Cooper Cole

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Education

University of Waterloo – Candidate for BASc in Mechatronics Engineering 2024 May 2024
Universidad Carlos III de Madrid – Mechatronics Engineering, Study Abroad Fall 2023

Work Experience

Mechanical Engineering Intern, Cover Technologies – Los Angeles, CA Jan 2023 – Aug 2023

- Mechanical design for the next generation of factory-manufactured houses, collaborating with product, architecture, manufacturing, and supply chain teams
- Designed HVAC, supply plumbing, and AC/DC electrical systems using Siemens NX, ensuring compliance with code and focusing on manufacturability and modularity
- Produced over 100 engineering drawings for the home envelope and components, incorporating feedback from manufacturing and supply chain

Mechanical Engineering Intern, Linamar Corp – Guelph, ON Jan 2022 – Apr 2022

- Designed a steel billet exchange assembly in SolidWorks that interfaces with pre-existing machinery on an automated manufacturing line, is easily fabricated, and meets ANSI/ISO safety standards
- Redesigned the factory's standard robot cell part nest using SolidWorks to improve manufacturability, cut down material cost and reduce assembly time by 50%

Optomechanical Engineering Intern, Inscopix Inc – Palo Alto, CA May 2021 – Aug 2021

- Designed a testing instrument using a laser and position sensitive detector (PSD) that measures the angular displacement of a Ø1mm MEMS mirror to analyze the effect of a sudden impact on the mirror
- Improved miniscope optics data models and conducted stray light analysis using Zemax Optic Studio to analyze transmission band shifting for large angles of incidence and the illuminance at the image sensor

Optomechanical Engineering Intern, Vena Medical – Kitchener, ON Sept 2020 – Dec 2020

- Analyzed thermal test data and heat transfer to develop a solution that reduced the temperature of the endoscope body by 20% to meet safety standards and specification
- Contributed to the creation of an optical test bench and wrote test procedures and methods in accordance with ISO 8600 standards for FDA and Health Canada applications

Projects

SpinStop spinstop.ca

- Co-founder on a team of 4, designing a mechatronics system preventing uncontrolled spinning of helicopter-hoisted payloads
- Contributing to the wireless data collection and display system, encompassing firmware and website development, as well as outreach for industry partners and grant funding

Spikeball Net Model Present

- Part of a 3-person team to create and validate an FEA model of Spikeball ball-net interaction, with a focus on "Pocket Shots"
- Validated the model by comparing it to experimental data measured using OpenCV ball tracking software

Skills

Design: Siemens NX, SolidWorks CSWA, Zemax OpticStudio, Sheet Metal, Drafting and GD&T, 3D Printing
Programming: Python, MATLAB, C, C++ HTML, CSS, OpenCV, NumPy, SciPy, Git, LaTeX