Thomas Watson

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Education

Dalhousie University — Halifax, NS
Bachelor of Mechanical Engineering, Minor in Computer Science — *Sept. 2021 – Apr. 2027*

Experience

Mechanical/Robotics Engineering Intern - Cybertruck Manufacturing ↗ — Sept. 2025 – Present
Tesla — *Austin, TX*

- Engineered a full mechanical/robotic solution for a failing seat-cell reject system; led controls/PLC integration (Fanuc Robotics/Siemens) and managed cross-functional rollout, eliminating $175k/yr in scrap/downtime.
- Independently designed, manufactured, and implemented 11 pneumatic lift-assist assemblies; utilized CNC, 3D printing, and scrap materials for rapid, low-cost deployment from design (CATIA/SW) to line-side.
- Created machined and sheet-metal parts; performed GD&T, tolerance checks, and DFM for robotic assemblies.

Mechanical Design Engineering Intern ↗ — May 2025 – Aug. 2025
Lockheed Martin — *Dartmouth, NS*

- Led mechanical design and integration of a naval laser-warning system; coordinated 5 internal teams + 4 vendors.
- Led topside design initiatives, implementing 9 new advanced system integrations onto the Canadian River Class ship structure based on antenna radio frequencies, thermal CFD analyses and mechanical constraints.
- Redeveloped a SolidWorks line-of-sight analysis for the CSC program, improving process accuracy by 15%.

Aerospace Engineering and Logistics Intern ↗ — Jan. 2025 – Apr. 2025
RTX (Pratt and Whitney) — *Halifax, NS*

- Collaborated with PW800 production line and automated various procedures using VBA, Power BI and Python.
- Built 13 complex Visual Basic macros from scratch, cutting company data refresh time by 8 hours/week.

CFD/FEA Engineering Intern ↗ — May 2024 – Aug. 2024
Lockheed Martin — *Dartmouth, NS*

- Developed and validated a calculation method for engine exhaust mass flow rates/temperatures, worked with vendors to develop proper idle engine power distribution for RANS/LES simulations (thermal and aerodynamic).
- Worked closely with the Electromagnetic/RF team validating near and far field antenna coupling analyses.
- Simulated and presented 20+ CSC ship model iterations for CFD using ANSYS Fluent and SolidWorks.

Projects/Extracurricular Leadership

Computer Vision Robotic Hand ↗ | *Python (MediaPipe ML, OpenCV), Raspberry Pi* — Oct. 2025 – Present

- Designed/built a 3D-printed robotic hand from scratch, capable of real-time gesture mimicry via computer vision.
- Designed finger linkages and tendon routing in SolidWorks; iterated 10+ prototypes to improve actuation.
- Deployed a Python script on a Raspberry Pi to run a MediaPipe ML model, interpreting 21-point CV hand-tracking data to map gestures to 6 servo commands and drive actuators via a PCA9685.

Video Game Console System ↗ | *Matlab/C++ with 3D Printed Custom Controller* — May 2025

- Developed custom hardware and software of 2-D video game system from scratch using an Arduino Uno (C++ I/O) and a Matlab GUI governed by RK4 differential equations. 3-D printed a custom ergonomic controller assembly.

Quantitative Risk Management App ↗ | *Python (MatPlotLib, NumPy, Pandas)* — Sep. 2024 – Apr. 2025

- Built a ground-up data collection application that calculates individual investing group and society-wide YTD PNL's in Python using Pandas, Matplotlib, Tkinter and Bloomberg's Python API.
- Applied mathematical hedging via Monte Carlo simulations & correlation matrices in Python (NumPy/Pandas).

Technical Skills

Engineering: Catia, NX, GD&T, DFM, SolidWorks, C, C++, Python, CNC, Simulink, AutoCAD, MATLAB, Java
Tools: Tableau, Power BI, DOORS, SAP, Visual Basic, SQL, Confluence, CAD, Cadence, Jira, Bluebeam, Git, Creo
Simulation: ANSYS Fluent, FEA, COMSOL Multiphysics, ShipEDF (3D RF/Electromagnetic Modeling), OpenFOAM
Relevant Courses: Heat Transfer, Fluid Mechanics, Systems, Materials 1-3, FEA, Applied ODE's, Machine Design 1-2