

James Gullberg

226-503-6841 | j.c.gullberg@queensu.ca | jcgullberg.github.io | linkedin.com/in/j-gullberg

Education

B.A.Sc in Mechatronics & Robotics- Queen's University, Kingston ON

September 2023 – May 2027

4.0 GPA with distinction of **Dean's Scholar**.

Professional Experience

Undergraduate Researcher - Reactor Materials Testing Lab, Queen's University

May 2024 – Present

- Designed and implemented a beam profile monitor actuator for a Tandetron proton accelerator, utilizing an air cylinder for actuation and communicated over WiFi with several ESP32s, increasing operational efficiency.
- Improved a previous design of a cold trap, redesigned to use minimal number of new parts & decreased surface temperatures from -15 to -25 °C and increased vapor collection capabilities.
- Developed a molten salt test cell to allow samples to be irradiated while in contact with molten salt at >900°C, to aid in research on next-gen molten salt reactors.
- Produced engineering drawings adhering to ASME Y14.5 standards, including GD&T conventions.
- Received an USRA from NSERC for summer funding, contract extended part-time through year by Queen's.

Salesperson - Malisa Fashion

March 2023 – July 2023

- Proactively engaged and communicated with prospective clients via email to drive revenue growth.

Practical Experience

Aerostructures Manager - Queen's Aerospace Design Team

October 2023 – Present

- Leading a team to design and fabricate two carbon fiber UAVs to compete in the AEAC 2025 competition.
- Designed and produced components of a VTOL that competed at the AEAC 2024 competition as a general member, including producing the composite molds, tail & wing internal structures and electronic mounts.
- Used advanced composite lay-up techniques, waterjet cut internal structure, and 3D printing for fabrication.

Director of Mechanical - Queen's QVEX Robotics Team

March 2024 – Present

- Oversaw the development and design of two fully custom robots for the VEXU robotics competition.
- Coordinated with Directors of Electrical and Software, delegated subsystems to Project Leads and ensured designs integrated seamlessly and aligned with project goals.
- Led the design for one of the first differential swerve-drive drive bases in VEX history.

QUESST Competition - 2nd Place

November 2023

- Competed to develop and pitch a design & business plan of a sustainable solution to a real world problem.
- Collaborated with industry professionals to identify key sustainability issues in their respective fields.

Starting a 3D Printing & Design Business

March 2022 – August 2023

- Used Onshape to make custom products for clients & original designs, implementing DFA & DFM principles.
- Utilized FDM 3D printing for fabrication.
- Sold products on Etsy and Facebook and marketed through Tik Tok, Reddit, & several Meta platforms.
- Generating over **\$13K** in sales.

Technical Skills

Hardware: 3D Printing, Laser Cutting, Soldering, Circuit Analysis, Composite Layups

Design Programs: Onshape, SolidWorks, Fusion 360, KiCad, SimScale

Programming: C, Java, Python, HTML, Markdown, MATLAB

Fluent in Mandarin Chinese

To view projects & past work with images and detailed writeups,
visit jcgullberg.github.io/projects or scan →

