AMJAD YAGHI

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EDUCATION

University of British Columbia — Vancouver
Bachelor of Applied Science, Engineering Physics (Co-Op) — Expected May 2027

EXPERIENCE

Generative Models.ai — Toronto
Software Engineer Intern — May 2025 – Aug. 2025

- Designed a **parallelized LLM blog-generation pipeline** that split outlines into per-heading prompts, enforced strict JSON schemas, and recombined validated sections so long-form drafts could be generated quickly and reliably
- Built a **GEO/SEO + readability scorer and website auditor** that analyzes structure, paragraph/sentence lengths, link quality, and headings to produce rewrite recommendations (GEO = optimizing content to be surfaced by LLM search)
- Scraped and analyzed **819 real-world sites**, finding only 12 using llms.txt (robots.txt-style LLM indexing), and wrote a report that directly informed roadmap priority toward llms.txt tooling
- Implemented Django APIs and Temporal workflows to queue long-running analyses and **prevent request collisions**, keeping demos and beta runs stable under concurrent usage

Medical EdTech Startup — Toronto
Full Stack Developer (Contract, Part-time) — Apr. 2025 – Sep. 2025

- Built a voice-first **patient examination simulator** in React + TypeScript (Tailwind) with cross-browser speech-to-text/text-to-speech, live transcript, and auto-send voice detection to mimic timed patient interviews
- Integrated **Gemini for patient responses** and implemented rubric-based semantic scoring with curated acceptable phrases **to reduce hallucinations**, generating per-skill breakdown feedback (communication/diagnosis/history)

STUDENT DESIGN TEAM

UBC Rocket — Vancouver
Software Engineer, Payload Controls — Sep. 2022 – Aug. 2023

- Built Python controls + a PyQt ops GUI for a **microgravity medical experiment**, controlling valves/actuators and logging sensors to test whether blood-clot breakdown methods work in free-fall (**3U+ CubeSat form factor,** $\sim$**30,000 ft**)

PROJECTS

Autonomous Badminton-Playing Robot (Capstone) | *OpenCV (Stereo), EKF, ODR, ESP32/STM32, HTC Vive*

- Building an **offboard stereo vision system** (2MP $\sim$100 FPS, 1.5m baseline) using OpenCV stereo calibration + ChArUco to triangulate shuttlecock 3D position across a 13m court
- Implementing trajectory prediction from the first 100–200ms of flight: fitting a flight plane via orthogonal distance regression and fusing a physics model with an EKF to estimate intercept point **(target** $\pm$**5cm)**
- Fusing predicted intercept with HTC Vive robot pose at a ground station and streaming motor commands over wireless MCU link to drive a mecanum base under a **250ms reaction-time constraint**

Multitasking Simulation Agent 🔗 | *Python, ROS, Gazebo, OpenCV, TensorFlow, Qt*

- Built a ROS driving agent that reads license plates via OpenCV and a TensorFlow CNN trained on $\sim$**1,600** labeled character crops ($>$**90%** sim accuracy in Gazebo); prototyped imitation learning and shipped PID control for final demo

Autonomous Mario Kart Robot 🔗 | *Arduino, STM32 (ARM), C++*

- Built a fully autonomous Arduino+STM32 Mario Kart robot using an FSM, **10 kHz** IR-beacon homing (via **convolution filtering**), and sonar edge detection for recovery; built a **zipline claw** that latched reliably to shortcut the course

SKILLS

Languages: Python, TypeScript, JavaScript, C, C++, SQL, MATLAB
Frameworks & Systems: React, Django, ROS, OpenCV, TensorFlow, PostgreSQL, Docker, Temporal, Arduino/STM32/ESP32