Neil Kozlowski

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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.
- Applied multivariate covariance analysis to improve algorithm stability, leading to a 100x reduction in numerical error.
- 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 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 ≈ 2 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

Custom Unix Shell: Unix-like Command-Line Shell | C, POSIX, Linux
- Designed and implemented a custom Unix-like shell in C, supporting interactive and script-based command execution.
- Built support for foreground/background external commands, logical operators (`&&`, `||`, `;`) and input/output redirection (`>`, `»`, `<`).
- Developed built-in commands: `cd`, `exit`, `!history`, `#n`, `!prefix`, `ps`, `kill`, `stop`, and `cont`.
- Added persistent command history loading/saving and script execution via command-line arguments.

Royale API: Deck Generator WebApp for Clash Royale | FLASK, Python, Javascript, MySQL, html, CSS
- Built a Flask-based web application to generate and search for Clash Royale decks using card data and player statistics.
- Integrated with the Clash Royale API to fetch real-time player and card data, storing it in a MySQL database for efficient querying.
- Designed RESTful endpoints to allow users to search for decks by card names or generate random meta decks.
- Implemented dynamic front-end features using JavaScript and AJAX for seamless user interaction.

Song-Recs: Song Recommendations SpringBoot WebApp | Java, Spring Boot, Thymeleaf, MySQL
- Developed a Spring Boot application to provide song recommendations based on track, artist, album, genre, and tempo.
- Integrated with the Deezer API to fetch song data and cached the results in a MySQL database to improve performance.
- Harnessed RESTful endpoints to search for songs and getting recommendations.
- Worked with Thymeleaf to implement the server side of the web application.

SKILLS & INTERESTS

Programming Languages: Python | C++| C | Java | JavaScript | C#
Computer Skills: Docker | GitHub | GDB | Linux | Backend | Debugger | Valgrind
Soft Skills: Teaching | Interpersonal Skills | Communication | Writing | Problem Solving | Leadership | Time Management
Interests: Programming | Projects | Systems | Cybersecurity | Reading | Traveling