

# JOSEPH GARWOOD

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## SUMMARY

Software Developer with a focus on building secure, reliable systems that serve the public interest. Holds a Secret clearance and is drawn to mission-driven work where technology makes a real impact. Thrives in collaborative environments solving complex, real-world problems.

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## SKILLS

**Languages & Frameworks:** PHP, Java, C++, C, Python, Drupal, SQL, Qt, RESTful APIs

**Tools & Platforms:** Linux, GCC, Docker, Git, Jira, QNX SDP 8.0, OpenShift/Kubernetes, Helm, Azure, AWS, Jenkins

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## EXPERIENCE

**Software Developer** - Innovation, Science and Economic Development Canada (ISED) **Sep 2024 - Present**

- Developed and deployed containerized Drupal/PHP applications in OpenShift/Kubernetes environments.
- Created a deployment script to streamline Helm workflows, automating repetitive tasks and enabling consistent configurations.
- Utilized AWS S3 buckets for storing and retrieving production site databases during development.
- Acted as lead developer to replace a legacy commerce/payment system in collaboration with the solutions architect.
- Developed a multi-chatbot integration module to unify support across ISED sites.
- Added per-node role-based access control to improve site security.
- On-boarded new senior developers, guiding them through the stack and resolving blockers.

**Software Architect & Developer** - TribSys Inc. (Capstone Project) **May 2025 - Aug 2025**

- Led a team in rebuilding a legacy Windows-based data acquisition system for Linux using C++/Qt.
- Designed the system architecture and implementation strategy, integrating dual-channel A-D signal acquisition with real-time visualization using QtCharts.
- Acted as team lead and client liaison, managing the GitHub repo, reviewing PRs, and conducting bi-weekly demos and progress reviews.

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## PROJECTS

### RFID Access Control System

Built a Raspberry Pi-based RFID access system using Python and PostgreSQL. Managed users/roles, logged access events, and coordinated multiple RC522 readers on a shared SPI bus via GPIO polling.

### Custom Unix Shell

Developed a C-based shell supporting built-in/external commands, aliasing, history, and process management (fork, execvp, waitpid). Revisited and updated for QNX SDP 8 on Raspberry Pi using posix\_spawn()

### Home Server

Designed and managed a Linux-based homelab environment running Dockerized services, using Portainer for orchestration and automated Bash/crontab scripts for backup workflows. Configured secure remote access via Tailscale and monitored system performance with Netdata.

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## EDUCATION

### Computer Programming

**Sep 2025**

Algonquin College

Graduated with Honours

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## ADDITIONAL INFORMATION

**Security Clearance:** Level II Secret (Government of Canada)