

# Steven Guikal

Waterloo, ON, Canada

✉ [steven@guikal.org](mailto:steven@guikal.org)

🌐 [guikal.org](https://guikal.org)

## Education

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University of Waterloo

Sep. 2022 – present

Candidate for Bachelor of Applied Science in Computer Engineering, Honours

Waterloo, ON

## Experience

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Software Developer

Sep. 2023 – Dec. 2023

**HealthHub Solutions**

- Developed new features, improved APIs, and solved critical customer-facing issues for hospital bedside terminals.
- Lead team ceremonies, contributed to cross-team planning sessions, and provided in-depth code reviews to others.
- Designed and implemented end-to-end operating system testing with QEMU VMs in Gitlab CI to eliminate bugs.
- Researched and documented a plan for CycloneDX Software Bill of Materials generation for all dependencies.
- **Technologies used:** Bash, Gitlab, Python, Linux, QEMU, Systemd

Cybersecurity Research & Development

Jan. 2023 – Apr. 2023

**BlackBerry Limited**

- Developed a centralised fuzzing platform to continuously fuzz products, find security bugs, and report findings.
- Deployed and maintained Kubernetes clusters with Ansible playbooks and automated GitLab CI/CD pipelines.
- Performed security research and shared knowledge across the team through internal meetings and presentations.
- **Technologies used:** Ansible, ASP.NET, C#, EntityFramework, GitLab, JIRA, Linux, Kubernetes

Full Stack Developer, System Administrator

June 2020 – present

**Arthur Murray Ajax Dance Studio**

- Created a website for digitizing and maintaining forms for tracking the learning progress of 268 students.
- Redesigned main marketing website from the ground up, improving functionality, performance, and accessibility.
- Implemented event registration, gift card and trial class purchasing, and an instructor-maintained calendar.
- **Technologies used:** CSS, Django, Golang, HTML, Linux, Python, Stripe

Full Stack Developer, System Administrator

Dec. 2019 – present

**Gables Cottage Resort**

- Developed full cottage rental platform with listing management, online booking, and payment for 9 cottages.
- Designed booking system to handle customizable rates, minimum nights, discounts, and payment plans.
- Monitored services and handled support issues through 350+ bookings involving 2,475+ guests.
- **Technologies used:** CSS, Django, HTML, Linux, Python, Stripe, WireGuard

## Projects

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CO<sub>2</sub> & I<sup>2</sup>C: A Project to Track Emissions

Sep. 2022 – Dec. 2022

**Computer Engineering Course Project**

- Designed and prototyped a product which could record and alert on CO<sub>2</sub> levels with KiCad and breadboards.
- Implemented the I<sup>2</sup>C protocol using bit banging to communicate with an SGP30 CO<sub>2</sub> sensor based on specifications.
- Drafted a formal design document and manuals involving existing research, risk analysis, testing, and validation.
- **Technologies used:** C, I<sup>2</sup>C, KiCad, STM32 Nucleo-F401RE, Oscilloscope

**bubbleroll** – container runtime and management CLI on top of Bubblewrap, a low-level sandbox utility; written in Rust.

**cats.sh** – community around self-hosted services with centralised OAuth 2.0 authorization; written with Flask in Python.

**pastry** – S3-backed pastebin service with HTML and ANSI terminal syntax highlighting; written in Golang.

**sss** – Shamir's secret sharing cryptographic algorithm implementation in Python as a library and client.

**sway-borders** – fork of Sway, a Wayland window manager, with extra graphics features; written in C.

## Achievements

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**CyberPatriot XIV** – 5th place in global cyber defense competition out of 5,250+ teams of 19,000+ students.

2022

**CyberTitan IV & V** – 1st place in Canadian cyber defense competitions out of 130+ teams of 800+ students. 2021 & 2022

**PicoCTF** – 1st in Canada, third internationally in offensive cyber security competition out of 7,750+ teams.

2022