Lucas Arzoumanian

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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 environements, 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 0i, Haas Automation 5-axis)

EDUCATION

University of Waterloo — Waterloo, ON | Sep 2019 - Apr 2024
Bachelor of Science Honours Mechatronics Engineering — Cumulative GPA: **3.9**/4.00

Research 2023: Nonlinear Rocket Trajectory Optimization via Trajectory Sensitivities (Supervisor: Professor Michael Fisher, Electrical and Computer Engineering)

Research 2021: 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