Elizabeth Fabiyi

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Summary

Engineering Physics student (Graduating May 2027) specializing in machine learning, robotics, and controls. I design and implement robust embedded and robotic systems, integrating hardware, firmware, and control software to solve automation challenges. Beyond the classroom, I am heavily involved in campus leadership through the UBC Women in Data Science, NSBE and the UBC Formula Electric design team.

Skills

Programming & Data: C/C++, Java, Python, MATLAB, SQL, NumPy, Pandas, PyTorch, scikit-learn, Matplotlib
Robotics & Embedded Systems: ROS, Embedded C++, FreeRTOS, Git, Linux, Control Systems, ARM-based Microcontrollers and Peripherals
Hardware & Design: PCB Design (KiCad, Altium), CA (Fusion 360, Onshape), Rapid Prototyping, Soldering

Experience

InSporos (Ag-Tech Startup) Jan. 2025 – April 2025
Research and Development Intern *Vancouver, BC*

- Boosted system performance by developing **computer vision** tools with OpenCV and resolving bugs in the **Python and C++** codebase, leading to more reliable **model predictions** and smoother operation for technicians.
- Reduced mechanical vibrations by **30%** through CAD-based structural redesign and hands-on fabrication using precision **machining tools**, enhancing data quality and hardware longevity.
- Engineered a standardized **greenhouse imaging system** to improve machine learning input consistency; designed and **3D-printed** custom parts (**Fusion 360**), produced PCB schematics (**KiCad**), integrated **sensors/LED arrays**, and programmed control logic in **C++**.

Amazon Jun. 2024 – Sept. 2024
Software Development Engineer Intern *Vancouver, BC*

- Optimized internal product validation pipelines using **Java** and **Python**, reducing manual overhead by an estimated **800 hours annually** and improving code reliability through unit and regression testing.
- Led a cross-functional initiative resolving an incident affecting **300K customers**, coordinating with several stakeholders across engineering, data science and customer-facing teams to deliver a high-quality solution using **Agile methodologies**.

EHS Analytics (Health-tech Startup) Jun. 2023 – Sept. 2023
Data Science and Software Engineering Intern *Calgary, AB*

- Created data processing pipelines using **Pandas**, **NumPy**, and **SQL** to prepare and label **1,000+ incident and environmental reports**, enabling accurate AI model training and powering **5 Power BI dashboards** that drove client insights and strategic decisions.
- Refactored and optimized an **AngularJS** frontend and developed scalable **TypeScript microservices** for data ingestion, improving backend reliability and reducing load times by **10%**.

Leadership and Projects

UBC Formula Electric Sep 2025 - Present
Controls Team Member *Vancouver, BC*

- Translated mathematical and physical models of vehicle dynamics into **real-time control algorithms** in C/C++, supporting **torque vectoring**, **stability**, and **motion control** development for an electric race car.
- Implemented a **robust PID control library** in C featuring **anti-windup**, **derivative smoothing**, **feed-forward control**, and **back-calculation**, enabling precise and tunable feedback across control subsystems.

Autonomous Pet Rescue Robot Project Aug 2025
Team Member *Vancouver, BC*

- Designed and manufactured a **fully autonomous rescue robot** integrating **LIDAR navigation**, **Hall-effect sensors**, and an ESP32-based embedded control system, achieving a **top-3 ranking out of 16 teams**.
- Engineered a custom **Altium PCB** for pet detection, prototyped lift mechanisms and structural components in **Onshape**, and optimized embedded logic in **C++**, improving detection reliability and actuation speed.
- Built a lightweight sensor logging system using Node.js and JavaScript and multicore programming, enabling real-time debugging and performance optimization.

Autonomous Robot Simulation Project Sep. 2025 – Dec. 2025
Course Project – Machine Learning in Robotics *Vancouver, BC*

- Trained a simulated robot in **ROS**, **Gazebo**, and **OpenAI Gym** using **Reinforcement Learning (DQN, PPO)** and **Imitation Learning** to navigate dynamic environments with obstacle avoidance, achieving **90% success** and convergence within **150 episodes**.
- Built an **OpenCV** + **CNN** vision module for billboard text recognition on **200+ images**, integrating vison into the robot's control system.

Education and Interests

University of British Columbia Vancouver, BC
Bachelor of Applied Science, Engineering Physics - Software and Mechatronics Spec. *Expected Graduation Date: May 2027*
Awards and Recognitions: Loran Scholar, Amazon Future Engineer, Ted Rogers Future Leader Award, Onyx Scholar
Clubs and Affiliations: Ethos Lab, ColorStack, UBC Women in Data Science, Girls Who Code, NSBE, UBC AAI, Engineering Undergraduate Society