

Dominic Thompson

737-346-2132 | Dominicjt23@gmail.com | [LinkedIn](#) | [GitHub](#)

Education

Queen's University
Master of Applied Science

Sept. 2024 – Present
Kingston, ON

Queen's University
Bachelor's in Engineering Physics with a specialization in Computation

Sept. 2020 – May 2024
Kingston, ON

Experience

Senior Leadership Team

Summers 2018 – 2019 & 2022 – 2024

RKY Camp

Parham, ON

- Progressed from counselor to senior staff, transitioning from supervising campers to leading and supporting counselor team
- Directly supervised 10–12 staff members, providing guidance, conflict resolution, and daily operational support
- Developed and ran engaging programming for both staff and campers, improving participant experience

Field Test and Software Development Intern

May 2022 – Aug. 2022

Everynet

Austin, TX

- Contributed to development of a LoRaWAN-based IoT network for low-power, long-range RF communication
- Developed a data visualization web application and conducted field testing in Jakarta, Indonesia for proof of concept deployment, validating reliability under real-world conditions
- Verified sensor coverage across an urban community

Projects

Inverse Design of Photonic Crystal Waveguides | *Python, SciPy, JAX, Slurm*

Sept. 2024 – Present

- Reducing loss in slow-light photonic crystal waveguides for use in nonlinear quantum optics
- Designed software to simulate and perform inverse design, targeting specific loss and dispersion thresholds
- One manuscript currently under review at Physical Review A (PRA)

Inverse Design of Grating Couplers | *Tidy3D, Python, Yield Optimization*

Aug. 2025 – Present

- Increased coupling efficiency and yield of InP grating couplers for use in the telecom C-band
- Worked with the fabrication team to incorporate fabrication noise into the design methodology
- Ran GPU-accelerated optimizations using Tidy3D
- Grating couplers currently being fabricated for use in a single photon measurement experiment

Noise-to-Error Mapping in Quantum Photonics | *Stim, Noise Modeling, QEC*

Nov. 2025 – Present

- Connecting hardware losses to theoretical model of quantum error correction
- Used Stim to simulate noisy quantum stabilizer circuits and Pymatching to evaluate error thresholds

Leadership and Involvement

Supervised 2 Undergraduate Engineers

Sept. 2024 – May 2025 & Sept. 2025 – Present

- Co-mentored two undergraduates through their senior thesis projects in (1) deep reinforcement learning based inverse design of photonic crystal waveguides and (2) computer vision analysis of fabrication defects in integrated photonics
- Held weekly meetings with students to provide technical guidance and project milestone support
- One student successfully graduated in 2025; the second is demonstrating strong progress and promising results

Optica Chapter Treasurer

Jan. 2025 – Jan. 2026

- Elected as Treasurer in 2025 for the Optical Student Chapter, Queen's University
- Organized and facilitated talks, lab tours, and social events to promote optics within the community

Technical Skills

Programming: Python, C/C++, Java, JavaScript, HTML/CSS, Django, GitHub

Scientific Computing: NumPy, JAX, PyTorch, CUDA, Optax, Numba, Slurm

Photonics: Tidy3D, PIC Design, Inverse Design, GDSII

Certifications: Integrated Photonics Fundamentals, Modern CUDA C++, Currently pursuing AIM Photonics' PIC1