



ERICH DEETLEFS

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WORK EXPERIENCE

Motorola Solutions

Junior Electrical Engineer (Full-Time)

Vancouver, BC

May 2025 - CURRENT

- Delivered over **\$1 million in annual savings** by leading strategic cost-reduction initiatives and optimizing bill-of-materials (BOM) across the full project portfolio.
- Led **Root Cause Analysis (RCA)** investigations on camera hardware failures, identifying critical defects to resolve RMA cases and implementing corrective actions in production.
- Engineered automated testing protocols for eMMC diagnostics and trained technical staff, significantly reducing troubleshooting time and increasing testing throughput.
- Redesigned PCB layouts to utilize application-specific ICs, successfully replacing bulky discrete component networks to miniaturize the form factor by over 50% and improve signal integrity.

Motorola Solutions

Imaging / Design Validation Engineer (Co-op)

Vancouver, BC

January 2023 - December 2023

- Implemented automated testing using **Python** and **Shell** scripting, reducing testing time by 50% and increasing accuracy of test results by 35%.
- Tested optical, mechanical, and electrical systems under temperature ranges from -40°C to 60°C and aided in the redesign of faulty components, leading to a 10% improvement in overall product durability.

BX Medical

Network Infrastructure Engineer, Mechanical Designer (Part-Time)

Vernon, BC

August 2016 – May 2025

- Designed, manufactured, and built 10+ custom micro-ITX computer systems using **SOLIDWORKS** and **3D printing** following DFM/DFA guidelines, optimizing hardware performance and workspace environment for medical professionals.
- Built and maintained an interconnected computer network of 15+ workstations that increased internal communication and productivity by 25%.

PROJECT EXPERIENCE

Paratech Innovations (Paragliding Drone with Pneumatic Launch System)

Project Manager, Mechanical Lead / Electrical Lead

Surrey, BC

January 2024 - August 2024

- Designed a custom air chamber pneumatic hammer valve used in a pneumatic cannon capable of launching projectiles upwards of 250 meters and withstanding pressures of up to 150 PSI
- Designed for manufacturing, capable of being manufactured by a single CNC lathe system.
- Designed a paragliding drone system that was launched from a pneumatic cannon and mechanically deployed via a spring system when reaching a determined altitude of 250m.

UAV Launch System

Project Manager, Mechanical Design Lead

Surrey, BC

September 2022 – December 2022

- Led a team of 4 engineering students to design a UAV launch system capable of propelling aircraft to cruising speed (over 40 m/s) in under 0.8 seconds.
- Designed the entire mechanical launch system in **SolidWorks**, performing **FEA** simulations and utilizing generative design to reduce weight by 25% and size by 30% compared to initial designs, enhancing portability in field use.

Racing Sim Accessories

Mechanical Design / Electrical Design

Surrey, BC

January 2024 – May 2024

- Designed and manufactured a high-fidelity sim-racing handbrake from scratch using **SolidWorks**, creating complex 3D assemblies to validate component fitment and range of motion before fabrication.
- Developed a "Selectable" H-Pattern/Sequential Shifter featuring a user-switchable locking mechanism, hybrid metal-polymer construction, and hall-effect/potentiometer sensing for precise input tracking.

SKILLS & INTERESTS

Mechanical: CAD (SolidWorks, Fusion 360) | FEA / CFD (SolidWorks) | GD&T | Manufacturing Processes (Surface modeling, DFM/DFA) | Additive/Subtractive Manufacturing

Electrical: PCB Design (Altium, KiCAD, Flux) | Soldering (SMD, Reflow, Hand) | Microcontrollers | Oscilloscope

Software: C++/C | Python | Simulink | MATLAB | LabVIEW | Assembly | Machine Learning

Other: Microsoft Suite | Media (SMM) | Design (Adobe, Blender) | Project Management (Jira, Clickup, Confluence)

EDUCATION

Simon Fraser University

Mechatronic Systems Engineering

Surrey, BC

September 2019 – May 2025