Paula Dirac

(647) 012 – 3456 | diracp@mcmaster.ca | linkedin.com/dirac_equation | Vaughn ON

HIGHLIGHT OF QUALIFICATIONS

- Enrolled in level 3 of McMaster University's Engineering Physics Co-op Program specializing in optics and photonics, eligible for **4-, 8-, 12- and 16-month co-op** placement starting May 2027
- Strong experience working with photonic systems and optical sensors in industry and research settings
- Familiarity with microcontroller programming and modelling advanced systems in course projects and internships

EDUCATION

Bachelor of Engineering Co-op (BEng) | *Engineering Physics* **2024 – 2029**

McMaster University

- Relevant courses: Physical Optics, Photonic Devices, Semiconductor Junction Devices, Lasers & Electro-Optics, Bio-photonics, Electromagnetics, Signals & Systems, Semiconductor Manufacturing Technology

EXPERIENCE

Photonics Systems Intern | *XYZ Telecom, Aurora ON* **May - Aug 2026**

- Supported the development of high-speed fiber-optic communication modules, contributing to a 15% increase in signal integrity through optimization of optical alignment procedures
- Conducted optical power budget analysis and BER testing on DWDM systems, identifying and resolving attenuation issues across 10+ network nodes
- Automated test routines using Python and LabVIEW, reducing manual testing time by 30%
- Collaborated with R&D to evaluate photonic components (VCSELs, photodiodes), demonstrating communication and teamwork skills in technical environments

Vehicle Systems Engineering Intern | *ABC Automotive, Burlington ON* **May - Aug 2025**

- Assisted in the development of LiDAR-based driver assistance systems, improving object detection accuracy by 18% through calibration of optical sensors and signal processing algorithms
- Performed thermal and vibration analysis on embedded photonic components to ensure compliance with automotive reliability standards (AEC-Q100)
- Utilized MATLAB/Simulink to model sensor fusion algorithms integrating LiDAR, radar, and camera data
- Conducted lab testing using oscilloscopes, optical power meters, and CAN bus analyzers, reducing diagnostic time by 25%

Store Associate (Part-time) | *Walmart, Vaughn ON* **Jun 2023 – Mar 2024**

- Created a positive shopping experience for customers by kindly assisting in any inquiries or directions, highlighting communication ability in fast paced settings
- Worked closely with coworkers to maintain flow and efficiency, highlighting teamwork ability in fast-paced settings
- Resolved customer complaints and difficult situations, showing professionalism and problem-solving skills in real-time situations

PROJECT

PID Control System | *Microcontroller Course Final Project* **Mar – Apr 2027**

- Built a real-time distance regulation system using an MSP430 microcontroller and IR sensor
- Coded a custom PID controller in C, Integrating ADC, timers, and UART for precise sensing and serial data output
- Delivered a live demo and technical report as part of a 3-person team over a 4-week sprint, highlighting communication skills and consistency in meeting deliverables

Arduino Robot | *McMaster University Sumobot Competition* **2024 – Jan 2025**

- Constructed a 15x15x10 cm mini robot that is designed to push other robots outside an arena
- Programmed C++ movement algorithms based on data coming from an infrared sensor
- Employed Autodesk Inventor to create and 3D print CAD models, improving robot durability
- Achieved 3rd place finish at interschool competition out of 40 undergraduate competitors

EXTRACURRICULAR ACTIVITIES

Second Year Representative | *Engineering Physics Society* **Sept 2025 - Present**

- Elected to represent over 50 peers in academic and extracurricular matters, serving as a liaison between students and faculty leadership
- Organized and promoted 5 student engagement initiatives garnering a total of 600 participants, highlighting project management, marketing and event execution skills
- Facilitated monthly meetings with society executives to advocate for student concerns, contributing to the implementation of two new academic support programs

SKILLS

Programming Languages: Python, C/C++, MATLAB, Java

Software Tools: Simulink, COMSOL, LabVIEW, Excel, MS Office, GSuite, Autodesk Inventor, SolidWorks

Professional Certifications:

Standard First Aid with CPR-C - *YMCA of Greater Toronto* *Jun 2026*