

Spencer Karjala

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

spencerkarjala@gmail.com
604-842-3870
Coquitlam, British Columbia
github.com/spencerkarjala
skarja.la

Experience

Damon Motorcycles

Vancouver, British Columbia

Software Engineer

Jan 2022 - Mar 2024

Junior Embedded Software Engineer (Co-op)

Sep 2021 - Jan 2022

- Designed, built, and maintained an on-premises TeamCity-based CI/CD platform used by ~30 engineers to build, analyze, and test all company software and firmware in C++, C, C#, Python, and more
- Proposed and created CI/CD build pipelines with a unified interface for each target architecture using tools like TeamCity, Bash, PowerShell, Python, Yocto, AWS S3, AWS ECR, and many more
- Led company-wide adoption of modern build practices like containerization (Docker or Podman) and automated testing, improving reliability and simplifying integration with QA systems
- 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
- Provided leadership for engineering team members on using and creating automation tools to accelerate development

Teradici

Burnaby, British Columbia

Associate Web Developer (Co-op)

Jan 2020 - Aug 2020

- Designed, 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
- 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 and created an Unreal Engine 5.3 plugin in C++ that implements grid-aligned pathfinding through engine-supplied interfaces, enabling users to swap to custom pathing without custom code
- Includes in-world client-side cursor for previewing travel paths with customizable visuals

Fourier Filter VST

[GitHub](#) 

- Reverse-engineered and implemented a real-time audio effect based on a Max MSP device in C++ for personal use outside the Max ecosystem
- Created custom short-time Fourier transform buffer to enable real-time asynchronous processing of audio buffer
- Demo available: [Fourier Filter | 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, parallel programming, 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](#)

Education

Simon Fraser University

Bachelor of Science in Engineering,
Computer Engineering concentration

Interests

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