Shaquille Pearson

Email — LinkedIn — Portfolio

EDUCATION

University of Waterloo — Waterloo, ON
Master of Mathematics in Computer Science — *Jan. 2023 – Dec. 2024*

St.Georges University — St.George's, Grenada
Bachelor of Science in Information Technology — *Jan. 2018 – Dec. 2021*

EXPERIENCE

The Software REBELs — Waterloo, ON
Graduate Research Assistant — *Jan 2023 - Present*
- **Data Pipeline**: Designed and built a data filtration pipeline with **Python** and **GitHub APIs** that processed over **1.27 million open-source** projects.
- **Build Reproduction**: Led efforts to create reproducible build environments for **982 builds** in the **NPM** ecosystem using **Docker**, **Python**, **GitHub Actions** and **YML** files.
- **Algorithm Optimization**: Identified and categorized **156** new ghost commit patterns within the **Debian** ecosystem. Designed mitigation strategies to improve the **SSZ** algorithm's accuracy by **14%**.

University of Waterloo — Waterloo, ON
Instructional Apprentice / Teaching Assistant in CS — *Jan 2023 - Present*
- **Technical Assistance**: Assisted over **30+** students with coding assignments, particularly **debugging Python code** and resolving errors.
- **Communication and Collaboration**: Communicated effectively with students and instructors via email, forums, and in-person meetings, addressing inquiries and providing timely feedback.
- **Teamwork and Leadership**: Collaborated closely with course instructors and fellow instructional apprentices to lead tutorials, proctor exams, and coordinate grading.

Department of Public Information — Georgetown, Guyana
Junior ICT Officer — *Aug 2022 - January 2023*
- **Content Automation**: Developed an automation system using **Node.js** and the **Axios** library to interact with the DPI website's **REST** CMS API, enabling automatic updates for news articles and press releases etc.
- **Network Traffic Monitoring**: Used **Wireshark** and **Python** to monitor and identify traffic bottlenecks caused by IP conflicts on DHCP-assigned devices by **9%**
- **Database Optimization**: Conducted a full audit of **MySQL** DBMS to minimize redundant data and implemented **B-Tree** indexing on frequently queried columns which reduced query response times by **13%**

COURSES & PROJECTS

- **Software Analytics for Release Pipelines**: **Project** - Exploring Dependency Related Breakages In The NPM Ecosystem
- **Introduction To Machine Learning**: **Project** - Predicting Build Breakage With Machine Learning
- **Consensus Protocols & Blockchains**: **Project** - Code Review Practises On Ethereum Smart Contracts
- **Data Sources for Emerging Technologies**: **Project** - Exploring The Prevalence of Social Biases In State Of The Art Large Language Models (LLMs)
- **Software Engineering For Big Data & AI**: (**In progress**) Semantic Accuracy and Efficiency Evaluation Framework for Automated Code Review Comments
- **Beyond Relational DBMSs**: (**In progress**) A Graph-Based Approach to Dependency Management in NPM
- **Designing Value-Driven Tech**: (**In progress**) Sin Tracker - A Framework for Situational Recommendations in the Judicial System

PROGRAMMING SKILLS

- **Languages**: Python, JavaScript, TypeScript, C++, SQL, Cypher
- **Tools**: Docker, Git, GitHub [REST, GraphQL, Actions], Hugging Face
- **Frameworks**: React, React Native, ExpressJS, PyTorch, Django
- **Databases**: MySQL, KuzuDB, Firebase, Neo4J, MongoDB