

Duncan McRae

Electrical Engineering Intern

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SUMMARY OF QUALIFICATIONS

Honours Physics and Electrical Engineering student entering second CO-OP placement. Successfully completed nine semesters of diverse coursework involving both advanced physics concepts and modern electrical engineering principles. Proven in hands-on work involving problem solving and a persistent work-ethic. Mechanically inclined with a passion for electronics and control systems.

EDUCATION

Honours Physics and Electrical Engineering with Specialization in Communications (CO-OP)

University of Ottawa, Ottawa, ON. / 2021-Present

- Expected Graduation May 2027
- CGPA 7.57 / 10

SKILLS

Soft skills:

- Verbal and written communication
- Problem-solving
- Autonomy
- Tenacity

Technical skills:

- Circuit analysis and design
- Solid state components
- Communications systems
- Metalworking / Welding / Soldering
- Equipment maintenance and repair
- Machinery operation
- Carpentry

Computer Skills:

- Python, C, MATLAB, VBA
- Windows, Linux, Docker, VS Code
- Multisim, SolidWorks, Fusion 360
- Microsoft Office

PROJECTS

Capstone Project: Drone-Targeting Device with Artificial Intelligence (AI)

University of Ottawa, Ottawa, ON. / Sept. 2025 - Present

- Working with a group of engineering students, designing a device to locate and track encroaching drones and UAVs using Voxel movement method and AI image recognition.

Physics Research Project: Intermediate Band (IB) Mobility in IB Solar Cells

University of Ottawa, Ottawa, ON. / Sept. 2025 – Present

- Working under a professor at the University of Ottawa, researching the effects of IB mobility on the efficiency of IB solar cells for practical implementation.

Radio Frequency (RF) Power Characterization

University of Ottawa, Ottawa, ON. / Sept. - Dec. 2025

- Worked in a partnership to design, assemble and test a device measuring and parameterizing RF power available for low power devices.

EXPERIENCE

Engineering Technician / BluMetric Environmental Inc. (CO-OP) / Carp, ON. / Jan. – Aug. 2025

- Disassembled and assembled military equipment.
- Created documentation and manuals for assembly of new equipment.

Labourer / JS Maçonnerie Inc /Embrun, ON. / May. – Aug. 2023

- Assisted bricklayers with brick moving, sorting, cutting and mortar mixing

Farm Hand / Charlottengro Farms Inc. / Williamstown, ON. / 2020 – 2023

- Operated, maintained, and repaired equipment and machinery.
- Installed new equipment when necessary.