






Winny Dariska Domkem Kameni

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[in/winny-kameni-194349185](https://www.linkedin.com/in/winny-kameni-194349185)  winny-portfolio-1.vercel.app **Citizenship:** Canadian
Languages: English · French · German (fluent)

PROFESSIONAL SUMMARY

Optical & embedded-systems engineer with hands-on experience designing, testing, and validating **free-space optical (FSO) communication systems**, optical links, fiber-optic components, and sensor-integrated platforms. Skilled in **optical communication, imaging systems, DSP, microcontrollers, and experimental characterization**. Experienced with **Zemax, MATLAB, Python, C++, LabVIEW, FPGA workflows**, and optical hardware troubleshooting. Proven ability to deliver high-accuracy optical performance in R&D environments.

CORE SKILLS

Optics & Photonics

FSO communication • Optical link design • Imaging systems • Lens & telescope optimization • Fiber optics • FBG sensing • Optical alignment • Laser/diode systems • Experimental characterization

Software & Simulation

Zemax OpticStudio • MATLAB • Python (NumPy, pandas, matplotlib) • C++ • Rust • LabVIEW • GitHub • JIRA

Hardware & Embedded

Arduino & microcontrollers • Digital/analog circuits • Photodiodes • Oscilloscopes • Spectrum analyzers • FPGA-assisted workflows • Sensor integration

Signal Processing & ML

DSP, filtering (Wiener/wavelet), FFT • Time-frequency analysis • Statistical modeling • Machine learning for biomedical/optical signals

EDUCATION

Carleton University — Bachelor of Information Technology (BIT), Optical Systems & Sensors
Ottawa, Canada | Expected March 2026

- **GPA:** 11.88/12 (A+ Standing) — Dean's List (2022, 2023, 2024)
 - **Awards:** IEEE Canadian Foundation Scholarship; Amplify Immersion Scholarship; multiple merit awards
 - **Coursework:** Optical Communication Networks, Circuits & Signals, Digital Signal Processing, Assembly Language, Probability, Deep Learning
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RESEARCH & ACADEMIC EXPERIENCE

National Research Council Canada (NRC) — *Research Student, Free-Space Optical Communication*

Ottawa, Canada | Sept 2025 – Present

- Developing FSO communication systems for rural and remote connectivity.
- Modeling optical link reliability under atmospheric turbulence; optimizing transmitter/receiver alignment.
- Performing DSP-based calibration, real-time testing, and optical channel characterization.

Carleton Optical Innovation Lab — *Research Assistant, Fiber-Bragg Grating Systems*

Ottawa, Canada | Sept 2024 – Apr 2025

- Conducted FBG experiments under Dr. Christopher Smelser.
- Engineered optical setups, aligned fiber components, characterized spectral responses.
- Built experimental rigs, debugged hardware/software, and prepared technical reports/posters.

Carleton University — *Research Assistant, Biomedical Signal Processing*

Ottawa, Canada | Sept 2024 – Present

- Designed ECG denoising systems and AI-based cardiovascular classifiers.
- Implemented Wiener/wavelet filters and improved SNR & classification accuracy.
- Integrated wearable ECG sensors with microcontrollers for real-time inference.

INDUSTRY EXPERIENCE

Xplore Inc. — Technical Support Specialist

Ottawa, Canada | Jul 2023 – May 2024

- Diagnosed and resolved complex issues in **fiber-optic and satellite** communication systems.
- Ensured high service reliability and customer satisfaction for rural broadband clients.

Gexel (Cogeco) — IT Help Desk Technician

Ottawa, Canada | Aug 2022 – Apr 2023

- Resolved hardware/software incidents; maintained **fiber-optic network performance** and device connectivity.

LGM Solutions — IT Technician

Ottawa, Canada | Feb 2022 – Jun 2022

- Assembled and configured computer systems and networks; maintained system integrity across client sites.

Snipes — Research Assistant (Market & Technical Research)

Cologne, Germany | Jun 2021 – Oct 2021

- Conducted research on **retail operations and inventory optimization**; analyzed data and supported process improvements.

CoinPay (Bhent Inc.) — Trader & IT Assistant

Yaoundé, Cameroon | Sept 2020 – Apr 2021

- Facilitated cryptocurrency exchange operations and contributed to **web development projects** using HTML/CSS/JavaScript.
- Produced technical and translation documentation for the Bhent Inc. team.

Bhent Inc. — Junior Frontend Developer

Yaoundé, Cameroon | Aug 2019 – Jun 2020

- Developed and assembled **drone swarm platforms** with multi-drone control and sensor data collection.
- Programmed Ardupilot & GAZEBO simulations, enabling synchronized flight tests and 2D/3D visualization.

PROJECT HIGHLIGHTS

3D-Printed Aspheric Lenses & Fiber Y-Couplers: Fabricated optical components; measured aberrations & coupling efficiency.

Zemax Optical Designs: Optimized telescopes and multi-lens assemblies for focal/aberration constraints.

Arduino Optical Sensor Prototypes: Built sensor-integrated platforms for signal acquisition and actuator control.

FSO/DSP Pipeline: Implemented signal filters and calibration routines for optical communication reliability.

CERTIFICATIONS & AWARDS

- **Ethics Certification for Human Research Trials** — Panel on research ethics (2025)
 - **Clarence C. Gibson Scholarship** (2023–2024)
 - **Claude Bissell Scholarship** (2024–2025)
 - **Anthony Whitehead Memorial Scholarship** (2024–2025)
 - **IEEE Canadian Foundation Scholarship** (2024–2025)
 - **Amplify Immersion Scholarship** (2023–2024)
 - **Dean's Honour List** — Carleton University (2023, 2024, 2025)
 - **WHMIS & OHSA Certified**
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ADDITIONAL INFORMATION

- Open to relocation — Canada · U.S. · Europe
- Interested in R&D, Optical/Biomedical Systems, and Technology Management roles
- Active IEEE Student Member, Optica Member and SPIE Member