Amjad Yaghi

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Education

Bachelor of Applied Science, Engineering Physics (Co-Op) Sep. 2021 – Apr. 2026
University of British Columbia *Vancouver, BC*

- Including a four-month exchange at Nanyang Technological University, Singapore

Experience

Rocket Payload Designer Sep. 2022 – Aug. 2023
UBC Rocket *Vancouver, BC*

- Designed and launched an experiment testing tPA's effects on **blood clots** in **microgravity** for deep-space missions using linear actuators and solenoid valves
- Created a **Processing-based GUI** with buttons to activate linear actuators and display limit-switch states from an Arduino's serial monitor
- Housed the experiment in a **3U+ CubeSat** that soared **30,000ft** above sea level on a two-stage rocket

Project Coordinator Jan. 2023 – Apr. 2023
EllisDon Corporation *Vancouver, BC*

- Played a pivotal role in the ongoing **26-acre** Oakridge redevelopment project, performing on-site tasks to gather data, photograph sites, and bridge communication between the prime consultant and EllisDon tradespeople
- Authored, reviewed, and disseminated **100+ RFIs and submittals**, ensuring clarity and effective communication among all project stakeholders
- Enhanced departmental processes by implementing automated **Google Sheets scripts** that generated organized folder structures and user-friendly UIs, improving document accessibility and usability
- Received accolades for integrating computer science methodologies into civil engineering tasks, culminating in an invitation to present innovative solutions to EllisDon's international VDC team

Projects

Fitness Sync Music Platform | *Node.js, Express, Axios* Aug. 2024 – Sep. 2024

- Built a backend server with **Express.js** to integrate **Fitbit** and **Spotify APIs** for fitness-driven music experiences
- Implemented **OAuth 2.0** for secure authentication and managed API tokens for continuous data access
- Developed **RESTful endpoints** to sync real-time Fitbit heart rate data with Spotify track tempo

Autonomous Mario Kart Robot | *Arduino, STM32, Bluepill* May 2023 – Aug. 2023

- Spearheaded software development for a unique autonomous robot in a head-to-head competition, being one of only two teams out of 17 to attempt and successfully use the **zipline mechanism**
- Designed and implemented a **convolution algorithm** on **Arduino** for precise IR beacon tracking, overcoming external IR interference and demonstrating signal-processing expertise
- Engineered an autonomous coin-collection claw, triggered by sonar feedback, which slid down a steel pipe to retrieve magnetically-attached coins
- Integrated **buck converters** to stabilize power across four motors, improving overall performance

Machine Learning Sentiment/Synonym Detector | *Java, GitHub* Sep. 2022 – Oct. 2022

- Applied a **machine learning algorithm** to parse a database and determine synonyms for a given word
- Used a cosine similarity calculation to compare word similarities and pick the strongest match
- Implemented a similar approach to assess whether Rate My Professor reviews were generally positive or negative

Autonomous Mechanical Claw | *SOLIDWORKS, Arduino, Servo Motor, C++* Jan. 2022 – Feb. 2022

- Designed a **SOLIDWORKS-based claw** that automatically retrieved objects based on sonar sensor data
- Integrated popsicle sticks, a servo motor, and elastic bands to lift objects weighing up to 5kg
- Programmed the motor's response to sensor input in **C++** using the **Arduino IDE**, outperforming other models

Skills & Interests

Technical Skills: Git, MATLAB, Arduino, Circuitry, Servo Motors, Google Apps Script
Programming Languages: Java, JavaScript, Python, C, C++, LaTeX, Bash
Languages: English (Fluent), French (Fluent - 12 years of immersion), Arabic (Proficient), Chinese (Beginner)
Interests: Traveling, Music Production, Video Editing, Gymnastics, Bouldering