





Nicholas Drazso

Mechatronics Engineering 2026 – University of Waterloo

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

SKILLS

Design: CATIA 3DX, SolidWorks, GD&T, DFM, Wire Harnesses, Heat Transfer

Prototyping: 3D printing, Machining, Welding, Arduino, Raspberry Pi, Soldering

Software: MATLAB, Python, CAN, Linux, C++, Java, C

EXPERIENCE

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

- Root caused failures on a novel cell test fixture implementing 5 design changes for full functionality
- Designed a fixture to write to EEPROM on PCBA using python to track hardware for 10k+ units
- Created a high precision fixture in CATIA enabling cell height measurements accurate to 20 microns
- Developed visualization app for viewing thermocouple data unlocking new capabilities for the team
- Created user manuals and assembly guides for 6 test fixtures for internal and external use

Mechatronics Engineering Intern | BotBuilt | Durham, NC, USA Sept 2022 – Dec 2022

- Designed an autonomous unit test fixture for novel end effectors increasing overall system reliability
- Made 20+ optimization design changes to end effectors and fixtures increasing scalability
- Created automated wood measurement system unlocking full system automation capability
- Designed LiDAR camera cleaning solution allowing for a key new feature to be implemented
- Leveraged diverse hands on skillset to replicate novel robotic system to meet critical funding deadline

Mechanical Engineering Intern | EM Dynamics | Scarborough, ON, CA Sept 2020 - Jan 2021

- Optimized and created 100+ 3D models with engineering drawings for high volume manufacturing
- Released a DFM guide to customers reducing in house time spent on CAD corrections 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 85%
- Designed, performed, and documented 10+ validation tests for robot upgrade

Mechanical Team Member | Waterloo | Waterloo, ON, CA Sept 2019 – Sept 2020

- Developed brake testing rig unlocking a new capability for brake system development
- Redesigned the frame to implement a new braking system that doubled the braking power
- Led carbon fiber monocoque research project to reduce the pods weight by 40%

Founder and Lead Technician | PB Solutions+ | Oshawa, ON, CA June 2012 – Sept 2019

- Successfully started and operated paintball marker repair business for 7 years
- Managed a team of 3 people in fast paced environment of up to 800 players
- Troubleshoot and repaired electronic, pneumatic, and mechanical assemblies within paintball markers

PROJECTS

Linear Potentiometer | Second Year Design Project 2 Weeks – Mar 2023

- Created a linear potentiometer that utilizes the voltage divider principal to measure displacement
- Performed validation and calibration resulting in an accuracy of +/- 0.5cm

Pinball Machine | First Year Design Project 4 Weeks – Nov 2019

- Created ball release and launch mechanisms to autonomously launch pinballs onto the playing field
- Developed C++ software that analyzed 4 sensors and controlled game logic for multiple game modes