

DAYA SILVERSTEIN

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EDUCATION

Queen's University

Bachelor of Applied Science in Mechanical Engineering

- Coursework: Fluid Mechanics, Thermodynamics, Materials, Electrical Circuits, CNC Machining

Kingston, ON

Expected April 2028

ENGINEERING EXPERIENCE

BPA (Bouthillette Parizeau Inc.)

Mechanical Design Intern

- Supported energy modelling and mechanical design for 10+ buildings; used DesignBuilder to assess thermal loads, occupancy, and ventilation.
- Delivered HVAC, plumbing, drainage, and fire-protection designs for two office fit-outs under P.Eng. review, including AutoCAD drawings, schedules, calculations, specifications, and Bluebeam markups.
- Rebalanced ventilation for an office redesign: recalculated heat loads and outdoor air, selected two air-conditioning units, revised sprinklers, and resized domestic-water piping.
- Evaluated an A2L R-32 refrigerant conversion for data-centre cooling; identified insufficient exhaust capacity and specified a 2,000-CFM inline fan with leak-response controls.

Toronto, ON

May 2026 – August 2026

DESIGN PROJECTS

Autonomous Water Filtration System

Design II, Queen's University

Fall 2025

- Designed a SolidWorks magnetic-rotor mixer driven by a DC motor; programmed an Arduino Uno in C++ to run a peristaltic pump and log turbidity.
- Integrated a three-stage sand, gravel, and sponge filter with 3D-printed parts; completed 5/5 dirty-water tests and validated motor performance with Matplotlib.

Hyperloop Mechanical Braking Fail-Safe

Queen's Hyperloop Design Team

Fall 2025 – Winter 2026

- Designed a spring-actuated pin and ball-valve mechanism that engages pneumatic brake calipers after pressure loss, providing a mechanical backup to the electrical trigger.
- Calculated spring force from valve friction and pin stress by hand; simulated actuation under load in ANSYS, then finalized the CAD design.

Five-Degree-of-Freedom Robotic Arm

Independent Project

2026 – Present

- Designing a 0.3-m-reach, 100-g-payload arm with NEMA 14/17/23 stepper motors; validating parts in SolidWorks Simulation before fabrication.

ENTREPRENEURIAL EXPERIENCE

LocalCare Co.

Co-Owner

Toronto, ON

Summers 2023 – 2025

- Co-ran a residential construction business that built 10+ custom decks and earned repeat and referral work over three summers.
- Managed estimates, material takeoffs, purchasing, budgets, schedules, clients, and 2–4-person crews through 2–3-week builds.
- Planned post and framing layouts and led construction to code and frost-protection requirements.

TECHNICAL SKILLS

CAD, Simulation & Design

SolidWorks, Fusion 360, AutoCAD, ANSYS, DesignBuilder, Bluebeam Revu, FEA, CFD, energy modelling

Programming & Prototyping Building Systems

Python, C++, Arduino, Matplotlib, PrusaSlicer, 3D printing, CNC machining
HVAC load calculations, duct and diffuser sizing, equipment selection, plumbing, drainage, fire-protection layout

Languages & Certification

English (fluent), French (conversational), WHMIS