Kyle Tam

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SUMMARY OF QUALIFICATIONS

Design:	SolidWorks, Solid Edge, Ansys Mechanical, GD&T, Mathcad, Fusion 360, AutoCAD
Manufacturing:	DFM/DFA, Machining, 3D Printing (FDM, p-LMD), MasterCAM, CNC, Composites
Electronics:	Data Acquisition, Controls, LabVIEW, MATLAB, Simulink, Arduino, Git, C, C++

EXPERIENCE

Aerospace Engineering Intern
May – August 2022

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

- Manufactured and tested flight camera builds for use in launch vibration and lunar thermal conditions
- Conducted vibration and thermal test campaigns on builds to protoflight levels and conditions of -40 to 50°C
- Designed an optical jig to determine camera lens focus degradation under low vacuum environments

Mechanical Design Engineering Intern
January – April 2022

TRIUMF – SRF Cryomodule Team | "*Canada's particle accelerator centre"*

- Designed a co-axial cavity test bed using SolidWorks for operating conditions of 2°K and 10^{-6} Pa vacuum
- Consulted with machinists to design for manufacturing and lower machining costs by over $5000
- Analyzed pressure vessel designs using ASME BPVC calculations and ANSYS for a safety factor over 3.5
- Developed an assembly frame for the production of a 2200 kg cryomodule for the 2026 CERN LHC upgrade

Mechanical Engineering Intern
January – April 2020

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

- Collaborated on the designs of a hydraulic unloader and large experimental high-speed bearing system
- Created 3D models and drawings in Solid Edge to communicate designs 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

Manufacturing Engineering Intern
September – December 2020

Flash Forest | *Automated drone reforestation company*

- Established a semi-automated manufacturing line to produce seed pods for rapid reforestation
- Developed a drone-mounted pneumatic seed planting system that increased germination by over 30%
- Prototyped 3D-printed and vacuum-formed components to validate seed pod and pneumatic designs

Additive Manufacturing Research Assistant
May – August 2021

University of Waterloo – MSAM | *Multi-Scale Additive Manufacturing lab specializing in metal 3D printing*

- Developed a machine vision-based data acquisition and controls system using LabVIEW for 5-axis laser metal deposition (LMD) 3D printing that tracks layer height during production and minimizes wasted material
- Co-authored a paper on 5-axis CNC process planning algorithms that prevent collisions in metal 3D prints

Payload Subteam Lead
October 2018 – June 2022

Waterloo Rocketry | *High-powered rocketry student design team*

- 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
- Designed and fabricated enclosures and satellite parts using SolidWorks, GD&T, and a manual mill
- Manufactured carbon fiber and fiberglass composite airframe hardware using a wet layup process

EDUCATION

University of Waterloo
September 2018 – April 2023

BASc in Mechatronics Engineering

Extracurriculars: Engineering Ambassadors, UW Orbital, UofTHacks VI, Digital/Film Photography