Blaine Tubungbanua

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EDUCATION

Bachelor of Engineering, Mechanical | University of Victoria *Graduation: June 2025*

GPA: 7.1/9.0 (Equivalent to 3.7/4.0)

Relevant Courses: Machine Design, Mechatronics, Finite Element Applications, Computer Aided Design

SKILLS

Tools: NX, CATIA, Solidworks, AutoCAD, ANSYS, MATLAB, LabVIEW, KiCAD, Arduino, Python, C, C++, 3D Printing

Design: Structural Analysis, Engineering Drawings, Sheetmetal Design, Electrical Design,

PROJECTS

Automated Electromechanical Sanding Machine (See Portfolio) *Jan 2024 – Sep 2024*

Electrical Lead, and Mechanical Designer

- Designed, tested and manufactured an automated sanding machine, integrating an AC motor, brushless motor, limit switches, and Arduino to accelerate the powder coat process of a local machine shop
- Drafted detailed subassemblies in Solidworks, designing machined, turned, laser cut, and 3D printed components, specified fasteners, and springs, generated BOM
- Conducted loading and stress analysis, ensuring reliability of structural mechanisms
- Designed electrical system, drafted electrical schematics and designed PCB with KiCAD, defined power and IO for 120VAC, 24VDC, 5VDC systems, soldered compatible components, wrote embedded code in Arduino
- Troubleshooted mechatronics system, systematically isolating bugs, achieving a robust system

UVic Rocketry Team, Hybrid Engine Test Stand (See Portfolio) *Sep 2022 – Jun 2023*

Instrumentation Lead, Hybrid Engine Project

- Designed and implemented the instrumentation system for the Rocketry Team's hybrid engine test stand, integrating sensors to ensure safe monitoring of safety-critical procedures involving compressed gases
- Wrote system requirements and wiring diagrams, calibrated sensors, soldered and crimped connections, wrote LabVIEW code, for data acquisition system, enabling the system's first successful hot fire test
- Authored safe-work procedures, creating hazard matrices, and received training in compressed gas, WHIMIS, and fire extinguisher use to ensure compliance with OHSE

EXPERIENCE

DeHavilland Aircraft of Canada Limited | Victoria, Canada *Sep 2024 – Dec 2024*

Methods Engineering Intern

- Created manufacturing data for 100+ aircraft parts using Solidworks and AutoCAD, for CL-515, Twin Otter, and Dash-8 aircraft, interpreting engineering drawings, part lists, and engineering orders
- Resolved ambiguities in legacy drawings, manually re-calculating sheet metal flanges and joggles, cross-referencing dimensions across assemblies and existing tooling such as form blocks, and router templates
- Collaborated with methods engineering technicians, and fabricators to support engineering change notices and resolve non-conformance issues on the floor

Airbus Helicopters GmbH | Donauwörth, Germany *Jan 2023 – Apr 2023*

Mechanical Engineering Intern

- Designed a new helicopter snow skids system, using hand calculations to parametrize the design to meet loading requirements, modelled in CATIA V5, achieved weight savings of 50%
- Prepared system specifications for a wire strike protection system on a new helicopter, ensuring compliance with CS-27 and FAR-27
- Investigated failure scenario with wire strike protection system. Implemented a modification in CATIA V5, eliminating a serious failure case

Atimi Software | Vancouver, Canada *Jan 2021 – Aug 2021*

Quality Assurance Engineering Co-op

- Developed test procedures and documented test results to validate software against design requirements, ensuring product quality and consistency
- Identified risks, potential failure and edge cases, designing targeted tests to thoroughly validate the system and ensure reliability under worst-case scenarios.