

# Shaquille Pearson

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## SUMMARY

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Software Engineer with **3 years** of experience in **full-stack** development and building scalable applications. Proficient in **Python**, **TypeScript**, and crafting intuitive **frontend** interfaces, optimizing **backend** performance, and streamlining **CI/CD** workflows.

## EDUCATION

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- **University of Waterloo** Waterloo, ON  
*Master of Mathematics in Computer Science (GPA 3.30/4.00)* *Jan. 2023 – Dec. 2024*
- **St. George's University** St. George's, Grenada  
*Bachelor of Science in Information Technology (GPA 3.60/4.00)* *Jan. 2018 – Dec. 2021*

## EXPERIENCE

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- The Software REBELs** Waterloo, ON  
*Graduate Research Assistant* *Jan 2023 – Dec 2024*
- **Data Pipelines:** Engineered a **Python** data pipeline using **GitHub GraphQL** to efficiently process **1.27M** open-source projects, acquiring key build configuration and dependency data for robust downstream analytical applications within **PostgreSQL**.
  - **Reproducible Environments:** Established **982** reproducible build environments for **NPM** projects using **Docker**, **Python** scripting, and **GitHub Actions**. This facilitated consistent and controlled data analysis workflows.
  - **API Development:** Developed a **FastAPI (Python) REST API** with **Docker** to enable programmatic access to the reproducible build environment, automating dependency resolution and build validation for efficient data extraction.

- University of Waterloo** Waterloo, ON  
*Instructional Apprentice / Teaching Assistant* *Jan. 2023 – Dec. 2024*
- **CS 116 (Introduction to Python Programming) & CS 135 (Functional Programming with Racket):** Taught core programming concepts, **recursion**, and algorithmic analysis through tutorials and student support.
  - **SE 212 (Logic and Computation) & CS 251 (Computer Organization and Design):** Provided guidance on formal logic and **proof systems** through labs and office hours.
  - **CS 246 (Object-Oriented Programming in C++):** Reinforced object-oriented programming, **memory management**, and debugging practices via tutorials and code reviews.

- Department of Public Information** Georgetown, Guyana  
*Junior Software Developer* *Jan 2022 - Dec 2022*
- **Content Automation:** Designed and implemented an automation system using **Node.js** and the **Axios** library to interact with the DPI website's **REST CMS API**, enabling automatic, scheduled updates for news articles, press releases, etc, which reduced manual effort by an estimated **30%**.
  - **Frontend Performance Optimizations:** Optimized website performance by implementing **static site generation**, integrating **lazy loading** for non-critical assets, and **caching**, resulting in a **7%** reduction in page load times and enhanced user experience.
  - **Backend Performance Optimization:** Refactored **MySQL** database schemas to reduce data redundancy and improve query efficiency. Implemented **B-Tree** indexing on high-traffic tables, which optimized backend performance and reduced average query response times **13%**.

- St. George's University** St. George, Grenada  
*Teaching Assistant* *January 2020 - December 2021*
- **COMP 230 (Web Design) & COMP 305 (Advanced Programming):** Helped teach core front-end concepts like **DOM** manipulation, **state management**, and **asynchronous** programming with **RESTful APIs**.
  - **COMP 420 (Database Systems):** Explained foundational database concepts, including **data modeling**, **normalization levels**, and **relational schemas**.
  - **COMP 402 (System Design & Implementation):** Guided students on the design of complex systems, including the use of **message queues**, **proxies**, and **CDNs**.

## PROJECTS

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- **AI Pitch Deck Generator (In Progress):** AI-powered pitch deck generator, leveraging **Next.js** for a dynamic front-end and a microservice-oriented back-end with **NestJS**. Utilized **Tailwind CSS** for responsive design. Implemented user **authentication** and **authorization** flows using **Auth0**. Integrated the **OpenAI API** to generate and customize presentation content. **PostgreSQL** database to manage and persist user data. Includes a dynamic UI with **drag-and-drop** slide reordering, **editing**. It also **generates speaker notes**, **regenerates** content for individual slides, and can save the pitch decks in **PowerPoint** format.

## PROGRAMMING SKILLS

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- **Languages & Tools:** Python, TypeScript, C++, SQL, Cypher, Git, Docker, GitHub (REST, GraphQL, Actions)
- **Frameworks & Libraries:** Next.js, NestJS, React Native, PyTorch, Jest, Django, Hugging Face
- **Databases:** PostgreSQL, MySQL, Firebase, Neo4j, MongoDB

## VOLUNTEER ACTIVITIES

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- **Hack the North (2023):** Represented **David R. Cheriton School of Computer Science** at Hack the North, mentored prospective students on the benefits of graduate studies. Discussed a wide range of academic topics, from foundational computer science principles to specialized research areas, and helped them understand the transition from undergraduate to graduate-level work.
- **MISIT (2020):** Volunteered as Assistant Treasurer for the **Management Information Systems & Information Technology (MISIT)** student organization. Managed fundraising initiatives to donate computer systems to local schools and helped organize the **BeIT** (Be Information Technology) outreach program, to promote studying technology to underprivileged students.