Nicholas Drazso

Mechatronics Engineering 2026 – University of Waterloo

Design Portfolio

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905-244-1804

in Nicholas Drazso

SKILLS

Mechanical: CATIA 3DX, SolidWorks, DFM, Sheet Metal Design, 3D Printing, Machining, Welding

Electrical: Altium, PCB Assembly, CAN, Wire Harness Design, Soldering, Arduino, RPi, IMUs

Software: C++, Python, MATLAB, Simulink, Linux

WORK EXPERIENCE

Manufacturing Test Engineering Intern | Tesla | Palo Alto, CA, USA

May 2024 – Present

- Developing electro-mechanical test fixture to streamline validation of production test setups
- Standardizing leak test method with custom simulation tool to improve reliability across production

Mechatronics Engineering Intern | Electrans | Oakville, ON, CA

Sept 2024 - Dec 2024

- Created a bed of nails test fixture with a custom pogo pin control PCB and RPi for PCB testing
- Designed a custom CAN connected sensor system to reduce driver related damage by \$100k+
- Optimized urethane over molding process and redesigned PCBA, reducing costs by 80%

- Designed a fixture to write to EEPROM on PCBA using python to track hardware for 10k+ units
- Root caused failures on a novel cell test fixture implementing 6 design changes for full functionality
- Developed visualization app for viewing thermocouple data unlocking new capabilities for the team

Mechatronics Engineering Intern | BotBuilt | Durham, NC, USA

Sept 2022 – Dec 2022

- Designed an autonomous unit test fixture for novel end effector increasing overall system reliability
- Made 10+ key design changes to end effectors and fixtures increasing scalability
- Designed LiDAR camera cleaning solution allowing for a key new feature to be implemented

Mechanical Engineering Intern | EM Dynamics | Scarborough, ON, CA Sept 2020 – Dec 2020

- Created and optimized 100+ CAD models and drawings for high volume sheet metal manufacturing
- Released a DFM guideline for customers, reducing internal CAD revision workload by 35%

Mechatronics Engineering Intern | Pure Technologies | Mississauga, ON, CA Jan 2020 - Apr 2020

• Iterated through 4 versions of mechanical and electrical designs improving robots' reliability by 60%

EXTRA CURRICULARS

Search and Rescue Robot | Third Year Design Project

Jan 2025 – Mar 2025

- Designed a 4-layer PCB chassis integrating motor drivers, power regulation, and a Teensy 4.0 MCU
- Implemented encoder-based PD control with Pixy 2.1 vision module for line tracking
- Designed a suction fan system to increase downforce resulting in a 5% cornering speed increase
- Placed 1st out of 17 teams, scoring 68x higher than 2nd place based on speed, weight, and reliability

Mechanical Team Lead | UW DeepBlue | Waterloo, ON, CA

Sept 2024 – Present

• Leading the design of 4 electromechanical actuator driven subsystems (torpedo launcher, torpedo's, gripper, and dropper) and mechanical hull for underwater autonomous vehicle

Founder and Lead Technician | PB Solutions | Oshawa, ON, CA

Jun 2012 - Sept 2019

- Managed a team of 4 people in fast paced environment of up to 1000 players
- Troubleshot and repaired electronic, pneumatic, and mechanical assemblies within paintball markers