Andrew Guo

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Skills + Certifications

Computer Aided Design (CAD)	SOLIDWORKS (Certified SOLIDWORKS Professional - CSWP), Fusion 360, AutoCAD
Programming Languages	Python, Java, C++, C#, HTML, CSS, JavaScript, ROBOTC
Rapid-Prototyping/Manufacturing	SLA/FDM 3D Printing, Laser-Cutting, CNC Machining, Lathe, Mill

Education

University of Waterloo, *Bachelor of Mechatronics Engineering*, GPA: 3.92 — Sept 2022 - *present*

Experience

Bend All Automotive, *Test & Validation Engineering Intern*
Kitchener | Jan 2023 – *present*

- Performed design validation (DV) and production validation (PV) on Engine Oil Cooler (EOC) and Transmission Oil Cooler (TOC) systems, ensuring that all components met OEM specifications and standards for GM, Ford, Volvo, Rivian (Suspension Lines for R1T and R1S) and Stellantis as part of the Advanced Product Quality Planning (APQP) process.
- Fabricated 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 root cause analysis on warranty parts and R&D projects using X-Rays, dissection techniques and UV black light inspections. Generated detailed test records and reports to identify and communicate failure modes to customers, enabling proactive issue resolution and product quality improvement.

Heliolytics, *Software Development Intern*
Toronto | June - Aug 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, implementing validation, and refining QA processes, resulting in a significant reduction in software bugs.
- Collaborated in sprint planning, code reviews, and team retrospectives within an Agile development environment, improving cross-team communication and preventing work silos.

Crescent School, *Robotics Consultant*
Toronto | June - Aug 2022

- Authored a comprehensive tutorial series on Fusion 360, formalizing the Tech Design course content by introducing essential CAD/CAM concepts such as 2D sketching, 3D modeling, working in assemblies and detailed drawings.
- Implemented course objectives by collaborating with the robotics department staff to deliver curriculum to 100+ grade 9-12 students.
- Streamlined the TDJ3M and TDJ4M curriculum at Crescent School by launching new course materials in September 2022 leading to improved student engagement and performance in the Tech Design program.

FRC Team 610, *Chief Designer, Design + Manufacturing Team Member*
Toronto | Sept 2018 - April 2022

- Led a team of 20+ members as the head of the design sub-team, driving a fast-paced build season by organizing and managing design reviews, testing cycles and prototyping sessions.
- Designed the full assembly of the robot using SOLIDWORKS and created detailed drawings/CAM before fabricating over 100 unique parts using a combination of lathes, manual mills, CNC mills, etc. resulting in a fully functional robot.
- Employed the engineering design process to iterate on multiple electro-mechanical subsystems, resulting in the creation of lighter and more robust mechanisms that improved the overall performance of the robot.

Certifications + Awards

President's Scholarship of Distinction, *University of Waterloo*	Sept 2022
Board of Governors Award – "The Man of Character", *Crescent School*	June 2022
Norris Family Robotics and Technology Award, *Crescent School*	June 2022