

# Lucas Arzoumanian

613-246-8222 | [larzouma@uwaterloo.ca](mailto:larzouma@uwaterloo.ca) | [linkedin/lucas-arzoumanian](https://www.linkedin.com/in/lucas-arzoumanian)

Eligible to work in: Canada, USA, EU

Languages: English, French, Polish

## WORK EXPERIENCE

### CANADENSYS AEROSPACE | MECHATRONICS ENGINEERING INTERN Toronto, ON | Sep 2022 - Dec 2022

- Designed and built entire **FlatSat** rig to test space bound hardware, simulating all the satellites' functions: requiring power draw calculation for each peripheral to simulate with resistor bank, torque tester for motors, power supply bank to simulate solar array etc...
- Performed Derating Analysis on 4 mission critical PCBs to ensure reliability in extreme environments, used **KiCAD**
- Implementing motor control **PID** safeguards written in **C** to avoid run-away motors
- Designed all mechanical parts and drawings to machine and 3D print in **Solidworks**

### UBISOFT | R&D ENGINEERING INTERN Toronto, ON | Jan 2022 - Apr 2022

- Developed and configured quadcopter (Bebop 2) drone automation using **PID control loop** from Vicon motion capture data (**ROS + Ubuntu scripting**) with corresponding web app (**Javascript**) for path planning
- Designed and built remotely controlled camera focus tracker using **Adafruit HUZZAH esp32** with encoder transmitting over network (UDP and OSC), coded GUI with **Qt Pyside** and **Python**
- Testing circuit boards with **oscilloscope** and soldering electrical components
- Designed all mechanical parts with **Fusion 360**, including drone modifications and electrical casings

### ACRYLIC ROBOTICS | ROBOTICS ENGINEERING INTERN Montreal, QC | May 2021 - Aug 2021

- Dynamic start-up environment where I led a team of robotics interns to design and build the prototype
- Configured **ROS** as the control software on a **Raspberry pi** using Ubuntu
- Designed parts and assembly, as well as the drawings, in **Solidworks** for 3D printing
- Designed and implemented electrical and embedded systems, schematics done in **Altium**
- Scoped out the hardware and materials needed to construct the prototype (ex: motors, micro-controllers, cameras)

### SWAP ROBOTICS (prev. TOP HAT) | ROBOTICS ENGINEERING INTERN Waterloo, ON | Sept 2020 - Dec 2020

- Spearheaded assembly of entire electromechanical system including soldering, wiring, cutting and assembling metallic frame and polycarbonate paneling
- Created wiring schematics for robot using **KiCAD** and designed optimal testing conditions to test robot functionality
- Worked with an **Nvidia Jetson** using **Python** to control the robot

### COMPENDIUM GROUP | ENGINEERING INTERN Prescott, ON | Jan 2020 - Apr 2020

- Assisted in turnkey engineering services from assessment of customer needs to conception, design specification, production, assembly, testing, and quality checks to ensure standards are met
- Power and hand tool operation and finishing in the machine shop
- Utilized SolidCAM in **Solidworks** (GD&T) following design to generate G-code for CNC machining (FANUC Series Oi, Haas Automation 5-axis)

## EDUCATION

### University of Waterloo Bachelor of Science Honours Mechatronics Engineering

Waterloo, ON | Sep 2019 - Apr 2024  
Cumulative GPA: **3.9/4.00**

**Research:** Collected real time motion tracking data to improve wearable device for rehabilitation purposes (Supervisor: Professor James Tung, Mechanical and Mechatronics Engineering, Centre for Bioengineering and Biotechnology)

## Scholarships:

Paul Koenderman Engineering Scholarship  
Presidential Scholarship of Distinction  
Thousand Island Engineering Chapter Scholarship  
Governor General Award

Rotary Club Scholarship  
Professional Engineers of Ontario Scholarship  
Schulich Leader Nominee  
Shell Oil Corporate Scholarship

## TEAM PROJECTS

### MARS ROVER DESIGN TEAM - UNIVERSITY OF WATERLOO

MECHANICAL DESIGNER

- Designed, manufactured, and installed parts on Mars Rover using **SolidWorks**
- Collaborated with electrical and software subteams to optimize performance and integration leveraging **MATLAB** to simulate test scenarios

### ROBOTICS TEAM - ACADÉMIE CATHOLIQUE ANGE-GABRIEL

TEAM FOUNDER/CAPTAIN

- Implemented design that led to winning **1st place** at Provincial Robotics and Control Systems Competition, **Skills Ontario**
- Effectively integrated various sensors (photosensitive, ultrasonic, magnetic) and motors/servos
- Designed and optimized robot for precision-based tasks using

## SKILLS

**Hands-on:** Practical CNC machining, 3D printing, Machine shop, Soldering, Hand and Power tools, Wiring

**Design Software:** SolidCAM, SolidWorks, KiCAD, Labview, AutoCAD, Altium

**Programming:** C++, Python, JavaScript, HTML, CSS, MATLAB

**Interests:** Flying (Glider and Single-engine aircrafts), Shotokan karate (black belt), classical guitar (Level 8 RCM), Stand-up comedy