Zain Glover

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Education

University of Toronto – BASc in Mechanical Engineering - GPA: 3.73/4.0 Expected June 2028

Work Experience

Mechanical Design Intern, Avidrone Aerospace Incorporated - Breslau, ON April 2025 - Aug 2025

- Supported the development of Avidrone's tandem rotor eVTOL aircrafts through mechanical design solutions and validation testing of propulsion systems, airframes, fuel systems, and payloads
- Designed mounting and housing assemblies for aircraft LiDARs, Cameras, GPS, Strobes, and various PCBs in SolidWorks accounting for manufacturability, weight, design simplicity, and integration with pre-existing systems
- Created 110+ technical drawings of drone center-body, leg, coupling, and battery components using Geometric Dimensioning and Tolerancing (GD&T) principles and conducting Tolerance Stack-Ups
- Developed PCB outlines and Wire Harness routes with Electrical Engineers for inner-drone components
- Presented and reviewed mechanical and electromechanical assemblies in semi-weekly design review meetings
- Generated Bills of Materials (BOMs) and created the Clear to Bill document for Avidrone's newest drone iteration
- Created work instruction documents for the mechanical assembly of battery and payload sub-systems, and part inventory updating procedures through the ERP software Odoo
- Assisted in the physical build up and deconstruction of drones for weekly flight tests and customer shipments through the use of electric drivers, dremels, threadlocker, solders, and angle grinders
- Developed a standardized company drawing template in SolidWorks for request for quotations (RFQs)

Research Assistant (NDA), TMU Aerospace Engineering Centre & Bombardier - Toronto, ON Sept 2024 - July 2025

- Designed and fabricated biomechanical systems to improve the comfort of commercial aircraft cabins for a Bombardier Research and Development project partnered with Toronto Metropolitan University
- Developed computer-aided designs (CAD) in SolidWorks of textile sensing mechanisms involving controlled metallic bending, roller guides, springs, and various fasteners for finite element analyses (FEA) and modeling purposes
- Selected shapes and thicknesses of sheet metal components based on spring constant and deflection values by creating thermal simulations in Ansys Mechanical, accounting for design for manufacturability (DFM) principles

Projects

University of Toronto Supermileage Team - Aerostructural Lead zainglover.ca/super-mileage-vehicle

- Co-leading a team of 9 engineering students to design, develop, and manufacture the aerobody for the University of Toronto Supermileage Team's Prototype vehicle in preparation for the 2026 Shell Eco Marathon
- Improved the vehicle's movement and fuel efficiency by identifying aerodynamically-flawed components of the vehicle's aerobody by creating a fluid dynamics simulation (CFD) in Ansys Fluent
- Lead semi-weekly design meetings and created video instructionals to ensure a productive and educated work group
- Created and updated computer-aided design (CAD) for the vehicle's wheel brake, inner shelves, and aerobody by taking physical measurements and using Geometric Dimensioning and Tolerancing (GD&T) principles in SolidWorks
- Determined the maximum weight of inner-body components without causing the aerobody to plastically deform by creating a static simulation in Ansys Structural

CNC Router Project - Team Leader zainglover.ca/cnc-router

- Lead a group of 4 Mechanical Engineering students over 13 weeks to create a conceptual design of a CNC Router
- Selected, designed, and modelled 70+ CNC parts to create a spindle mechanism, 3-axis movement system, and custom router frame while adhering to a $4,200 budget
- Developed a fully functional SolidWorks assembly, engineering report, and 20+ technical drawings

Skills

Languages and Frameworks: Ansys, SolidWorks, Autodesk Fusion, TinkerCAD, Microsoft Office, C, C++, Python, MATLAB