

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

- 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
- Acted as resident expert in Docker and C++ software testing, writing technical documentation and hosting lunch-and-learn meetings
- Thrived in a fast-paced startup environment, demonstrating versatility and the ability to handle multiple new roles and responsibilities

Junior Embedded Software Engineer (Co-op)

Sep 2021 - Jan 2022

- Implemented features for embedded software in C++ on STM32 architecture, contributing to Agile/Scrum process by executing design specifications
- Participated in design meetings and took ownership of future CI/CD systems, establishing Linux server infrastructure and creating base automation tools used to enhance early-stage R&D iteration speed
- Established a prototype over-the-air (OTA) firmware deployment system using local Linux servers, AWS infrastructure, and Raspberry Pi devices to demonstrate value of CI/CD systems to upper management
- Brought on as permanent employee and promoted at end of co-op term

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

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

Grid Navigator UE5 Plugin

An Unreal Engine 5 C++ plugin used for grid-aligned pathfinding

Fourier Filter VST

An audio effect plugin for music production software in C++ that manipulates spectral data in real time. Demo: [Fourier Filter | skarja.la](https://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
01/2018 - 12/2022

Interests

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