

JUSTIN YOON

Engineering Undergraduate Student at The University of British Columbia

+1 (778) 881-2431

JungKyuJustinYoon@gmail.com

4129 Bridgewater Cres., Burnaby, BC, Canada

www.linkedin.com/in/JungKyuJustinYoon

SKILLS & ABILITIES

CAD	Programming	Software	Certifications/training
SolidWorks	Siemen's PLCs LAD/FBD	TiaPortal	CSWA
Creo Parametric	R, C/C#	OpenPose	WHMIS
AutoCAD	MATLAB	ChimeraX	Standard First Aid
Inventor	Java	Simulink	Class 5 Drivers license
Fusion 360	Arduino IDE	Microsoft Office	Machine shop/fabrication

WORK EXPERIENCE

Manufacturing & Automation Engineer – Dometic Marine Sept. 2025 – Present

- **Designed and developed** manufacturing equipment to support production of hydraulic, electronic, and combustion-based products.
- Performed **3D modeling, prototyping, tolerance analysis, and performance testing** to design parts that were implemented onto the factory floor.
- Integrated **SCADA systems, PLCs, and HMIs** to **reduce human error** and **semi-automate production** of electric linear actuators and heaters.
- **Supported and developed manufacturing processes** for a **new electric actuator product** entering its early stages of production.
- **Collaborated** with team members while **independently managing and completing** assigned projects.

ENGINEERING DESIGN TEAMS

Team Member – MCR Fuselage | UBC AeroDesign Sept. 2023 - Present

- **Led the tail design** for UBC AeroDesign's Micro Class competition aircraft: Romeo (2024), Barbie (2025), and Toothless (2026).
- **Optimized** the empennage by iterating volume coefficients and aspect ratios using Gudmundsson's equations, minimizing wetted surface area and aerodynamic drag through structural sizing.
- **Designed** the tail section for the MCR plane in **SolidWorks, researched** and **developed** solutions to maximize strength against bending and torsion while minimizing weight.
- **Manufactured** the **tail section** using carbon fiber, Kevlar, plywood, and balsa, using techniques such as 3D printing, laser cutting, waterjet cutting, vacuum forming, and jig assembly.
- **Performed FEA and validated results** to make sure the tail met performance criteria.
- **Competed** in **SAE Aero West 2024, SAE Aero East 2025, and SAE Aero West 2026** competition, placed **2nd internationally**.

Team Member – Water Systems | UBC Sustaining Engineering

Sept. 2024 – Aug. 2025

- **Optimized** flow of various water system configurations by developing **spreadsheets** to perform **technical calculations**.
- **Designed, modeled, and manufactured** specialized components needed by the sub team for the rainwater harvesting system.
- Performed **structural analysis** of the tiny home frame to ensure load-bearing compatibility with integrated water systems.
- **Conducted** guided **training sessions** to teach team members **SolidWorks**.

EDUCATION

University of British Columbia

April 2027

Bachelor of Applied Science – Biomedical Engineering

Biomechanics/Mechanics Specialization

PROJECTS

Adaptive Footpad Injury Prevention Wheelchair Attachment

Jan. 2025 – Apr. 2025

- Developed a **non-restraining wheelchair footrest** to **reduce lower-limb injuries** in elderly Alzheimer's patients.
- **Worked directly with our clients** at the Hilltop House Care Team Staff in Squamish to refine design specifications based on **stakeholder requirements**.
- **Designed and modeled** the wheelchair attachment in **SolidWorks**, producing detailed technical drawings and functional prototypes.
- **Prototyped and tested** the device under simulated use, **optimizing geometry and materials** for hospital-grade sanitation and safety.

Helmet Impact Biomechanics – Effect of Helmet Fit on Head Injury Risk

Jan. 2025 – Apr. 2025

- Conducted a **biomechanics research study** with **ICORD** to assess how helmet misfit affects head kinematics and injury risk in motorcycle crash scenarios.
- **Simulated impacts** using a drop tower and helmeted ATD embedded with 9 accelerometers under various misalignment conditions.
- **Analyzed acceleration data** in **MATLAB** using Butterworth filtering and vector math to compare linear and rotational forces across fit conditions.

Soft Tissue Mechanical Testing – Characterization of Synthetic Skin

Jan. 2024 – Apr. 2024

- Conducted **tensile testing experiments** on **synthetic skin samples** using a **benchtop mechanical testing system** to characterize mechanical and viscoelastic material properties.
- Designed a **controlled loading protocol** including **ramp, hold, and unloading phases** to evaluate time-dependent deformation.
- Processed experimental force displacement data in **MATLAB**, converting results to **stress-strain curves** to analyze **elastic behavior, hysteresis, and failure characteristics** to interpret **toe region, linear elastic region, and viscoelastic relaxation**.

ADDITIONAL EXPERIENCE

UBC Thunderbird Mascot – The University of British Columbia

Sept. 2022 - 2026

- **Engaged** with thousands of fans at sports and community events boost school spirit while maintaining a **school-work balance**.