10 Elspeth Place, Ontario, Canada
LinkedIn

ANDREW GUO

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EMPLOYMENT

Mechanical Design Engineer, Intern **Systematix Automation** **Fall 2023**
- Designed custom pick and place solutions for industrial automation lines using SOLIDWORKS.
- Improved the previous designs by reducing complexity, setup/calibration times and cost.
- Applied Geometric Dimensioning and Tolerancing (GD&T) to produce comprehensive detailed drawings.
- Created assembly drawings and maintained/updated BOMs.

Test & Validation Engineer, Intern **Bend All Automotive** **Spring 2023**
- Performed design validation (DV) and production validation (PV) on Engine Oil Cooler (EOC) and Transmission Oil Cooler (TOC) systems, up to OEM specifications for GM, Ford, Volvo, and Stellantis as part of the Advanced Product Quality Planning (APQP) process.
- Designed test fixtures and conducted over 100 standard tests on 2000+ parts to simulate long-term use, including Burst Strength, Tensile Strength, Impulse, Heat Aging, Thermal Cycling, Vibration, PTC, PDT, and Underwater Leak tests.
- Conducted failure analysis on warranty parts and R&D projects using X-Rays, dissection techniques and UV black light inspections

Software Developer, Intern **Heliolytics** **Summer 2022**
- Developed and implemented CRUD APIs to classify and manage problems identified during aerial imagery analysis, improving the quality of insights and reports for solar farm clients.
- Improved software stability and performance by increasing unit test coverage and refining QA processes, resulting in a significant reduction in software bugs.
- Created and implemented python scripts to automate data migration and query SQL databases.

Teaching Assistant **Crescent School** **Summer 2022**
- Introduced essential mechanical engineering concepts into curriculum such as orthographic views and projections, fasteners, limits & fits, and Geometric Dimensioning & Tolerancing (GD&T).
- Authored a tutorial series on Fusion 360, highlighting computer aided design (CAD) concepts 3D modelling and detailing (section views, detailed views, exploded views, BOMs, etc.).
- Led machine shop training on the lathe, mill and chop saw and assisted in CAM generation for CNC machines.

EDUCATION

Waterloo, CA **University of Waterloo** **Fall 2022 – Present**
- BASc in Mechatronics Engineering, Dean's Honors List, GPA: 4.0.
  - Undergraduate Coursework: Structure and Properties of Materials, Mechanics of Deformable Solids, Dynamics, Statics, Experimental & Statistical Analysis, Calculus II, Micro Processors & Digital Logic.

TECHNICAL EXPERIENCE

SAE Team + Projects
Portfolio: www.andrewguo.com
- **University of Waterloo Formula Motorsports** (2023). Designed and manufactured chassis jigging for 2024 competition car. SOLIDWORKS, GD&T, Machining
- **Custom FPV Drone** (2023). Designed carbon fiber/TPU drone frame for first-person view flying. SOLIDWORKS, 3D Printing
- **Cycloidal Gearbox** (2023). Designed and prototyped custom cycloidal drive reducer. SOLIDWORKS, 3D Printing
- **Differential Swerve Drive** (2022). Designed and prototyped custom omnidirectional robotic drive platform. SOLIDWORKS, 3D Printing, Laser Cutting

CAD Software and Programming Languages
SOLIDWORKS (CSWP – Certified SolidWorks Professional), Fusion 360, AutoCAD
C++, Python, Java, C#, JavaScript, HTML, CSS, C