Ahnaful Hoque

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Education

University of Alberta **May 2026**
Computer Engineering, Bsc Co-op *Edmonton, Canada*

Experience

BlackBerry QNX **January 2024 – August 2024**
Software Development Student *Ottawa, Canada*

- Achieved **100%** test coverage by writing and executing **blackbox** tests for QNX libc functions, ensuring a successful release of **QNX OS QOS 2.2.7**
- Enhanced QNX system functionality by identifying and resolving over **20** discrepancies in **QNX documentation and libc functions**, through raising **JIRA** tickets and collaborating with Core OS Development team
- Refined test accuracy by **8%** by adhering to **ISO 26262** functional safety standards and **MISRA C** guidelines, through updating and fixing **25+** existing tests to align with current QNX libc functions
- Improved testing strategies and practices through active participation in **code reviews**, reducing the time for tests to be committed to production from an average of **3 weeks to 1 week**
- Accomplished high-quality assurance for **QNX Everywhere** by reporting over **5** bugs through testing of key components and functionalities, and suggested new features to improve user experience, prior to its public release

Correct-AI **March 2023 – July 2023**
Junior App Developer *Edmonton, Canada*

- Boosted user satisfaction by **12%** by implementing **Nested Navigation** with Stack Navigator inside Bottom Tab Navigator, resulting in a more seamless and intuitive navigation flow
- Implemented **Client Credential Grant Flow** using Azure to securely obtain access tokens, allowing for **50%** more secure transactions daily and enhancing data protection
- Streamlined front-end development by **10%** by building reusable **React Native components**, reducing development time
- Leveraged **Microsoft Graph REST API** to efficiently retrieve and integrate data into the application, enhancing data accessibility and improving functionality by reducing data retrieval time by **40%**

Projects

RoboDrive | *Python, OpenCV, TensorFlow, Raspberry Pi*

- Collaborated with a Hackathon team to design an autonomous RC car to detect traffic signs and follow lanes
- Created a script using **OpenCV** to collect real-time training data for a machine learning model using a webcam, resulting in a more accurate model with improved performance
- Trained a **CNN model** in TensorFlow to accurately identify traffic signs using a dataset of **46,000** data points sourced from the web, achieving an **88%** accuracy rate

Navigation System | *C++, Python*

- Developed a navigation system for finding shortest paths on interactive map interfaces
- Implemented **IPC-based client-server communication** between the Python-based client and the C++ server
- Enhanced the server-side code by implementing **Dijkstra's** shortest path algorithm, achieving an **O(m log m)** complexity

Technical Skills

Languages: Python, C++, C, Java, HTML/CSS, JavaScript, SQL, VHDL, Matlab
Technologies/Frameworks: Linux, QNX, Unix, React, React Native, Next Js, Node.js, Postman, Bash, UML, Cadence, LTspice, SQLite, MongoDB, Raspberry Pi, ESP32, Azure, Firebase, AWS
Developer Tools: GitHub, Git, SVN, JIRA, VS Code, Postman

Extracurricular

University of Alberta Aerial Robotics Group **September 2022 – Present**
Software Developer - Autopilot

- Developed a search algorithm, utilizing a spiral pattern to systematically scan and locate drone landing pad
- Optimized drones drop location search with an inward spiraling technique, reducing search time by **25%**

Awards and Certifications

AWS Certified Cloud Practitioner credly
2nd Place – AEAC Unmanned Aerial Systems 2024 Student Competition
3rd Place Hardware Project – HackED Beta 2022 Devpost