

EDUCATION

- **University of Illinois Urbana-Champaign** Champaign, IL
Bachelor of Engineering Physics, specialization in Computational Physics Aug 2018 – May 2022

EXPERIENCE

- **Belcan** Rockford, IL
Software Engineer Jul 2023 – Present
 - Developed real-time C++ software in a Linux environment to interface with and test distributed embedded hardware systems, communicating over hardware protocols like CAN to send simulated control and sensor data.
 - Built Python automation tools to generate test configurations, drive system-level test scenarios, and validate hardware responses against predefined requirements.
 - Supported hardware-in-the-loop (HIL) testing workflows by simulating system inputs and monitoring outputs across multiple synchronized machines.
 - Implemented a precision timing and synchronization algorithm to measure inter-machine latency and detect timing drift in clustered systems, improving system reliability and diagnostics.
 - Enhanced internal software-hardware integration tooling by extending shared utilities, improving debugging efficiency and scalability of future embedded test development.
 - Led preparation and release of updated test software, collaborating with systems and test engineers to rapidly iterate on requirements and deploy validated solutions.
 - Refined and maintained a standardized developer environment image, ensuring security and dependency compliance while reducing environment setup time by ~3 hours per deployment
- **USGS Illinois Water Science Center** Champaign, IL
Data Analyst/IT Programmer Intern Aug 2021 – Aug 2022
 - Maintained and enhanced Python-based data processing pipelines using Pandas and SciPy for scientific data analysis and delivery.
 - Constructed a user interface using Microsoft Power Apps to modernize logging for field equipment
 - Acted as a tech liaison to onboard and train a new team of employees
 - Supported hardware setup and IT infrastructure during transition back to in-person operations
- **Programming for Engineers and Scientists** Champaign, IL
Course Assistant Aug 2021 – May 2022
 - Assisted in teaching Python and MATLAB to engineering students, supporting coursework in numerical methods, data analysis, and scientific computing.
 - Hosted office hours to provide hands-on debugging and conceptual support on technical programming assignments.

PROJECTS

- **Ecommerce Website** Nov 2022 – Jul 2023
 - Developed a single page application that allows users to make an account and order products online.
 - Included a Relational database of 6 tables stored in PostgreSQL
 - Created the frontend in React.js using the React-Bootstrap UI library
 - Handled the backend using Django Rest Frameworks with CRUD functionalities
- **RATS (Roomba Acoustical Tracking System)** Aug 2021 – Dec 2021
 - Lead a project exploring the possibilities of using sound waves to triangulate a moving Roomba.
 - Engineered a circuit board to support components including an Adalogger, microphone, GPS, BME 680, Radio Transmitter, and a real time clock
 - Programmed a Arduino and Python script to compute a Fourier Transform of incoming sound waves for triangulation
- **Potential Majors App** Feb 2021 – May 2021
 - Developed a database of required classes for different UIUC majors and minors hosted on Google Cloud Platform
 - leveraged MySQL queries for students to search for majors they are on progress to complete
 - Implemented the front-end using React.js and Bootstrap

SKILLS

- **Languages:** C++, Python, JavaScript, SQL, Java, HTML
- **Technologies:** Makefile, Git, Linux, Docker, React, Redux, Azure, AWS