

# DANIEL BENJAMIN

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available starting May/Sept 2026 for a 4-month or 8-month co-op position

## EDUCATION

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**University of British Columbia**  
Bachelor of Applied Science – Mechanical Engineering

Expected Graduation: May 2028

## MECHANICAL DESIGN EXPERIENCE HIGHLIGHTS

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- Used SOLIDWORKS to [design an FSAE chassis frame](#) and developed Python scripts to calculate forces under various braking and cornering load cases for torsional rigidity simulations in ANSYS Mechanical
- Designed [a robotic hand](#) driven by soft pneumatic actuators 25% better at grasping than previous iterations
- Produced HVAC, plumbing, and fire suppression layouts in AutoCAD for commercial and residential projects
- Designed and validated multiple waterproof [3D-printed enclosures](#) for circuit boards against IPX5 standards

## EXPERIENCE

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**Chassis Team Lead**, UBC Formula Electric June 2025 – Present

- Led 7-person chassis subteam in design and manufacturing decisions for the 2026 competition vehicle
- Deployed SVN server on Oracle Cloud to track design changes alongside a [custom SOLIDWORKS integration](#)
- Built a [custom Slack bot and web platform](#) to manage 3D printer operations, including reservations, job submissions, and remote monitoring
- Coordinated with other subteams to ensure chassis design met packaging requirements

**Mechanical Co-op**, Avalon Mechanical May 2025 – Aug 2025

- Developed AutoLISP automation scripts to reducing CAD drafting time by over 30%, saving 7+ hours per week
- Assisted with drawing revisions, redlines, and documentation for tender and construction packages
- Performed hallway pressurization analysis and fan sizing using Excel and TRACE, calculating required airflow and pressure differentials to meet NFPA and provincial code requirements
- Validated fire sprinkler hydraulic systems using Elite Software FIRE for code-compliant designs

**Chassis Team Member**, UBC Formula Electric Sep 2023 – June 2025

- Resolved critical packaging constraints by proposing dual horizontal-vertical PCB configuration to electrical team, then [designed multi-part enclosure](#) to accommodate both components while meeting IPX5 standards
- Planned and executed carbon fiber + glass fiber composite layups for car body panels and aero kit

**Undergraduate Research Assistant**, UBC MEMS Lab May 2024 – Feb 2025

- Analyzed 15+ tendon-driven prosthetic hands to identify common successful design elements
- Rapidly prototyped design iterations using a custom-built multi-extrusion 3D printer running RepRapFirmware
- Helped develop a demonstration platform to allow the prosthetic hand to mimic human hand gestures using MATLAB and Arduino scripts along with a Leap Motion hand-tracking camera module

**Volunteer**, Victoria Hand Project July 2022 – Present

- Assembled and repaired 3D-printed low-cost prosthetic arms with voluntary open/close functionality
- Contributed concrete ideas to improve assembly speeds, leading to creation of new documentation

## PROJECTS

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**WeBWorKer Chrome Extension** [github.com/danielrbenjamin/WeBWorKer](https://github.com/danielrbenjamin/WeBWorKer)

- Published an extension on the Chrome Web Store with over 900 users at peak adoption
- Used JavaScript and CSS to provide real-time LaTeX formatted previews of plaintext math on the WeBWorKer homework platform, show matching parentheses, recognize variable names, and add custom query integrations

## SKILLS

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**Mechanical:** SOLIDWORKS, AutoCAD, ANSYS, Composites, Machining, 3D Printing, MIG Welding, FMEA

**Software:** C, MATLAB, Python, AutoLISP, JS, Arduino, Git, SVN, Docker, AWS, Jira, Bluebeam, Adobe CC