Nathan Daniel

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Education

Queen's University | *Candidate for B.A.Sc. Computer Engineering* Sep 2021 – exp. Apr 2027

- Recipient of Betty Harrison Awards for Black Canadian Students (2021-2024)
- Relevant coursework: Algorithms, Computer Architecture, Data Structures, Microprocessor Interfacing & Embedded Systems, Object Oriented Programming, Data Science, Operating Systems, Probability, Electronics

Experience

Full Stack Developer @ QWeb Dec 2023 – May 2024

Queen's University – Queen's Extended Reality Team

- Developed a full-stack web application, focusing on dynamic front-end functionality with JavaScript and back-end integration using an RESTful API.
- Implementing a relational database to manage application state, with an ORM layer to streamline data access.
- Worked closely with the client to ensure the application's design meets the specified needs and user experience standards.

Projects

FantasyHoopz | *CSS, HTML, Java, JavaScript, PostgreSQL, Spring Boot* Aug 2024 – Sep 2024

- Developed a full-stack NBA fantasy basketball website storing data for 650+ NBA players, resulting in seamless integration between front-end and back-end systems.
- Built an interactive front-end interface using HTML, CSS, and JavaScript to create dynamic user experiences, effectively present data stored for NBA players, and handle up to 500 daily requests.
- Optimized PostgreSQL queries by designing efficient database schema and relationships, reducing query response time by 25%.

Kitchen Monitoring System | *Arduino, C++* Sept – Dec 2023

- Managed a team of 5 in the development of a Kitchen Monitoring System, enhancing kitchen safety using Arduino Uno and sensor technology.
- Wrote and optimized C++ code for Arduino to process sensor data and output real-time alerts within 5 seconds.
- Developed an alert system utilizing buzzers, triggered by specific sensor readings to indicate unattended appliances.

Rover Autonomous Algorithm | *Git, Python, Ubuntu* Jan – Apr 2022

- Led a team in the design and implementation of an advanced algorithm in Python to optimize the navigation and obstacle avoidance capabilities of a robotic rover
- Engineered obstacle detection mechanisms that enabled the rover to navigate complex environments with precision
- Conducted extensive testing and rigorous debugging iterations, meticulously adjusting, and refining the algorithm to ensure its accuracy and efficiency in real-world scenarios

Extracurricular

Q3C Dec 2023 – Present

Vice President, former Software Development Lead

- Development Lead for a secure password manager application that generates, stores, and manages user credentials
- Development focused on RSA encryption, with additional features for hardware token support

Technical Skills

- **Programming Languages:** C, C++, CSS, HTML, Java, JS, Python, SQL
- **Developer Tools:** Altera Quartus Prime, Git, GitHub, React, Spring Boot, Ubuntu, VSCode, XML
- **Boards & Tools:** Arduino Uno, Raspberry Pi, PCB Fabrication, Oscilloscope