

Steven Guikal

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Education

University of Waterloo

Sep. 2022 – present

Candidate for Bachelor of Applied Science in Computer Engineering, Honours

Waterloo, ON

Projects

CO₂ & I²C: A Project to Track Emissions

Sep. 2022 – Dec. 2022

Computer Engineering Course Project

- Designed and prototyped a product which could record and alert on CO₂ levels with KiCad and breadboards.
- Implemented the I²C protocol using bit banging to communicate with an SGP30 CO₂ sensor based on specifications.
- Drafted a formal design document and manuals involving existing research, risk analysis, testing, and validation.
- **Technologies used:** C, I²C, KiCad, STM32 Nucleo-F401RE, Oscilloscope

bubbloroll – 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.

Experience

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, Kubernetes

Software & QA Engineering

Oct. 2021 – Jan. 2022

Arch Linux

- Contributed to migrating the 75,000+ package Arch User Repository backend from PHP to Python FastAPI.
- Tested new backend with unit and manual testing, and implemented CSRF protection.
- **Technologies used:** GitLab, PHP, Python, FastAPI, Docker

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, Go, HTML, 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, Python, Stripe, WireGuard

Achievements

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