Glen Healy

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Summary

- Electrical Engineering student at BCIT with **hands-on experience in circuit design, embedded systems, and industrial automation**.
- Proficient in **LTspice, MATLAB, KiCAD, SolidWorks, LabVIEW, and FPGA programming (SystemVerilog)** and other **languages (C, C++, and Python)**
- Strong background in **sensor integration, PCB design, and control systems**.
- Experience in **data analysis, instrumentation, and experimental design**, applied from previous work in **agricultural research**.
- Passionate about **renewable energy, sustainable technologies, and real-world problem-solving**.

Education

Bachelor of Engineering in Electrical Engineering *2026*
British Columbia Institute of Technology, Burnaby BC

- Designed and manufactured a **12V regulated power supply** using **KiCAD, SolidWorks**, and **PCB soldering**.
- Programmed **MATLAB scripts** to analyze **real-time circuit data, signal processing, and automation**.
- Built & tested **operational amplifier circuits** to process **sensor signals** for **industrial applications**.
- Developed **microcontroller-based control circuits** with **C/C++ for embedded systems**.
- Troubleshooting **electrical systems** using **oscilloscopes, digital multimeters, and LabVIEW**.
- Worked on **sensor integration** (**pressure, temperature, strain gauge, humidity**) for **industrial automation**.
- Produced professional **technical reports** for **circuit analysis, simulations, and data-driven insights**.
- Conducted frequency response analysis using **Bode plots** and **Laplace transforms** to characterize amplifiers and filters.

Bachelor of Science: Major in Microbiology, Minor in Biology (Co-op) *2014*
University of Victoria, Victoria BC

Professional Experience

Plant Care Services Field Manager | University of British Columbia *April 2016 – July 2022*

- Managed field research operations for **30+ projects annually**, ensuring **compliance with scientific protocols and safety standards**.
- Designed and maintained field monitoring systems, integrating **sensor data collection** for soil and environmental analysis.
- Led troubleshooting and maintenance of **farm equipment, irrigation systems, and environmental monitoring tools**.
- Collaborated with researchers and trained students, providing guidance on **data collection, instrumentation, and best practices**.

Environmental Technician | Diamond Head Consulting *June 2015 – Dec 2015*

- Identified and mapped invasive plant species (*Japanese Knotweed, Giant Hogweed, Lamium, Tansy*) using **GIS software (GISproDIU)**.
- Conducted targeted herbicide applications to control invasive species while ensuring **compliance with environmental safety regulations**.
- Planted native trees and shrubs as part of **restoration efforts** to improve ecological balance.

Professional Experience Continued

Research Assistant | Agriculture & Agri-Food Canada *Jan 2013 – April 2015*

- Conducted **molecular biology research** on **plant pathology, soil health, and food safety**, working on multiple projects.
- Extracted and analyzed **DNA/RNA** from plant and bacterial samples using **PCR, qPCR, and gene expression analysis**.
- Designed and prepared **sequencing libraries** for **Illumina next-generation sequencing**.
- Performed **microbiological isolations** of **fungi, yeast, and *E. coli* O157:H7** using **selective media** in a **biosafety level 2 laboratory**.
- Designed **custom primers** using **Primer3 software** for genetic studies.
- Analyzed the impact of **organic amendments** on **soil health, root diseases, and nematode populations**.
- Collected and processed **environmental data** from **weather stations** for climate impact research.
- Designed and presented **scientific posters**, summarizing research findings for academic and industry professionals.

Projects

Catalina 27 Sailboat *March 2016 – present*

- Designed and rewired all **electrical systems** aboard a **27-ft Catalina sailboat**.
- Installed **fuse panels, inverters, charge controllers, and battery management systems**.
- Integrated **solar panels for renewable energy**, optimizing efficiency and power storage.

Automated Recycling Sorter Project March-April 2024

- Developed an **automated object-sorting system** using **C++ and computer vision**.
- Programmed **motor control algorithms** for precise object sorting based on real-time camera input.
- **Designed & 3D-printed mechanical components** for conveyor and sorting mechanism.

Video Game Development and Programming *Feb 2024*

- Designed and developed a **physics-based game** using **C++**, focusing on real-time graphics and user interactivity.
- **Optimized algorithms** for game physics, rendering, and animation.

Community Involvement

- **BCIT Engineering Without Borders** Member *2023 - Present*
- **Volunteer Ski Instructor** | Vancouver Adaptive Snow Sports *2015 – 2022*
- **Varsity Outdoor Club** | Trip Coordinator & Leader *2016 – 2019*
- **Volunteer Referee** | Blind Hockey Organization *2016*

Interests

- **Renewable & Sustainable Applied Systems** – Wind energy, solar, and electric motors.
- **Outdoor Activities** – Skiing, running, biking, and exploring **BC's wilderness**.
- **Sailing & Snorkeling** – Exploring **coastal waters**.
- **Gardening & Native Plants** – Sustainable landscaping & **ecological restoration**.
- **Building & Masonry** – Experience in **construction, landscaping, and stone masonry**