Joshua Dolgin

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Experience

Verkada, San Mateo, Ca **September 2023 - January 2024**

Product Design Mechanical Engineer Co-op (Cameras)

- Led the full-cycle development of a new product, encompassing design, mock-up creation, thermal analysis, IK/IP testing, and cost negotiations. Successfully managed the tooling design and launch for die cast and sheet metal components.
- Led Mechanical Engineering efforts for a new security camera project, taking it through Research, Prototyping, RFQ, PRD, and EVT stages.
- Applied worst case, RSS, and MRSS statistical tolerance loop analysis to ensure proper clearance for part assembly and product functionality, including pin and slot clearance, cosmetic gaps, seal compression %, etc.
- Collaborated with JDM's & overseas tooling vendors to update mechanical designs, 2D drawings, and review DFM/tooling designs; traveled to Taiwan to meet with JDM's & tooling vendors.
- Managed material selection for diverse components (screws, inserts, sheet metal, die cut, die cast, injection mold, etc.) for both indoor and outdoor products.

Kindred AI, Toronto, On **January 2023 - April 2023**

Robotics Hardware Engineer Co-op - On Grid Robotic Pick

- Researched and fabricated custom FDA-compliant suction cups with varying durometers using urethane casting. Increased pickable grocery items by 10% and improved maximum robot acceleration by up to 15% for certain items.
- Implemented DFMA methodologies to design high-volume, precision parts for next-generation robotic pick end effectors.
- Built an object that has configurable mass and porosity to imitate any pickable grocery item, which is used to identify maximum robot acceleration for individual SKUs.
- Performed FEA on multiple parts to reduce weight by up to 25%, and identify areas of high stress.

OMERS Ventures, Toronto, On **May 2022 - August 2022**

Software Developer Co-op

- Developed a signal processing pipeline to notify teams of potential deals, by using Prefect to orchestrate Python code that leveraged various web scraping tools, Web APIs, and SQL databases.
- Created a 5 ft x 5 ft custom, open-source Word Clock for the reception area, with completely original 3D printed and CNC machined pieces, and embedded C software.

Untether AI, Toronto, On **September 2021 - December 2021**

AI Accelerator Hardware Engineer Co-op

- Wrote Python code to instantiate Verilog test modules with customizable I/O hubs and communication lanes, automating the writing of multiple test bench modules, the modules were capable of verifying up to 98% of the hardware.
- Researched and implemented a variety of passive/active cooling techniques and configurations on TsunAImi, a GPU sized device that contains 4 of Untether AI's accelerator chips.

NMC Dynaplas, Scarborough, On **January 2021 - April 2021**

Manufacturing Engineer Co-op

- Designed and fabricated multiple test fixtures (3D printing, Machining) to hold parts for CMM measuring, reducing the average time to measure parts by 500%.
- Analyzed engineering drawings to create CMM measuring routines and wrote excel VBA software to populate documents with the data after measuring, almost completely removing human measurement from the QA process.

Education

- University of Waterloo: BASc, Mechatronics, GPA: 3.99/4.0 **Sept 2020 - May 2025**
  - Awards and Honors: President's Scholarship of Distinction, Term Dean's Honour List: 1B, 2A, 2B, 3A

Technical Skills

Design: CAD (Solidworks, Fusion, Onshape, NX, Creo), FEA (Ansys, Autodesk, Solidworks), DFM, DFA, generative design, laser cutting, 3D printing (FDM, SLA, SLS, MJF), CNC, manual machining, statistical tolerance analysis, CAM.

Hardware: Design (Altium, Eagle), THT and SMT soldering, Reflow.

Software: C++, C, Python, Verilog, System Verilog, Assembly, VBA, MATLAB and basic SQL, HTML, CSS, JS.