

# Chris Burca

Mechatronics Engineering, University of Waterloo

cburca04@gmail.com

[LinkedIn](#)

[Project Portfolio](#)

## Skills

- **Manufacturing & Process Improvement:**
  - Root Cause Analysis (5Y, DMAIC), LEAN (Gemba, Kanban, PDCA, 5S), Engineering Change Management (Form, Fit, Function, Revision Control), New Product Introduction (NPI), DFMEA.
  - ERP: NetSuite, Epicor, Fishbowl, Arena PLM
- **Software & Development:**
  - SolidWorks, Inventor, AutoCAD, Fusion360, KiCAD, MATLAB
  - C++, C, Python, Bash/Shell (ubuntu), Arduino, Bolt SDK, Slack API, GSuite API, Google Cloud, JSON, ROS2 (Jazzy)
  - NVIDIA Jetson Development tools, CUDA, TensorRT, JetPack

## Experience

**Manufacturing Engineer – Miovision Technologies – Kitchener, ON.** Sept – Dec 2025

- Designed & deployed an edge AI OQC vision system on NVIDIA Jetson Xavier NX, owning the full pipeline from data collection and annotation (Label Studio) to cloud training (YOLOv8s) and TensorRT (FP16) edge optimization (~65 FPS, ~13ms latency, >98% accuracy).
- Delivered >\$40k annual labor savings by automating visual screw presence inspection, improving throughput, immediate operator feedback & preventing rework overhead.
- Built an OTA update framework for distributed Andon floor units using SSH, cron, Bash, and custom http services on RPi, eliminating manual firmware updates.
- Developed a manufacturing intelligence dashboard aggregating live and historical production data (Andon events, Pareto analysis, FPY, assembly attainment, quarterly build performance and on-time delivery).

**Industrial Process Engineer (Manufacturing) – Miovision Technologies – Kitchener, ON** Jan – Apr 2025

- Applied LEAN Six Sigma principles (Gemba, Kanban, PDCA, DMAIC) to remove bottlenecks, balance cycle times, and align takt time with production capacity.
- Standardized Root Cause Analysis (5Y), CAPA, and supported NPI / DFMEA activities across production lines.
- Built a real-time Andon fault tracking system using Python, RPi 4B, Slack API, and Google Cloud, reducing incidence reporting latency from hours to near-instant.

**Electrical/Systems Engineer – CSL Silicones – Guelph, ON** May – Aug 2024

- Developed IoT sensor networks (DigiMesh, LoRaWAN, Cellular) and SCADA dashboards using Node-RED and ThingsBoard.
- Integrated industrial sensors and providing real-time tracking via NCD.io and similar IoT hardware

**Manufacturing Engineer – Deep Trekker Inc – Kitchener, ON** Sept – Dec 2023

- Develop and implement manufacturing processes and procedures to enhance productivity, quality, and cost-effectiveness.
- Collaborate with cross-functional teams to design, optimize, and scale manufacturing processes for new product introductions or existing product enhancements.
- Designed and implemented fixtures, tools, and equipment modifications to optimize production capacity.

**Robot Builder – Clearpath Robotics (OTTO Motors) – Kitchener, ON** Jan – Apr 2023

- Assembled robotic systems, calibrated sensors, configured PLCs, MCUs, and Linux-based computers.
- Optimized main and sub-assembly workflows, increasing production efficiency by 30%
- Gained hands-on exposure to Siemens PLCs, ROS, and Linux-based control environments.
- Helped test and standardize test/alignment fixtures for LiDAR & distance sensors and RealSense Cameras.

## Education

**University of Waterloo – BASc Mechatronics Engineering '27**

2022 – 2027