

Sophia Liovas

(647)667-3844

saliovas@uwaterloo.ca

www.linkedin.com/in/sophialiovas

EDUCATION

University of Waterloo

Bachelor of Applied Science (B.A.Sc.) in Mechanical Engineering
CLASS OF 2028

WORK EXPERIENCE

Bruce Power | Nuclear Engineer Co-op

CURRENT

- Supporting Major Component Replacement (MCR) activities on Unit 4 with a focus on tooling and retube work platform integration
- Assigning work orders to contractors and engineering groups while maintaining project timelines
- Designing tooling and weldments to reduce critical path time
- Building Digital Twins for Tooling

ATS Corporation | Industrial Automation Co-op

JANUARY 2024 - MAY 2024

- Authored the Design Plan, outlining the overall systems design plan for the upcoming Pickering Nuclear Generating Station refurbishment
- Diagnosed critical path failures in automated tooling workflows; introduced redundancy to improve reliability and operational uptime
- Performed mechanical and structural design calculations on specialized inspection equipment used in reactor maintenance

Kinectrics | Overhead Lines Technician

JANUARY 2024 - MAY 2024

- Developed ASME Y14-compliant technical drawings using SolidWorks for the precision machining of an ultrasonic sensor prototype
- Designed hardware for Creep Tests with a load capacity of up to 20,000 lbs using SolidWorks assemblies
- Utilized LabVIEW to operate various control apparatus

PROJECTS

MuSHR Autonomous Car Simulation

- Complete Simulation Pipeline for MuSHR style toy car inside Isaac Sim with rigid body physics and articulated steering joints
- Integrated the simulation with a ROS Bridge publishing simulated sensor data
- Designed a full control testing environment with colliders, surface physics waypoint paths

6-Axis Robotic Arm - Cycloidal Joint Drive + URDF (In Progress)

- Generated a complete URDF model with accurate link geometries and inertial properties for future Isaac Sim integration
- Developed a dual stage 21:1 cycloidal gearbox achieving 65% efficiency and fully 3d printable construction

CONTROLS & SOFTWARE

Udacity Robotics Software
Engineer Nanodegree

ROS2

Isaac Sim

Python

C++

PLC Programming

State Diagrams

Ladder Logic

MATLAB

CAD

SolidWorks

Fusion 360

AutoCAD

ANSYS

MANUFACTURING

GD&T

TIG/MIG Welding

3D Printing

Sheet Metal Design

Machining

Carpentry

INTERESTS

Varsity Pentathlete

NAYGN local chapter member

OCNI Chair

Avid Snowboarder

AWARDS

2025 CNA Student Scholarship

2024 Stellantis Student Award

University of Waterloo President's
Scholarship

OFSAA Medalist (2x)