

Kyle Tam

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SUMMARY

Design/CAD: SolidWorks, Solid Edge, Fusion 360, GD&T, DFM/DFA, DOE, Tolerance Analysis
Manufacturing: CNC, 3D Printing, Injection Molding, Sheet Metal, PCBs, Composites, Overseas Suppliers
Other Skills: Ansys FEA (Mechanical), RCFA, Thermal/Vibrational Testing, MATLAB, C++, Adobe CC
Project Management, Leadership, Technical Communication, Adaptability, Safety

EXPERIENCE

Mechanical Design Engineer, R&D September 2023 – Present

Quanser | *Robotic products for consumer use in higher education & research applications*

- Leading the mechanical design of a new sensors product from early concept to prototyping and production
- Researched and designed a new robotic gripper to improve joint dexterity and unify product cosmetics
- Designed hardware made via CNC, sheet metal, and injection molding used in core robotic products
- Conducted testing and validation including tolerance analysis to minimize building times by more than 50%
- Coordinated with overseas manufacturers to reduce medium-high volume part costs by up to \$100,000/year
- Collaborated with electrical engineers to integrate PCB designs using SolidWorks and Altium CoDesigner
- Co-organized conference activities including managing logistics, mentorship, and industry communications

Aerospace Engineering Intern May – August 2022

Canadensys Aerospace – Optics Team | *Space systems, advanced vehicles, rovers, cameras*

- Conducted vibration and thermal test campaigns on cameras to withstand launch and orbital conditions
- Streamlined manufacturing of camera builds through root cause failure analysis and calibration experiments

Mechanical Design Engineering Intern January – April 2022

TRIUMF – SRF Cryomodule Team | *“Canada’s particle accelerator centre”*

- Designed a superconductive testing platform using SolidWorks for operations at 2°K and 10⁻⁶ Pa vacuum
- Consulted with material specialists to design Class 100 cleanroom hardware for manufacturing & assembly
- Analyzed pressure vessel designs using ASME BPVC calculations and ANSYS to lower costs by \$5000+

Mechanical Engineering Intern January – April 2020

Hatch - Engineered Equipment Group | *Engineering consulting firm specializing in energy & mining*

- Collaborated on the designs of industrial hydraulic tooling and large, high-speed bearing systems
- Created 3D models and drawings in Solid Edge to communicate key functionalities in client presentations
- Produced stress analysis calculations to minimize the unloader weight and select optimal bearing types
- Communicated with vendors and contractors to produce capital cost estimates for client proposals

Team Lead, Payload Subteam Lead October 2018 – June 2023

Waterloo Rocketry | *High-powered rocketry design team, with emphasis on student leadership roles*

- Directed 15 students in the research and design of a radiation-shielding materials experiment payload that was awarded the title of Top 10 Payload in the SDL Payload Challenge at Spaceport America Cup 2021
- Designed a 3U CubeSat validated using Ansys structural and vibrational FEA to simulate behaviour during the launch of the team's 17 ft hybrid rocket flight up to an altitude of 30,000 ft
- Developed enclosures and satellite parts with a DFMA focus using SolidWorks and GD&T
- Collaborated with electrical members to integrate radiation sensors, antennas, and coils into designs

EDUCATION

University of Waterloo September 2018 – April 2023

BASc in Mechatronics Engineering | 3.85 GPA

- Co-authored peer-reviewed paper on 5-axis LMD 3D-printing process planning algorithms at UW MSAM
- Extracurriculars: Engineering Ambassadors, Hackathons, Digital/Film Photography