

BILAL SHAHID

Automation Engineering Student

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Education

McMaster University

Bachelor Of Technology (B.Tech. Coop) - Automation Engineering Technology

Expected Graduation- April 2027

Hamilton, ON

Relevant Courses:

Advanced PLC Programming and Control, CAD for Design, Control Theory, Engineering Statistics, Project Management, Motion Control and Robotics

Experience

Automation & Controls Co-op

CIMCO Refrigeration Inc.

January 2025 - September 2025

- Tested and Validated **40+** industrial PLC/DDC electric control panels (Allen-Bradley, Delta, Distech), identifying and resolving wiring/sensor issues to reduce commissioning delays by **30%**.
- Designed electrical schematics and panel layouts in **AutoCAD Electrical**. Specified PLC modules, relays, and power supplies for 100% project requirement satisfaction.
- Procured and configured 15+ site and HMI computers via SAP, pre-loading software and coordinating shipments, improving field startup efficiency by over **50%**.
- Update and issued BOMs, tracked transmittals, and coordinated panel production across Canada, ensuring timely delivery of 20+ panels without rework.
- Mentored a new co-op student and collaborated with engineering teams to fast-track work, reducing design approval times by **15%**.

Controls and Design Lead/Mentor

FIRST Robotics Competition Team 1241: THEORY6

September 2018 – Present

- Programmed motion-control systems (holonomic drive, PID, feed-forward tuning) using custom-written **Java** libraries with gyro and encoder feedback to improve maneuverability/accuracy by 20% over previous benchmark
- Developed localization using a fiducial-based tracking system, increasing autonomous consistency by one score standard deviation via combining April tag vision algorithms and dead reckoning
- Designed and built award-winning robotic mechanisms (multi-stage Flywheel Shooter) using **Autodesk Inventor** and **AutoCAD**, integrating mechanical, electrical, and control subsystems
- Led electrical system architecture and troubleshooting, organizing wiring and resolving failures to ensure high reliability in competition
- Mentored students in all fields, while managing high-speed repairs during high-pressure match environments

Optometric Assistant

Sage Eyecare- Dr. M. Chiu, Dr. K. Fong, and Associates

September 2023 - October 2024

- Applied quality control procedures, carrying out routine maintenance and troubleshooting as required, preserving the precision and dependability of optical testing apparatus by 60 days above median time
- Utilized specialized software for data interpretation and image analysis, improving the effectiveness and precision of diagnostic procedures used in optometric practice, saving 25 hours of manual interpretation per week
- Engaged with **100+** customers daily, delivering high-quality service and contributing to a positive energy work environment, generating above median employee revenue

Projects

Exo-Skeleton | AutoDesk Inventor, 3D Printing, C++, Python

- Brainstormed, designed and prototyped an elbow-joint exoskeleton using **AutoDesk Inventor**, integrating custom 3D printed parts and aluminum components
- Programmed in C++ using **Arduino**-based control circuits, incorporating sensors, servo motors, and **PID Control Loop** for precise motor control

Skills

3D CAD Design: SolidWorks, Autodesk Inventor, AutoCAD, Blender

Mechanical Assembly: 3D printing, CNC, Prototyping, Assembly

Electrical Systems: PLC Programming, Sensor Integration, Trouble-Shooting, Wiring, Crimping, Soldering

Software: C/C++, Java, Python