Ali Taha

647-544-5933 ali.taha@uwaterloo.ca alitaha.ca linkedin.com/in/aliestaha github.com/aliestaha

Technical Skills

Languages: Java, C, C++, Python, HTML/CSS, JavaScript, VHDL, SQL, Chef, Bash
Frameworks: FreeRTOS, Node, Vue, RESTful APIs
Tools: GNU (GCC, Make, GDB), GTest, Linux, PostgreSQL, CMake, Git, Jira, Confluence, MongoDB, WSL
Certificates: Loran Scholar Citation (**1 of 60** worldwide), Trustee's and Joe Hugel Award:(**99%**) average, Harvard CS50x

Experience

Blackberry **May 2023 – August 2023**
Automation Developer Co-Op *Waterloo, Ontario*

- Engineered a tool to visualize service records, improving disaster recovery and incident response time, using **VueJs** to create a user-friendly interface, and **NodeJs** on server-side to handle backend operations.
- Utilized **PostgreSQL** for efficient data management, implemented dynamic search functionality, optimized SQL queries for faster data retrieval, and implemented a robust back-end API.
- Achieved a **75%** reduction in processing time by shifting to **JIRA DB**, utilizing **Chef**-managed **cron jobs**.
- Built Python scripts for rapid, automated email alerts on key **PostgreSQL database** changes. Achieved **sub-2-second** delivery of asynchronous notifications, optimizing responsiveness of internal teams.

UW Orbital, CubeSat Design Team **July 2023 – Present**
Firmware Team Core Member *Waterloo, Ontario*

- Created real-time software and device drivers for a **TI RM46** microcontroller using **C** and **FreeRTOS**.
- Configured responsive **OS interrupt handling** for Temperature Sensors like the LM75BD, ensuring mitigation of over-temperature shutdown events.
- Implemented over **5 I2C**-based sensor driver functions and facilitated **UART** data transmission.
- Integrated **TCP/IP** stack for network communication and designed dynamic **queue** systems.
- Architected and integrated a unified system-wide logging mechanism across diverse software components, ensuring consistent error code handling and streamlined logging for enhanced system reliability in embedded systems.

Waterloo Formula Electric Design Team **October 2022 – May 2023**
Firmware Developer *Waterloo, Ontario*

- Resolved over **3 linter** tasks, rebased the codebase, and tracked team progress using **Bitbucket** and **Jira**.
- Implemented safety and battery failsafe detection for **8** unique events in **C** on an STM32 Microcontroller.

Enginera **January 2021 – June 2022**
Front-End Developer *Mississauga, Ontario*

- Used **HTML**, **CSS**, and **JS** to implement responsive design for over 3 different screen sizes and increase mobile traffic.

FIRST Robotics Team **Spetember 2020 – April 2022**
Programming Team Lead *Mississauga, Ontario*

- Awarded as **District Event Winner**(2022), and **District Event Finalist** by University of Waterloo.

Projects

CubeSat Thermal Management | *C, FreeRTOS* **August 2023**

- Successfully integrated a minimal thermal management system, showcasing proficiency in hardware communication protocols, including **SPI, I2C, and UART**, and **real-time task synchronization**.
- Leveraged cross-platform compatibility tools including **WSL2**, **CMake**, **GCC** to establish a streamlined development environment across Windows, MacOS, and Linux platforms, expediting project setup **by 20%**.

LikeIt Social Media Web App | *HTML, CSS, JavaScript, Nodejs* **December 2022**

- Implemented server-side infrastructure using **Node.js**, ensuring efficient handling of high data and user traffic.
- Instated a **storage** solution for user data, such as profiles, posts, and likes utilizing **MongoDB** as the database.
- Integrated real-time updates and user interactions using **Express.js** for routing and handling HTTP requests.
- Maintained **privacy** features by implementing **JWT** authentication and using the **bcrypt** library to **hash** passwords.

Dogsitter: Hack The North Project | *HTML, CSS, JavaScript, Ruby* **September 2022**

- Collaborated with **three** others in a **team** to create a dog-sitting **full stack** website in under **36 consecutive** hours.
- Implemented over **6 interactive features** using **REACT**, including smooth scrolling and a search bar.
- Developed a method for user data storage using **Ruby on Rails**, connected to a **MySQL** and **SQLite** database.

Education

University of Waterloo **Sep. 2022 – May 2027**
Candidate for Bachelor of Applied Science : Computer Engineering Honours *Waterloo, ON*