

## EDUCATION

### University of Illinois, Urbana-Champaign

*Urbana, IL*

*Bachelor of Science in Computer Science & Statistics / GPA: 3.7/4.00*

Aug 2020 – Dec 2024

**Coursework:** Data Structures, Systems Programming, Computer Architecture, Algorithms & Models of Computation, Programming Languages and Compilers, Advanced Math & Statistics

**Extracurriculars & Honors:** Cybersecurity Club, Dean's List, Boxing Club, Jiu Jitsu Club

## EXPERIENCE

### Sandia National Laboratories

*Albuquerque, NM*

*Software Engineer Intern*

May 2024 – Aug 2024

- Optimized runtime of a C++ correlation algorithm by 40% through advanced mathematical techniques and implementation of C++ best practices.
- Implemented N-ball covariance to increase classification accuracy, increasing the model's average accuracy by over 100%.
- Refactored legacy C code to modern standards, increasing readability, maintainability, and security.
- Diagnosed and fixed bugs in correlation computations, preventing false positives in the model.

### ALDI USA

*Aurora, IL*

*NIT Developer Intern*

May 2023 – Aug 2023

- Developed new classes & HTTP requests in C# for the ALDI Real Estate Portal allowing for additional store information, such as, grocery cart type, to be logged, edited, and deleted.
- Automated Java update identification for thousands of ALDI systems using Python, and speeding up the process of updating Java across the company, saving IT  $\approx$  5 hours each week throughout the update process.
- Automated the process of translating EMV codes using Python, saving IT critical debugging time during payment system outages.
- Contributed to AGILE development sprints, attended daily standups, and collaborated with a team of 5 developers to complete our sprint goals.

### University of Illinois

*Urbana, IL*

*Lead Data Structures Teaching Assistant*

Jan 2023 – Dec 2024

- Led a team of 5 staff in updating and maintaining course assignments and infrastructure for 1000+ students.
- Identified and patched a vulnerability in the course's autograder that allowed students to elevate to root and run arbitrary code.
- Automated configuration of students' developer environments using Docker and shell scripts.
- Created assignments covering the implementation of Bloom filters, the A\* algorithm, and BFS.

## PROJECTS

### **DnD-Characters:** Dungeons and Dragons Character Management WebApp

- Developed a web application for managing your Dungeons and Dragons characters using a MERN stack.
- Implemented a RESTful API for creating, updating, and deleting characters and storing them in a MongoDB database.
- Created a user interface for viewing and managing characters, including their stats, backgrounds, and abilities.
- Utilized paseto tokens for user authentication and authorization, allowing secure access to user data.

### **Flight-Paths:** Analysis of Flight Paths Accross the World

- Performed comprehensive data analysis of flight paths across the world using C++.
- Used Dijkstra's algorithm, Tarjan's strongly connected component algorithm, and depth first search to answer various questions about the flight paths dataset.
- Created a visualization of flights across the world using the Mercator projection.

### **Password-Manager:** Password Manager Extension

- Wrote a password manager extension for chrome that creates, stores, and autofills passwords, in JavaScript.
- Implemented an algorithm that encrypts passwords using a master key, allowing for their secure storage.
- Built a secure method of mapping website names to encrypted passwords, preventing malicious websites from reading passwords for other websites.

## SKILLS & INTERESTS

**Programming Languages:** Python | C++ | C | Java | JavaScript | C#

**Computer Skills:** Docker | GitHub | GDB | Linux | Backend | Debugger | Valgrind

**Soft Skills:** Writing | Interpersonal Skills | Communication | Collaboration | Problem Solving | Leadership | Time Management

**Interests:** Programming, Projects, Data Science, Cybersecurity, Reading, Traveling