NICK DERNOVSEK

Ottawa, Ontario, Canada

+1 (226) 979-6463 nickdernovsek@outlook.com nickdernovsek www.nickdernovsek.com

Summary

Biomedical engineering graduate with hands-on experience in medical device design, ex-vivo lab testing, circuit modelling, and FEA. Skilled in SolidWorks, COMSOL, ANSYS, MATLAB, and LTspice, with technical reports and design iteration in two startups. Seeking an entry-level role in medical device design, R&D, or product development.

Education

University of Guelph Sep 2021 – May 2025

Bachelor of Engineering, Biomedical Engineering (Honours) *Guelph, ON*

- **Focus Areas:** Biomedical Signal Analysis, Finite Element Analysis, Biomechanical Design, Bio-Instrumentation
- **Awards:** 1st Place, Project SOY Plus (2024); Best Pitch, IgniteLab (2024) and LaunchLab (2025)
- **Varsity Badminton:** Competed for three years alongside a full engineering course load.

Biomedical Experience

Biomedical Researcher – *KAT Innovation*, *Contract, Part-Time* Mar 2024 – Feb 2025

- Ran lab experiments on ex-vivo porcine bone models to evaluate an electrical bone-growth stimulation device.
- Modelled an equivalent electrical circuit of human tissue resistance in LTspice to support device development.
- Reviewed published literature to guide experimental design, test protocols, and research analysis.
- Contributed to troubleshooting, technical development, and reports in a fast-paced medical device startup.

Biomedical R&D Intern – *Pocket Clinic*, *Contract Internship* Dec 2024 – Jan 2025

- Designed piezoelectric sensor components for a smart injector system in SolidWorks.
- Simulated piezoelectric behaviour in COMSOL Multiphysics to analyze and refine device performance.
- Iterated designs based on performance analysis and documented findings in technical reports.

Technical Projects

Quick-Switch Adapter (QSA) – *Fourth-Year Capstone Design Project* 2024 – 2025

- Designed an adapter that lets re-bolters replace corroded climbing bolts without swapping between tools.
- Tested bolt strength on an Instron tensile tester, ran FEA in ANSYS, and physically tested the prototype.
- Consulted Petzl experts and route setters, then released the design files as open source.

Single-Person Log Roller – *Biomechanical Design Project*

- Worked with a physiotherapist to design a patient log roller that one caregiver can operate.

Dynamic Load on a Climbing Carabiner – *FEA Final Project*

- Modelled a Black Diamond carabiner (rated 24 kN) in SolidWorks; ANSYS predicted yielding at about 30 kN.

Additional Experience

Residential Construction Designer & Labourer – *Pacd Homes*, *Part-Time* Jul 2025 – Present

- Modelled 4 home types (1- and 2-storey, bungalow, basement) in SolidWorks from AutoCAD and Revit plans.
- Built code-compliant plumbing routes and HVAC/electrical fittings in SolidWorks Routing for clash checks.

Skills

Design & Simulation: SolidWorks, COMSOL Multiphysics, ANSYS, LTspice, MATLAB, AutoCAD, Revit

Lab & Testing: Ex-vivo Testing, Instron Tensile Testing, Oscilloscopes, Waveform Generators, Vicon Motion Capture

Research: Experimental Design, Data Analysis, Literature Review, Technical Reports, First Aid & CPR