Liam McBride

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EDUCATION

Virginia Tech   **May 2024**

BS, Computer Science, 3.24 GPA   *Blacksburg, VA*

WORK EXPERIENCE

Computer Systems Researcher   **May 2023 – Sept. 2023**

Virginia Tech   *Blacksburg, VA*

- Developed **Python** and **C** tests for **eBPF** programs to ensure program validity between kernel modifications to be used by other team members replacing **eBPF** with Rust
- Researched **Linux kernel development** with **eBPF** and Rust to evolve Linux toward memory safety

Software Engineer Intern   **Sept. 2021 – Aug. 2022**

Exelaration, Rhythm Energy   *Cary, NC*

- Enhanced usability of front-end customer support site with **React** and **Typescript,** providing more tools, faster processes, and clearer displays of information for support agents to increase customer satisfaction
- Created critical changes for the back-end with **Python, Django,** and **Docker,** allowing new functionality for customer support agents, such as fixing issues for users having multiple energy meters at different addresses
- Worked in cross-discipline teams with **Scrum** methodologies, and took **Certified Scrum Master** certification course

PROJECT EXPERIENCE

Hokie Life: React and MySQL Project   **May. 2024**

- Developed an interactive game for a SQL and database course, modeled after The Game of Life, where the player navigates several semesters as a Computer Science student at Virginia Tech
- Created detailed reports detailing user permissions, entities, relationships, ER diagrams, and relational schema diagrams. Normalized our schema and implemented it with **MySQL**
- Implemented endpoints and database interactions using **Flask**. Token authentication and SHA password hashing ensured proper security and user privacy
- Designed, tested, and connected **React** front-end with endpoints to display data and handle user interaction.

Full-stack React, D3 Visualization Site   **Feb. 2023**

- School project for Intro to GUI class; we visualized JSON data with a bar and dot chart made with **SVG** and **D3; t**he site was made using **React**, **Express** back-end, and **MongoDB**
- Created dynamic bar and dot charts that scaled to data, supported brushing multi-select and data-on-demand popups, and implemented multi-view functionality supported by **MVC** structure with a live data editor with real time updates reflected in both views
- Created back-end support for get and push requests that would fetch and supply data to **MongoDB**
- Added extra features such as cut, copy and paste across datasets; and supported new file, save, save as, and renaming features

CLUBS AND ACTIVITIES

Theta Tau: Professional Engineering Fraternity. Held Care Chair position, responsible for weekly update, holding office hours, and mental health programming