Allen Loukiantchenko

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Technical Skills

Design Tools	AutoCAD, SolidWorks, Catia V5/V6, Fusion 360
Machine Tools	3D Printing, CNC, Lathe, Drill Press, BandSaw
Micro-controllers	Arduino, Raspberry Pi, STM32
Software Tools	Git, C, C++, Java, Python, MATLAB, Simulink

Experience

Mechanical Engineer Intern — May 2025 – Aug 2025
Able Innovations — *Toronto, ON, Canada*

- Created new designs in **Soldiworks** to improve safety of automated patient transfer system while achieving cost savings through lowering complexity
- **Rapidly prototyped** solutions to on-site issues and breakdowns during hospital use, reducing down time and increasing client satisfaction
- **Analyzed** manufacturing workflows alongside the production team, resulting in **increased operational efficiency** and improved operator ergonomics for medical equipment assembly

R&D Engineer Intern — Jan 2025 – Apr 2025
Schaeffler/Vitesco — *Chatham, ON, Canada*

- **Designed** A and B sample **prototypes** using **Catia** and stack-up analysis, resulting in tolerance fits that effectively met sealing requirements for client dictated automotive oil pump applications
- **Analyzed CMM** and durability test data using **Minitab** and **Excel**, resulting in the consistent successful diagnosis of leakage failures in automotive coolant flow control valves
- **Tested** and compared performance of ETF vs ULV oils with respect to thermoplastics and seals used within oil pump products to ensure reliability and ensure effective transition to modern EV oils

Process Engineer Intern — Sep 2023 – Dec 2023
Tesla — *Fremont, CA, United States*

- **Designed** improved manufacturing jigs using **SolidWorks**, resulting in **drastically reduced safety incidents** and improved ergonomics for EV drivetrain assembly lines
- **Created** optimized jig solutions by **consulting stakeholders**, resulting in **significant cost savings** and improved operational efficiency across multiple GA EV manufacturing processes such as wheels on, marriage, etc.
- Employed **3D Printing** to **rapidly prototype** and iterate upon new jigs to simplify and improve doorline window manufacturing process, reducing **cycle time**

Mechanical/Manufacturing Engineer Intern — Jan 2023 – Apr 2023
Polycorp — *Elora, ON, Canada*

- **Reverse Engineered** CADs for a rubber prep lifter using **SolidWorks**, allowing for use on both old and new parts
- **Designed and fabricated** production floor jigs using **SolidWorks** and **machine tools**, iterating with operators to achieve **improved safety, reduced cycle times, and cost savings** for rubber press and calender processes

Projects

OMNI Modular Robotic Arm | SolidWorks, Arduino, Raspberry Pi — Sep 2025 – Mar 2026

- Created an **adaptable robotic manipulator system** with modular joints and links using **Solidworks**, allowing for dynamic alterations to DOF and length capabilities
- Engineered modular joints utilizing metal sheet and tube bayonet mounts, plunger pins, and 3D-printed PETG bushings to maintain concentricity and allow for simple physical modularity
- Implemented automatic **Inverse Kinematics Algorithms** using communication between **Raspberry Pi** and STM32 controllers to allow for quick reconfiguration of arm within 1 minute

Stewart Platform | SolidWorks, Arduino, Raspberry Pi — Sep 2024 – Dec 2024

- **Designed** a platform capable of **automatic ball balancing** alongside a multidisciplinary team, resulting in comprehensive mechanical, hardware, and software integration for control systems applications
- **Manufactured** platform components using **SolidWorks**, **3D printing**, and laser cutting, resulting in a fully assembled **prototype** adhering to standard engineering practices
- Integrated feedback control systems using a camera for ball tracking and PID algorithms, using an **arduino** and **Raspberry Pi** to enhance responsiveness

Education

University of Waterloo | *Candidate for BASc. in Mechatronics Engineering, Co-op* — Sep 2021 – May 2026