LIAM SCOTT MULCAHY

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SUMMARY

A passionate and hardworking Computer Science Engineering student at the University of Michigan with previous internship experience. Environmentalist, crossword writer, and coder. Skilled in C++, Java, and Python, and an avid learner of new technologies and frameworks. Currently involved in SPARK Electric Racing, WolvSec, and Epsilon Eta on campus.

EDUCATION

University of Michigan College of Engineering   **Ann Arbor, MI**
Computer Science, Bachelor of Science in Engineering   *April 2024*
GPA: 3.80 / 4.00
- Coursework: Cybersecurity, Machine Learning, Web Systems, Programming Languages, Data Structures and Algorithms, Sustainability Engineering, Logic Design, Computer Organization (Architecture)
- Member of WolvSec, a CTF competition team, and Epsilon Eta Professional Environmental Fraternity

WORK EXPERIENCE

GE Appliances   **Louisville, KY**
Software Engineering Intern   *May 2022 - August 2022*
- Developed backend cloud infrastructure using AWS CloudFormation, S3, Lambda, and DynamoDB to migrate to the in-development V2 API, improving the Appliance API's reliability and response latency
- Automated CI/CD pipeline capabilities using Github Actions and bash scripts, such as testing and proper pull request basing, to decrease development and build cycle time and improve the automated code-review process
- Wrote backend implementations for different appliance teams, supporting and documenting the resolution of over 30 stakeholder requests and JIRA tickets throughout the summer
- Communicated and worked closely with various front-end and management teams, communicating the new structure and implementation of the V2 API, and writing documentation based on these requests for future development

Varsity Tutoring   **Remote**
ACT, Math, and Computer Science Tutor   *April 2021 - May 2022*
- Tutored Students in AP Computer Science, AP Statistics, and ACT
- 5.0/5.0 Average Client Rating

PROJECT & LEADERSHIP EXPERIENCE

SPARK Electric Motorcycle Racing   **Ann Arbor, MI**
Battery Management Systems, Software Team   *August 2022 - Present*
- Developed a battery management system to efficiently control, distribute, and monitor the onboard racing battery, and improve the bike's range and reliability
- Worked with electrical, mechanical, and embedded systems teams to coordinate and design the BMS to meet the bike's requirements, iteratively developing prototypes to test and improve relevant metrics

SQLite Relational Database
Project, Data Structures & Algorithms
- Built a hash-based relational database program in C++ for storing and retrieving data using a subset of the SQL commands to practice and learn more about implementing optimized algorithms and backend performance
- Implemented multiple hashing algorithms to efficiently generate indices of entries that matched user-input relational criteria
- Optimized memory overhead and processing speed throughout multiple iterations of development, writing custom testing scripts to perform unit testing, memory profiling, and fuzz testing.

SKILLS

Languages: C++, Python, Java, C, JavaScript (React, TypeScript), HTML5, Rust, OCaml, MATLAB, R, Verilog
Soft Skills: Technical Communication, Agile Workflow
Miscellaneous: Crossword Writing, Workflow/Productivity tools, Snowboarding, Environmentalism, Chess, Reading