

Spencer Karjala

Creatively-driven software engineer passionate about developing productive tools for complex problem domains.

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skarja.la

Experience

Damon Motorcycles Vancouver, British Columbia

Software Engineer Jan 2022 - Mar 2024
Junior Embedded Software Engineer (Co-op) Sep 2021 - Jan 2022

- Engineered an on-premises Linux server-based CI/CD platform used by all engineering staff to develop and test software, enabling engineering to scale its workforce by more than 300%
- Created containerized build environments using Docker to encapsulate platform dependencies, ensuring identical builds across all environments, greatly improving R&D iteration time
- Designed CI/CD build pipelines using Python, Bash, and PowerShell scripting over TeamCity to automate build formats like Yocto, CMake, Eclipse IDE, Android, iOS, and .NET
- Created a C++ unit testing framework on top of GoogleTest to maintain a high level of confidence in the stability and functionality of legacy code
- Implemented firmware/software versioning processes, artifact storage, and deployment processes, enabling simple and secure firmware deployment for team members at any company office or demo location
- Thrived in a fast-paced startup environment, demonstrating versatility and the ability to handle multiple new roles and responsibilities

Teradici Burnaby, British Columbia

Associate Web Developer (Co-op) Jan 2020 - Aug 2020

- Implemented and shipped user-facing frontend features for managing remote workstations using React JS
- Created, maintained, and tested backend Express.js REST API endpoints used by team members and advanced users
- Built a standard Python-based wrapper around key REST API features for manual testing during development, increasing team development speed
- Participated in Agile/Scrum processes to guide development efforts, identify and communicate issues, and ensure regular delivery of features & bugfixes

Notable Projects

Grid Navigator UE5 Plugin [GitHub](#)

- Designed an Unreal Engine plugin in C++ that implements grid-aligned pathfinding through engine features, enabling users to swap to stylistic pathing without custom code

Fourier Filter VST [GitHub](#)

- Created a real-time audio effect plugin for music production software in C++ that manipulates spectral data for interesting sound design with users in local music communities
- Demo available: [Fourier Filter | skarja.la](https://skarja.la)

Technical Skills

Languages

C++, C, CMake, Bash, Python, MATLAB/Octave, JavaScript, Rust, GLSL, HLSL, CUDA

Technologies & Practices

Linux, Docker, Docker-Compose, AWS S3, ECR, IAM, Yocto, WebGL, multithreading, networking, TCP/IP, automation

Tools

Git, GitHub, GitLab, Bitbucket, Jira, Confluence, TeamCity, VS Code, Visual Studio, Rider

Projects

Personal Website

A static site made with HTML/CSS + JavaScript for WebGL shaders.
Hosted on GitHub Pages: skarja.la

CPU Raytracer

A CPU-bound raytracing engine with some live rendering support.
Demo: [CPU Raytracer | skarja.la](https://skarja.la)

Education

Simon Fraser University

Bachelor of Science in Engineering, Computer Engineering concentration

Interests

Music, graphics programming, signal processing, game development, sound design, live performance