

Derrick Lee

CONTACT INFORMATION

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EDUCATION

B.S., Computer Science (Math) Santa Clara University **June 2020** (expected)
Relevant Coursework:

- Object Oriented Programming (C++)
- Data Structures (C++)
- Operating Systems (C/Rust)
- Theory of Automata and Formal Languages (in progress)

EXPERIENCE

Open Source Developer **January 2018 - Present**

- Contributions to **serenity**, a **Rust** library for interacting with the chat and VoIP platform Discord. Fixed incomplete features, improved and clarified code examples and documentation.
- Implemented bug fixes and security fixes to open source chat bot LuckyBot.

RELEVANT SKILLS

Languages
Rust, C, C++, JavaScript, TypeScript, Python, HTML5, CSS, ARM Assembly, SQL, Bash

Related Technologies
Git, Node.js, GraphQL, PostgreSQL, React, Koa, Apollo, Express, Next.js, Vue.js

PROJECTS

sushii-bot (14,000+ lines of code) **December 2017 – Present**

- Chat bot for Discord with a ranking system, activity tracker, moderation tools and more with **over 64,000 total users**.
- Written in **Rust** with a **PostgreSQL** database, **diesel-rs**, and connection pooling with **r2d2-diesel**.
- Paired a website with user leaderboards and statistics made with **Next.js**, **React**, **Koa**, **Apollo** server and client for **GraphQL** endpoints, and **Join Monster** for batch data fetching.

Operating System Simulations (5,000+ lines of code) **April 2018 – June 2018**

- Runs sequential and random disk reads with **C**, determines time differences and possible causes based on both physical and OS aspects. Programs and set up executed with **Bash** scripts.
- Multi threaded simulation written in **Rust** of different memory page replacement algorithms with given page requests and a range of memory sizes. Data visualized with plots made in **R**.
- Benchmarks in **Rust** to determine the overhead of synchronization primitives (Mutex) and lock contention.

vlive-rs (1,000+ lines of code) **April 2018 – May 2018**

- **Rust** library for livestreaming platform VLive's API to fetch channel and video data.
- Implemented on the asynchronous **Hyper** client with Futures as well as **Reqwest** for a synchronous API.

mp3-fft **July 2017**

- Web application that takes mp3 files and recommends 100+ headphones based on price, form factor, and music sound signature (bass-heavy, neutral, mid-forward, v-shaped).
- Uses the Fourier Transform and Welch's method to classify sound signature.
- Written in **Python** with a **Flask** microframework back-end along with **Vue.js** for front-end.