

Gaelan McMillan

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Work Experience

Software Content Developer

Victoria, BC

PG Music Limited

01/2015 - 11/2020

- Edited WAV Audio and created musical transcriptions with careful attention to detail for integration into a mature software product
- Successfully met deadlines to release software content updates over **5 yearly release cycles**
- **Showcased software** on behalf of the company at the National Association of Music Merchants trade show in Anaheim, California in 2017

Composer and Musician

North America and Europe

Self-Employed

01/2013 - Present

- **Communicating with people of varying technical backgrounds** to meet the needs of musical projects
- Performing 500+ shows as a bassist across the United States, Canada, Iceland and Denmark for 1000+ person audiences
- **Collaborating remotely and in person with teams of up to 10+ artists** to create polished creative products
- Adapting to changing requirements and priorities of gigs as a member of a touring band

Software Projects

Daily (AI-Enhanced Journaling Web App)

[Devpost Link](#)

Web App — Javascript, Python, MongoDB, GraphQL, Natural Language Processing

05/2022 - Present

- Leveraging **Co:here's Generative Language Model** to summarize journal entries to key events and themes
- Creating a responsive front-end with **React.js** and **Chakra UI**
- Collaborating with UI/UX team to take their designs from a **Figma prototype to working implementation**
- Fetch and store user data in a **MongoDB** server via **Apollo** and **GraphQL**

Dub Dragon (Graph-based Musical Sequencer)

[Interactive Prototype](#)

Graph-based Musical Sequencer — JavaScript and C++

05/2022 - Present

- Creating a rapid web prototype with **P5.js** to gauge the feasibility of the project
- Designing and analyzing algorithms to ensure reliability in the soft-real time domain of digital audio
- Unit testing to enable an agile debugging process when iterating on the application
- Employing the **MVC Architecture** to create a responsive, data persistent **VST plugin** with **Juce**

Real-Time Audio Visualizer

[Demo Video](#)

Native Application — Rust

01/2023

- Writing a performant, **multi-threaded**, **memory-safe** native application using the Rust programming language
- Applying the **Fast Fourier Transform** algorithm to an **audio stream** to generate **real-time graphics** at **60+** frames per second
- Utilising a **static Ring Buffer** to share data between the audio and graphics threads.

More Generic (Static Blog Site)

[Website Link](#)

A blog about Generic Programming and other technical topics — JavaScript, HTML and CSS

11/2022

- Creating static blog posts with **thorough documentation** and dynamic, illustrated code walkthroughs using React.js and MDX
- Configured a Continuous Integration pipeline using **GitHub Actions**, enabling a **one step deployment process**
- Designing custom, responsive layouts with **Sass** and **Bootstrap**

Volunteer Experience

Cpp North 2022

Toronto, ON

Conference Volunteer

07/2022

- Accommodated **200+ conference attendees** in an equitable and inclusive manner
- Presented a **lightning talk** about the intersection of music composition and computer science

TMU Algorithms and Coding Club

Toronto, ON

Member, Vice President since 06/22

09/2021 - Present

- Coordinating an **8+ member executive team** in the planning of budgets and events for the academic year
- Organizing and hosting events for **50+ attendees**

Education

Bachelors of Science, Computer Science

Toronto, ON

Toronto Metropolitan University

09/2020 - 05/2025

- CGPA 3.74/4.33

Technical Skills

Programming Languages

C++, Rust, Python, JavaScript, HTML, CSS, SQL, C, C#, Java, Common Lisp, APL

Development Tools

Git, MySQL, React, Next, CLion, Bootstrap, Sass, JUCE, SDL2, Unity, Processing, NumPy, LaTeX