Farzad Rahman

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Education

University of Waterloo — Waterloo, ON
Bachelor of Applied Science, Computer Engineering — *Expected Apr. 2027*

Technical Skills

Languages: C/C++, SystemVerilog, VHDL, ARM Assembly, JavaScript, Python, Java, Swift, MATLAB
Web & Mobile: React, Node.js, React Native, REST APIs, GraphQL
Testing & QA: Cypress.io, Selenium, Unit Testing, Integration Testing, Performance Testing

Experience

Blair Health — Jan. 2025 - Apr. 2025
Fullstack Developer

- Built and launched a full-stack MVP in under **30 days**, enabling rapid validation with **25+** early users; implemented onboarding, menopause and medical profile assessments, and a personalized treatment plan system
- Co-defined and deployed the entire architecture (Supabase, React, Node.js, Vercel) supporting seamless user experience, secure data storage, and scalable backend APIs across **3 core health modules**
- Collaborated directly with one of the top 3 OBGYNs in the country to develop a ML-assisted treatment recommendation engine, improving plan personalization accuracy by **40%** in early clinical feedback

Clearpath Robotics — May. 2024 - Aug. 2024
Software Test Engineer Intern

- Optimized robot software performance by enhancing the OTTO-MOTORS Robot Fleet-Manager and OTTO-APP simulation system, ensuring reliable fleet operation and pathfinding accuracy in dynamic environments.
- Reduced automation test flakiness by 66% in Cypress scripts, improving the stability of the testing process for embedded systems and robot software, leading to more consistent hardware-software integration results.
- Developed a multidimensional testing system for Fleet-Manager by applying mathematical transformations to simulate and verify robot pathfinding and navigation, ensuring precise interaction between hardware controllers and automation systems.

Waterloop Hyperloop Design Team — Jan. 2024 - Apr. 2024
Firmware Engineer

- Introduced accelerometer and gyroscopic functionality to STM32-Nucleo Microcontroller for high-speed transportation hyperloop pod.
- Connected hardware components on board while including i2c (later UART) protocol communication.
- Wrote initialization and calibration functions for MPU6050 Inertial Measurement Unit (IMU) supporting accelerometer and gyroscopic diagnostics.

BlackBerry — Sep. 2022 - Apr. 2023
Software Development Engineer in Test

- Validated the Cylance Multi-Tenant Console platform by identifying and resolving critical bugs through manual and automated testing, ensuring high-quality releases and minimizing production defects
- Expanded test coverage by **30%** through developing and debugging test cases using xUnit for backend services and Cypress.IO for frontend components, extending tests to validate integrations between the Multi-Tenant Console (MTC) and Unified Endpoint System (UES)
- Designed and implemented a Jenkins-based automation framework in Groovy with customizable PowerShell commands, decreasing release testing time by **40%** and enabling dynamic test runs across environment configurations (region, stage, test suite choice)

Projects

Matrix-vector Multiplication (MVM) Engine | *System Verilog, PYNQ-Z1, Vivado* — Jul. 2025

- Developed a pipelined SystemVerilog Matrix-Vector Multiplication (MVM) engine, mirroring architectures like the Microsoft BrainWave deep learning accelerator, through the design of an FSM controller, parallel dot product units, and accumulators.
- Implemented memory modules with precise addressing, including interleaved matrix storage, and managed data flow with specific read/write latencies to enable optimized parallel processing across multiple output lanes.
- Debugged and ensured accurate pipeline timing and data propagation using waveform analysis, resolving synchronization issues for correct numerical results in a multi-stage hardware pipeline.