Nicholas Drazso

Mechatronics Engineering 2026 – University of Waterloo

Design Portfolio | ndrazso@uwaterloo.ca | 905-244-1804 | 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%

Test Equipment Design Engineering Intern | *Tesla* | *Palo Alto, CA, USA* ***Jan 2024 – Apr 2024***

- 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