

# Ronald Joyce

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## Highlight of Qualifications

- Enrolled in level 3 of McMaster University's Automotive Engineering Technology Co-op program, seeking 4-month co-op placement starting May 2029
- Extensive knowledge of vehicle design and manufacturing from industry internships and coursework
- Proven experience with 3D modelling and simulation design software in design project work
- Outstanding communication, project management and teamwork skills through extracurricular technical team experience

## Education

### Bachelor of Technology Co-op (BTech) | Automotive Engineering Technology

2024 – 2029

McMaster University

- Enrolled in an interdisciplinary program combining technical skills from mechanical and electrical engineering, and business management practices
- Working toward 2 simultaneous and additional credentials: an advanced diploma in Mechanical Engineering Technology and a business management certificate
- Pursuing an accelerated MBA option via completion of Managerial Finance and Accounting courses in DeGroote School of Business

## Experience

### Mechanical Engineering Intern

Ford Motor Company – Oakville ON

- Improved component durability testing efficiency by 20% by developing automated test rigs using SolidWorks, LabVIEW, and DAQ systems
- Conducted finite element analysis (FEA) on suspension components using ANSYS to validate design changes, reducing material usage by 8% without compromising safety
- Supported cross-functional design reviews by creating detailed CAD models, engineering drawings, and tolerance stack-ups for prototype assemblies, showing dependability in fast-paced settings

### Automotive Technician Intern

May – Aug 2025

Berry's Automotive Repairs – Burlington ON

- Diagnosed and repaired mechanical and electrical issues on a variety of domestic and import vehicles, improving service turnaround time
- Performed routine maintenance including brake service, oil changes, tire rotations, and fluid checks using OBD-II scanners, torque tools, and shop diagnostic equipment
- Assisted senior technicians with engine and transmission repairs, gaining hands-on experience with powertrain systems, suspension components, and vehicle electronics
- Collaborated with other mechanics and interns to perform fixes for client cars, demonstrating communication and teamwork abilities in fast-paced, technical settings

## Projects

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### Parametric Assembly & Kinematic Simulation

Mar-Apr 2026

Advanced CAD Design Course Project - McMaster University

- Designed and simulated a mechanical assembly using SolidWorks, applying parametric modeling, kinematic joints, and motion laws to replicate real-world mechanical behavior
- Created complex parts using wireframe modeling, multi-section surfaces, and Boolean operations, integrating them into a fully constrained assembly
- Conducted interference analysis, clash detection, and motion studies, generating animations to visualize assembly sequences and functional motion

## Extracurricular Activities

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### Data Acquisition Team Member

Sept 2026 – Present

McMaster University Baja Racing Team

- Engineered and deployed a robust DAQ system using STM32 microcontrollers and CAN bus protocols to monitor key vehicle parameters
- Integrated and calibrated sensors for accurate real-time data collection under off-road conditions
- Developed data logging and visualization tools using MATLAB and Python (NumPy, Matplotlib) to analyze performance trends and inform iterative design improvements
- Collaborated cross-functionally with powertrain and chassis teams to ensure seamless integration of DAQ hardware and minimal system interference, showing communication and collaboration abilities

### First Year Representative

Oct 2024 – Apr 2025

Women in Engineering McMaster Chapter

- Acted as a liaison between first-year students and chapter leadership, enhancing communication and ensuring inclusive representation of diverse student voices
- Spearheaded outreach initiatives that increased first-year engagement by 15% through event promotion, peer networking, and collaborative planning
- Contributed to the planning and execution of professional development events, fostering skills in project coordination, time management, and team collaboration

## Professional Development

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### Industry 4.0 in Advanced Manufacturing Program

Jan - Mar 2026

McMaster Manufacturing Research Institute (MMRI) Industrial Training Program

- Completed online modules about sensors, data acquisition, analytics, visualization, and machine tool communication protocols, developing technical abilities in industrial engineering

## Additional Skills

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**Software:** AutoCAD, Autodesk Inventor, Fusion 360, C++, ROS, PLC, Simulink, Excel, MS Office, GSuite

**Lab Skills:** 3D printing, Machining (Lathe, Mill, CNC, Drill press, Bandsaw), laser cutting, tensile test

**Certifications:** CPR & Standard First-Aid Certification, Completed WHMIS training, G-class driver's license