

Michael J. Bell

Electrical Engineering Graduate

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Web Portfolio <https://mikebell.pages.dev>

About

I am an engineering graduate with growing expertise in the fields of analog and mixed-signal circuits, RF systems, and digital design. I have experience in analog, digital, and mixed-signal circuitry, as well as RF systems, with a versatile skill set spanning multiple areas of electronics engineering. I am passionate about analog and mixed-signal circuit design and verification and driven to rapidly develop and refine my technical skills.

Co-op Experience

General Dynamics Mission Systems – Canada, Calgary AB Jan 2024 - Sep 2024

Research and Development Hardware Team Engineering Co-op (8 mo.)

- Circuit design and simulation of analog filters & amplifiers, DC-DC switch-mode power systems, and power delivery filtering.
- Hierarchical Schematic layouts and drafting using Siemens Mentor Xpedition ECAD.
- PDN Analysis and decoupling optimization using HyperLynx SI PI Thermal and Altera PDN Analysis tools.
- Focused part sourcing to find components with a strict set of criteria and characteristics.
- FPGA pin assignment and layout (fanout) optimization.
- Working in an environment that operates with secret information on a need-to-know basis, and usage of material that falls under ITAR.

SKYTRAC, Kelowna BC May 2023 - Dec 2023

Design Airworthiness Organization Engineering Co-op (8 mo.)

- Working with a team to generate supplemental type certificates and supporting documentation for avionics equipment installations.
- Reviewing aircraft wiring diagrams and avionics installations, including provisional wiring.
- Generation of engineering service bulletins, certification plans, electrical load analysis, DO-160G qualification reports, and flight manual supplement documentation using standardized technical English (ASD-STE100).

Technical Work Experience

UBC Okanagan Omega Labs, Kelowna BC May 2025 - April 2026

Undergraduate Research Assistant

- Working in the development of new and novel technologies involving MXene and contactless microwave sensing.
- Rapid prototyping of mechanical systems using 3D printers, and sourcing parts from McMaster-Carr.
- Data processing, analysis, and presentation using MATLAB and Python for technical papers.
- Working with lab equipment such as Profilometers, Vector Network Analyzers, 4-wire conductivity testers.
- Programming ESP32 web interfaces and web sockets for remote browser-controlled test fixtures.

Tekmar Control Systems Ltd., Vernon BC Jun 2020 - Sep 2021

Electronics Manufacturer 4-month summer positions 2020, 2021

- Through hole and surface mount soldering, including soldering under a microscope.
- Assembly of HVAC control boards and sensors.
- Troubleshooting and Repair of non-compliant products and PCB's.

My full work experience timeline can be found at <https://mikebell.pages.dev/about/work/>

Technical Projects

Please see my web portfolio to view my projects - <https://mikebell.pages.dev/projects/>

For smaller technical write-ups on projects and experiments, please see my blog - <https://mikebell.pages.dev/posts/>

Education

Bachelor of Applied Science, Electrical Engineering

2020 - 2026

University of British Columbia Okanagan, *Kelowna BC*

- 2x Deputy Vice-Chancellor Scholarship for Continuing Students UBC (2020, 2021)

Technical Skills

Hardware

- Multimeters, Oscilloscopes, Power Supplies, Function Generators, Vector Network Analyzers, Tracking Generators and Spectrum Analyzers, and some minor SCPI knowledge.
- Soldering (THT, SMD, Under microscope), PCB fabrication & etching, Troubleshooting and Repair.
- I am very familiar with 3D Printing and have experience with CNC Milling circuit boards.
- Knowledge of a wide variety of tools, vernier scale tools, power tools (drills, saws, construction).
- Programming Embedded Atmel (ATMega) and Espressif (ESP8266, ESP32) Microcontrollers.
- Constructing and configuring analog communication systems for simplex and simplex repeater stations.

Software

- Altium Designer, KiCAD, Siemens Xpedition.
- LTSpice, QUCS Studio, Cadence AWR and AXIEM, Cadence Virtuoso, Ansys HFSS.
- Siemens Hyperlynx for PDN analysis.
- Solidworks, Prusa Slicer, Bambu Labs Studio.
- GNU Octave, MATLAB and SIMULINK.
- C++, Python, Javascript, Bash, Batch & Powershell, HTML, CSS, Markdown.
- Linux systems - Debian & Arch linux based operating systems.
- PDF editors such as Bluebeam, and Adobe Acrobat.
- Microsoft Office suite, Word, Excel, Microsoft VBA Macros.

Further details can be found at <https://mikebell.pages.dev/about/>

Workplace Skills

- Following through on tasks to completion with a high level of attention to detail and reliability.
- Easily motivated and will work effectively while independent or within a team.
- Ability to adapt to new and changing environments quickly and apply new skills in a timely manner.
- Very strong organizational skills with time, documentation, and resource allocation.
- Strong ability to coordinate within a team and prioritize tasks effectively.

Clubs & Volunteer Experience

IEEE MLRC UBC Okanagan Student Branch

Sep 2022 – May 2026

Lab Monitor, Workshop Host and Volunteer, Peer Tutor

- Hosting the 2022, 2023, and 2025 PCB design workshop, where I taught students how to design a PCB starting from the schematic, sourcing parts, designing the PCB, ordering PCBs, and soldering SMD and THT.
- Guiding and helping students through personal projects, course projects, and capstone projects.

Interests and Activities

- Amateur Radio – Long distance HF communications. Design and construction of home-made radio receivers. I have achieved my Advanced License, allowing me to also design home-made transmitters.
- Analog Electronics – I enjoy tinkering with all sorts of analog electronics for Audio systems, RF systems, and modular synthesizers.
- Outdoor activities – Skiing, Swimming, Off-Roading, Camping, Marksmanship, and Hiking.
- Music – I play Piano and have been into making my own instruments.

References can be provided upon request.