smart Lock | *React, Node.js, WebSockets, C++, Arduino*

May 2025

- Developed the front-end interface in React, which communicated lock/unlock commands to a Node.js server using WebSockets for live, low latency interaction.
- Programmed an Arduino microcontroller in C++ to receive commands to actuate the solenoid locking mechanism.

The Legend of Zelda | *C#, Godot*

Jan 2025

- Collaborated to create a 2D Zelda-inspired game with dynamic rooms, real-time controls, and interactive objectives
- Applied Agile methodologies and SDLC principles throughout the development and debugging phases.

ACTIVITIES

HUMANITARIAN ENGINEERING SCHOLARS

Aug 2022 – Dec 2025

- Received training in collaborative design, equity-mindedness, professionalism, and perspective-taking.
- Gained experience co-defining problems, co-developing solutions, and co-implementing projects for communities to advance well-being.

ADDITIONAL

Languages: C++, C#, Python, Java, SQL, HTML, JavaScript, Assembly

Software: Visual Studio, VS Code, Eclipse, GitHub, SVN, Git, Office, MATLAB, SolidWorks