RYAN MJ. MCCUAIG

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EDUCATION

University of Western Ontario — **Bachelor of Engineering Science (BESc), Mechatronics Engineering** June 2025
Graduated **With Distinction, Co-op Designation**
Relevant Coursework: Real Time & Embedded Systems, Control Systems, Advanced Image Processing & Analysis, Circuit Analysis, CAD, FEA, Digital Logic Systems, Mechanical Design, Sensors & Actuators, Robotic Kinematics & Manipulators, Thermodynamics

SKILLS

Programming	C, Java, MATLAB, Arduino, PLC (ladder logic), PyTorch, Assembly Language (ARM)
CAD	SOLIDWORKS, AutoCAD, Onshape, KiCad
Simulation	Micro-Cap, FEA (SolidWorks Simulation), Simscape
Technical	Embedded Systems (µC/OS-II), Circuit Design, PCB Design, Mechanical Design, Machine Learning (CNNs)
Technologies	GitHub, VS Code, MS Office, Siemens TIA Portal
Operating Systems	Windows, Mac

PROFESSIONAL EXPERIENCE

Quality Engineering Co-op **Guelph, ON**
Camtac Manufacturing May 2024 – Aug 2024

- Operated Coordinate Measuring Machines (CMMs) to verify part dimensions, ensuring components met precise mechanical specifications.
- Analyzed heat treatment results and prepared microhardness/microstructure reports linking material properties to performance.
- Collaborated with cross-functional engineering teams to identify and resolve quality issues in automotive components.
- Improved inspection traceability by digitizing QA workflows in **Excel** and implementing a part intake tracker, reducing manual entry time by approximately **30%** during a prior Linamar co-op at Comtech Manufacturing.

Mechanical and Manufacturing Engineering Co-op **Guelph, ON**
Linamar Light Metals May 2023 – Aug 2023

- Created engineering drawings in **AutoCAD** for structural EV components to be produced in a new high-pressure die casting (HPDC) facility.
- Developed detailed process specifications in **SolidWorks** to guide machining and assembly, ensuring components met all technical and dimensional requirements.
- Participated in regular meetings with the client company and coordinated with equipment suppliers to support facility setup and procurement decisions.
- Supported subsystem design efforts and collaborated with quality and production teams to align on key project milestones.

PROJECTS

Autonomous Tree Planting Robot for Reforestation **London, ON**
Capstone Design Project 2024 – 2025

- Designed and built an autonomous sapling planting robot featuring hydraulic actuation and a probe-based soil sensing system.
- Selected all electrical components and created complete wiring schematics using **KiCad**.
- Contributed to mechanical design in **SolidWorks**, and supported **Arduino-based** control system programming.
- Led 3D printing efforts, producing custom components for a conveyor system and various sensor mounts.
- Achieved a **15-second** planting cycle; prototype placed **4th** in the Western Mechatronics Engineering Capstone Showcase.

EXTRACURRICULARS

WE Bots Member **London, ON**
Western Engineering Robotics Team Sept 2023 – April 2024

- Contributed to the design and implementation of power systems for an autonomous bipedal robot.
- Gained hands-on experience with PCB layout, circuit analysis, and embedded microcontroller development.

AWARDS & ACHIEVEMENTS

- **Dean's Honour List**, University of Western Ontario 2021-2025
- **Western Scholarship of Distinction**, awarded upon admission 2021