

# Noah Charlton

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## Education

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**The Ohio State University** - M.S. Computer Science and Engineering Expected: May 2026

**The Ohio State University** - B.S. Computer Science and Engineering Expected: May 2025

GPA: 4.00 / 4.0

## Work Experience

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**Software Engineering Intern** - Battelle Memorial Institute Jan. 2023 - Present

- Awarded \$35,000 R&D for proposal to simulate underwater camera footage. Reimplemented a research paper using OpenGL to increase algorithm performance by over 600%, allowing for real time simulation.
- Automated a complex test procedure using C++ and software-in-the-loop simulation to verify an electronics system's firmware. Received an Outstanding Performance Award for accelerating testing and debugging of project deliverables before a critical client demo.
- Led the rework of a core software component after the previous project lead left the company. Managed project requirements, tasks, and bug reports. Project was completed on schedule.
- Rewrote C backend for Linux which controlled and collected data from embedded devices over TCP/IP. Implemented new features to increase configurability, stability, and record critical system data.
- Utilized GitHub Actions and Docker to automate the process for cross-compiling and generating software packages for an embedded Arm board to comply with the NIST SSDF standard.
- Maintained distributed simulator written in Rust, C++, and Typescript to mock hardware interfaces.
- Prototyped a GUI tool for configuring a distributed embedded Linux system using C, React, and SFTP.
- Developed a desktop GUI application to control a motor through a serial interface using Protobuffers.
- Created a website using React Redux to plot and visualize data stored in a Redis database.

**Undergraduate Research Assistant** - The Ohio State University Apr. - Dec. 2022

- Modeled 7 consecutive months of missing environmental sensor data using machine learning.
- Automated time shift calculations for different sensors using MATLAB and linear regression.
- Debugged and updated software from previous researchers to reflect sensor changes.
- Presented research at the 2022 Summer Undergraduate Research Forum.

## Extracurricular Experience

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**President** - FIRST Alumni and Robotics at Ohio State Sept. 2021 - Present

- Directed the creation of a new subteam to build a rover for the NASA Lunabotics competition. Led the architecture of the electrical and software subsystems using the systems engineering process.
- Managed the organization's \$10,000 budget and followed OSU accounting practices for procurement.
- Reverse-engineered a vendor's proprietary CAN protocol for a brushless motor controller.
- Co-authored an award winning Systems Engineering paper for the NASA Lunabotics competition.
- Mentored Columbus School For Girls' students on Java programming and robotics engineering.
- Secured \$7,500 in grants from Honda and the Ohio State University to fund STEM outreach.

**Electrical Team Member** - Underwater Robotics Team Sept. 2022 - Present

- Developed firmware in C for custom PCBs built with RP2040 microprocessors.
- Earned "Distinguished New Member" award for taking initiative on firmware development.
- Co-authored an asynchronous driver that controlled a Dynamixel Servo over serial TTL.

**Grand Prize Winner** - Hack OHI/O Nov. 2021

- Awarded 1st Place and Audience Choice award in Ohio State's annual 24 hour coding competition.
- Collaborated with a 4 person team to develop a mouse controlled by hand movements using Python, a top-down webcam, and machine learning.

## Technical Skills

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- Programming Languages: C, C++, Java, Javascript, Typescript, C#, Python, Rust, MATLAB.
- Programming Tools: Docker, Meson, CMake, Git, GitHub, Gradle, GNU Tools, Cargo, IntelliJ, Eclipse.
- Hardware and Software: RP2040, STM32, Wiring, Soldering, Fusion 360, SolidWorks, Altium.