

Calvin Brereton

Mechanical Engineer

Currently based in: Kitchener, ON, Canada

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Skills

Professional Experience (in years): **5+** | **5 - 3** | **3 - 1** | **< 1**

Design

Solidworks, Iterative Design, Engineering Drawings, DFM, DFA, Fusion 360, Product Design, Specifications, Verification, Validation, Opto-mechanics, Electro-mechanics, Image Editing

Manufacturing

Rapid Prototyping, Hand Tools/Machining, 3D Printing (FDM, SLA, SLS, +), Lasercutting, Injection Molding, Quality Inspection (CTQs), CNC, Sheet Metal, EDM, GD&T, Welding

Analysis

Root Cause Analysis, Excel/Google Sheets, Tolerance Stackups, Data Management, VBA, Cost Analysis, GNU Octave, Python, Arduino, Image Analysis, C++, Git, FEA & Simulation, LabVIEW

Professional

Creative Problem Solving, Communication, Organization, Leadership, QMS, ISO 13485, SOPs, Stakeholders/Requirements, Team/Project MGMT, Supplier MGMT, Design Reviews, Agile

Work Experience

Mechanical Engineer → Mechanical Manager | [Kenota Health](#) | Aug '20 - Present

Kitchener, Ontario

- Responsibility as design authority of all major components of the product (consumable tests, blood collector, and benchtop reader)
- Root caused and implemented solutions (leading to successful volume manufacturing) of allergy test and blood collection kits
- Directly and indirectly (managed) made numerous R&D product improvements to complex medical device with 2-axis motion, precision optics, multiple fluid dispense systems, while balancing HFT requirements and resource limitations

Consultant - Prototype Engineering | [Spin Master Ltd.](#) | Apr '20 - Aug '20

Toronto, Ontario (Remote)

- Significantly improved prototype development workflow by researching and implementing novel digital modelling techniques

Mechanical Engineer & Hardware Team Lead | [Amina Health](#) | May '17 - Apr '20

Kitchener, Ontario & San Francisco, California

- Complete concept, prototype, & production design of novel cartridge + reader based vitamin measurement system
- Successfully implemented numerous electromechanical jigs for lab use, manufacturing, test/validation, & assembly
- Designed and tested dozens of optical system iterations, using various concepts & technologies to iteratively improve performance
- Created and managed budgets, timelines, inventory, design files, and hardware staff in a cross-functional team

New Products and Process Automation Specialist | [Christie Digital Inc.](#) | May '16 - Aug '16

Kitchener, Ontario

- Independently developed and released projector validation automation software to dramatically improve cost and quality of product
- Directed rollout of test automation software, SVN, LabVIEW & LabVIEW best practices within department group

Product Developer Co-op | [Christie Digital Inc.](#) | Jan '15 - Apr '15 & Sep '15 - Dec '15

Kitchener, Ontario

- Successfully investigated and implemented high volume production of a solution to severe image vibration ('blurriness') in the most widely used projector using novel test methods, brainstorming, and design refinement/selection techniques
- Start-to-finish independent development of C++ application to significantly improve laser projection cinema setup

Omitted: 3 engineering co-ops (Wilco Machine & Mold, Maclean Engineering, Cooke & Denison) + 1 retail job (Pet Valu)

Info available upon request

Education

University of Waterloo

B. A. Sc. in Mechanical Engineering

Waterloo, ON
Sept. 2012 - May 2017

- Graduated with distinction
- Electives focused on Solid Mechanics & Automation

Projects

- Designed, iterated on, injection molded, tested, and patented (US20190317115A1) a fully integrated, point of care ferritin blood test
- Designed, fabricated, and programmed a 'Magic Mirror' & a Planck keyboard as Christmas gifts
- Designed, published, and constructed custom 3D printer cabinet using low-cost/3D printed materials

Miscellaneous

- Self-taught most software skills
- Interests are varied, but include:
 - Travel
 - VR & videogames
 - Sculpting
 - Hiking
 - Music