

Michael J. Bell

Electrical Engineering Graduate

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Web Portfolio <https://mikebell.cc/>

About

Electrical Engineering graduate with distinction specializing in analog/mixed-signal circuit design, RF communication systems, and embedded design. Proven track record in hardware R&D, rapid prototyping, and experience across defense and aerospace environments.

Co-op Experience

General Dynamics Mission Systems – Canada, Calgary AB

Jan 2024 - Sep 2024

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

- Designed and simulated analog filters, amplifiers, DC-DC switch-mode power systems, and power delivery filtering.
- Drafted hierarchical schematic layouts using Siemens Mentor Xpedition ECAD.
- Optimized power delivery networks (PDN) and decoupling using HyperLynx SI/PI Thermal and Altera PDN tools.
- Sourced components matching strict defense, environmental, and cost criteria.
- Streamlined FPGA pin assignments and layout fanout optimization.
- Maintained strict compliance with ITAR regulations and secret-level data security protocols.

SKYTRAC, Kelowna BC

May 2023 - Dec 2023

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

- Generated supplemental type certificates and supporting documentation for avionics equipment installations.
- Reviewed aircraft wiring diagrams and provisional avionics installations.
- Generation engineering service bulletins, certification plans, electrical load analyses, and DO-160G qualification reports using 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.
- Operated advanced equipment including 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

- Performed THT and SMD soldering for HVAC control boards.
- Assembled HVAC control boards and sensors.
- Troubleshooting and Repair of non-compliant products and PCB's (soldering under microscope).

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

Technical Projects

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

For smaller technical write-ups on projects and experiments, please see my blog - <https://mikebell.cc/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)
- Graduated with Distinction | **GPA 3.38 / 4.00**

Technical Skills

Hardware, Testing & Troubleshooting

- Test & Measurement Equipment (Multimeters, Oscilloscopes, Power Supplies).
- RF & Signal Analysis (Function Generators, Vector Network Analyzers, Tracking Generators, Spectrum Analyzers)
- Soldering (THT, SMD, Under microscope), PCB fabrication & Etching, Troubleshooting and Repair.
- 3D Printing & CNC Milling (circuit boards).
- Precision Measurement (Vernier tools), Power Tools, General Construction.
- Embedded Systems & Microcontrollers (Atmel ATmega, Espressif ESP8266, ESP32).
- Analog Communication Systems (Simplex & Repeater Stations).

Software, EDA & CAD

- PCB Design/EDA (Altium Designer, KiCAD, Siemens Xpedition), IC Layout (Cadence Virtuoso).
- Circuit Simulation (LTSpice, QUCS Studio), RF/Electromagnetic Simulation (Cadence AWR, AXIEM, Ansys HFSS).
- PDN Analysis (Siemens HyperLynx).
- 3D CAD & Slicing (Solidworks, PrusaSlicer, Bambu Studio).
- Scientific Computing (MATLAB, Simulink, GNU Octave).
- 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.cc/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, transmitters, antenna solutions, and transmission lines.
 - Analog Electronics - I enjoy developing circuits & PCB design for analog electronics for audio systems, RF systems, and modular synthesizers.
 - Outdoor activities - Skiing, Swimming, Off-Road, Camping, Marksmanship, and Hiking.
 - Music - I play Piano and have been tinkering around making my own instruments.
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