DANIEL J. CARLSON

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Address | **Portfolio** | **LinkedIn**

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EDUCATION

***Northeastern University**, Boston, MA* — Expected May 2024

Master of Science in Mechanical Engineering with a Concentration in Mechatronics — GPA: 3.96

Bachelor of Science in Mechanical Engineering and Minor in Computer Science — GPA: 3.98

Relevant Courses: Power Electronics, Robotic Science and Systems, Finite Element Method, Object Oriented Design

Honors and Awards: Summa Cum Laude, Dean's List, Dean's Scholarship

SKILLS

Computer Applications: SolidWorks (CSWA, Sheetmetal, Weldments), MATLAB, Simulink, HSMWorks, Microsoft Excel

Manufacturing: Manual & CNC Machining, 3D Printing, Laser Cutting, Soldering, Electronics, MIG/TIG Welding

Programming: Java, Python, Ladder Logic, Arduino, Web Development (Django with Bootstrap), C#

WORK EXPERIENCE

AKF Group | Commissioning (Cx) Engineer — July 2023 – November 2023

- Performed on site functional system testing for MEP/FP and lighting systems utilizing the CxAlloy platform
- Reviewed documentation including submittals and division specifications for test checklist development
- Completed retro-commissioning trend analysis to identify underperforming equipment and faulty sequences
- Revamped processes for pre-functional checklist development and Cx logging to reduce admin overhead

Fulfil Solutions | Mechanical Engineering Co-op — July 2022 – December 2022

- Designed a mechanical structure and linear motion system in collaboration with the machine vision team
- Identified and categorized safety risks in next generation Fulfil technologies and presented to safety consultants
- Fabricated mounting solution for a critical safety switch and validated design using an Arduino based test setup
- Assisted in prototype bring-up by completing servo tuning, E-Box assembly, and wire-harness troubleshooting

Cometeer | Hardware Engineering Co-op — July 2021 – December 2021

- Worked with various suppliers to source and test FIBC liners for coffee bean storage cutting costs by 80%
- Designed, manufactured, and installed an upgraded air reject system for use with x-ray inspection
- Performed troubleshooting, calibration, and operation of the fiber laser coding system on first production line

PROJECT & CLUB EXPERIENCE

Leg Redesign for Harpy Robotic Platform| M.S. Thesis — September 2023 – May 2024

- Redesigned a robotic leg for 10m freefall with shock absorbers, 2-DOF five bar linkage, and damped PEA model
- Utilized Matlab and Simulink Multibody to perform kinematic analysis, design verification, and data visualization
- Developed tools for variable selection while completing CAD with OTS components for short term prototype

Automated Book Recycler| Capstone Project Lead / Lead Mechanical Designer — May 2022 – May 2023

- Developed processes, CAD, and documentation for numerous sub-systems comprised in an auto book-debinder
- Built an MVP with welded frame, machined parts, motion system, pneumatic system, PLC control, and E-Box
- Led project management for a 5-person team through concept, design, prototype, and presentation stages

Northeastern Electric Racing | Mechanical Project Lead & Lead CNC Machinist — September 2019 – July 2022

- Manufactured components requiring CNC operations for mechanical and electrical assemblies
- Evaluated the efficacy and compliance of critical safety hardware and compiled documentation for approval

Sacred Heart FIRST Robotics Team | Team Captain — September 2015 – May 2019

- Achieved three regional victories and two elimination stages as captain of FIRST Tech & Robotics teams
- Increased team membership by 400% to 40 members by overhauling the team's project structure

VOLUNTEER EXPERIENCE

Boy Scouts of America | Eagle Scout — Rank Achieved July 2017

- Organized and oversaw the construction of a 300ft safety fence along a cliffside at Coyote Point Recreation Area