Chris George

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Professional Summary

- Hands-on experience building and validating safety-critical, hardware-integrated systems.
- Experienced in automated testing and performance instrumentation across sensors, firmware, and software.

Education

- **McMaster University** Sept 2020 – Apr 2026
  B.Eng. Mechatronics & Biomedical Engineering (Co-op) — GPA: 3.8/4.0
  - Relevant Coursework: Operating Systems, Embedded Systems, Control Systems, Software Verification

Experience

- **Trimble Applanix** May 2024 – Aug 2025
  Verification & Validation Engineering Intern
  - Designed and maintained system-level test infrastructure for hardware-integrated, safety-critical navigation systems, automating 25+ regression suites.
  - Developed automated NMEA test scripts that reduced manual testing time by ˜90%
  - Executed hardware-in-the-loop (HIL) testing to capture failure signatures.
- **McMaster Centre for Software Certification** May 2023 – Aug 2023
  Research Co-op – Software Safety & Automation
  - Designed requirement-driven test workflows for Simulink models, expanding test coverage by ˜50%.
  - Optimized MATLAB-based test execution and falsification pipelines, reducing validation runtime by ˜55%.
  - Co-developed and open-sourced Hecate, a MATLAB-based safety testing framework used by multiple research teams.

Projects

- **Optical Neural Network for Real-Time Image Segmentation (Capstone)** Sept 2025 - Present
  - Designed and simulated an optical neural network for real-time image segmentation, modeling convolution operations under physical constraints and non-ideal optical effects.
  - Built a Python-based evaluation pipeline to characterize accuracy, latency, and robustness tradeoffs between digital and optical computation.
- **RecycleRight – Smart Waste Sorting System** Jan 2023 - Jun 2023
  - Co-developed a software-hardware system for intelligent waste sorting in public trash and recycling bins.
  - Built a Flutter/Dart application as part of a multidisciplinary team, contributing to UI logic, state management, and real-time user workflows.
  - Placed in the **Top 100 globally out of 1000+ teams** in the Google Developer Student Clubs Solution Challenge 2023.

Technical Skills

- **Languages:** Python, C, C++, Dart, MATLAB
- **Systems:** Linux, embedded systems, concurrency, sensor pipelines, networking fundamentals
- **Testing & Validation:** Automated regression testing, diagnostics, hardware-in-the-loop (HIL), instrumentation, requirement traceability
- **Tools:** Git, VS Code, Simulink/Stateflow, JIRA