

# AMJAD YAGHI

(647) 568-9066 | [Portfolio & Blog](#) | [amjadclnyaghi@gmail.com](mailto:amjadclnyaghi@gmail.com) | [LinkedIn](#) | [GitHub](#)

## EDUCATION

### Bachelor of Applied Science, Engineering Physics (Co-Op)

Sep. 2021 – Present

University of British Columbia

Vancouver, BC

- Relevant Coursework: Data Structures & Algorithms, Applied Linear Algebra, Signals & Systems, Machine Learning
- 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 to test tPA effects on blood clots in microgravity using linear actuators and solenoid valves, which was housed in a 3U+ CubeSat launched to **30,000ft**
- Developed a **Processing GUI** to control actuators and monitor limit switches via Arduino, enhancing data collection

### Project Coordinator

Jan. 2023 – Apr. 2023

EllisDon Corporation

Vancouver, BC

- Automated departmental processes with **Google Sheets scripts**, improving document accessibility and efficiency
- Presented innovative computer science solutions to EllisDon's **international** VDC team, earning accolades
- Managed **100+ RFIs and submittals**, ensuring clear communication among project stakeholders

## PROJECTS

### 🔗 Projection-Mapped Interactive String | Python, Processing, OpenCV

Dec. 2024 – Present

- Created an interactive guitar string projection using **Processing**, allowing users to "pluck" the string by casting shadows with a finger
- Integrated a custom chord-selection system inspired by music theory, enhancing the interactive experience
- Utilized **OpenCV** for real-time contour detection to trigger string vibrations and display visual effects

### 🔗 Multitasking Simulation Agent | Python, Gazebo, OpenCV, TensorFlow

Sep. 2024 – Dec. 2024

- Developed a **Gazebo agent** for terrain navigation and text recognition, ensuring safe multitasking through state-machine control
- Implemented PID control for precise driving on track marks and tracking moving targets in off-road navigation
- Utilized **OpenCV** for pedestrian detection and image preprocessing, optimizing input to a **Convolutional Neural Network** in **TensorFlow** to achieve >90% classification accuracy on blurry and rotated symbols

### Fitness Sync Music Platform | Node.js, Express, Axios

Aug. 2024 – Sep. 2024

- Built a backend server with **Express.js** integrating **Fitbit** and **Spotify** APIs for fitness-driven music experiences
- Used **OAuth 2.0** to sync heart rate data with Spotify and match songs to real-time BPM from friends' streams

### 🔗 Autonomous Mario Kart Robot | Arduino, STM32, Bluepill

May 2023 – Aug. 2023

- Spearheaded the software development of a unique autonomous robot for a head-to-head competition, being one of only two teams out of 17 to successfully use the **zipline mechanism**
- Designed and implemented a **convolution algorithm** using **Arduino** to enable precise infrared beacon tracking
- Engineered an autonomous coin-collection claw, triggered by sonar sensor feedback, which slid down a steel pipe to collect magnetically-attached coins in the competition
- Integrated **buck converters** to stabilize power across four motors, enhancing the robot's overall performance

## SKILLS & INTERESTS

**Technical Skills:** Git, MATLAB, Arduino, Circuitry, Google Apps Script, OpenCV, TensorFlow, State Machines

**Programming:** Java, JavaScript, Python, C/C++, Bash

**Languages:** English (Fluent), French (Fluent - 12 years of immersion), Arabic (Proficient), Chinese (Beginner)

**Interests:** Projection Mapping, Interactive Environments, Traveling, Music Production, Video Editing, Gymnastics