

Hussain Abdi

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EDUCATION

University of Waterloo

May 2023

Bachelor's of Software Engineering (with Distinction)

Relevant courses: CS 486 Intro to **Artificial Intelligence**, SE 350 **Operating Systems**, CS 343 Concurrent and **Parallel Programming**, SE 464 **Software Design** and Architecture, ECE 358 **Computer Networks**

EXPERIENCE

Self-Employed

Jul 2024 – Present

- Built and operated a multi-channel music venture that drove ~10k streams, produced 20k+ content views, and logged 175+ hours of live sound/lighting across venues + festivals
- Developed production-grade web applications (**Next.js, TypeScript, Tailwind, Python**) alongside self-directed projects

Full Stack Developer [🔗](#)

Apr 2024 – Jul 2024

FanPad (startup)

Fan engagement platform for independent musicians

- Built a public-facing **Angular, C#, and PostgreSQL** Touring Page feature (show dates + ticket links) to support onboarding an independent artist with a **4.8M-follower fanbase** by delivering **end-to-end** UI → API → database changes

Software Engineer [🔗](#)

Jan 2022 – Aug 2022

Ross Video

- Designed & developed a **C++** and **MongoDB** data streaming system to **save \$50,000+ per dev tester**
- Validated client's server IP settings using **Go** and **Linux's** NM daemon to **prevent 100+ broken client machines**
- Worked with softGear team's software-based signal processing platform by utilizing microservices in **Docker**

Software Engineer [🔗](#)

May 2021 – Aug 2021

Audioworks

- Built a **React** & OpenTok cross-platform video collaboration MVP; now deployed, enabling musical collaboration
- Analyzed company roadmap to avert **React Native** & **JUCE** integration issues, **saving 6 months of engineering effort**
- Published Audioworks' native **iOS** app to **100+ users**, facilitating efficient OS-specific development

PROJECTS

Habit Tracker - Full-Stack PWA (Next.js, React, TypeScript, Tailwind, Google Sheets API, Vercel) [🔗](#)

- Built **Next.js** PWA with config-driven architecture **enabling zero-code habit additions** via single object change
- Optimized calendar to **O(1) lookups** using memoized Sets, eliminating O(n) scans across 500+ rendered cells
- Designed dual persistence with **Google Sheets API** and localStorage fallback, **achieving zero database costs**
- Implemented **iOS haptic feedback** via undocumented WebKit workaround, bypassing unsupported Vibration API
- Engineered custom bottom sheet with velocity-based gestures using exponential moving average for **native UX**

TuneTrove: Spotify Music Insights [🔗](#)

- Deployed **RESTful** web app in **JavaScript**, using **Next.js, Node.js, & Express.js** to visualize personalized music taste
- Implemented **OAuth** via **Spotify Web API** to retrieve top artists & tracks and create custom playlists around this data
- Designed a seamless and polished **React** UX/UI using **Styled Components**, styled to match Spotify's theme

Software Engineering Capstone Database [🔗](#)

- Deployed static **JavaScript** website using **Gatsby**, granting students a unified platform with complete project details
- Implemented search & browsing of projects using FlexSearch, resulting in significantly improved usability
- Architected pipeline for faculty to update projects via **Git** commits, streamlining a previously tedious process

Delay & Chorus/Flanger Audio Plugins [🔗](#)

- Made audio plugins in **C++** with circular buffer and approx. algorithms, resulting in a smooth real-time audio stream

SKILLS

Languages: HTML, CSS, JavaScript, TypeScript, Python, C#, C++, Go, SQL

Tools & Technologies: React.js, Angular, Node.js, Next.js, Express.js, Flask, PostgreSQL, Git, Linux, Docker, GCP