Gaelan McMillan

📞 +1 647 858 2468 | ✉ gmcmillan@ryerson.ca | ⌨ gaelanmcmillan | in gaelan-mcmillan | 📍 Toronto, ON, Canada

Education

Bachelors of Science, Computer Science   *Toronto, ON*
Toronto Metropolitan University   09/2020 - 05/2025
- Vice President of the Algorithms and Coding Club; ICPC Competitor

Work Experience

Software Content Developer   *Victoria, BC*
PG Music Limited   10/2015 - 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

More Generic (Static Blog Site)   *Link*
A blog about Generic Programming and other technical topics   04/2022
- Authoring **generic, easy to use** library code in C++ to **efficiently solve** classes of programming problems
- 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**
- Created a custom, responsive design with **Sass** and **Bootstrap**

Dub Dragon (Graph-based Musical Sequencer)   *Web Demo*
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**

Wavey (Ear-Training Bot)   *Github Repository*
Musical Discord Bot for RUHacks, Python   04/2022
- Creating a **musical ear-training game** using **FFmpeg** and voice channels, including recording and labeling 70+ chords
- Coding and managing the deployment of Discord Bot in under 24 hours using Python and **Nextcord**

Volunteer Experience

Cpp North 2022   *Toronto, ON*
Conference Volunteer   07/2022
- Accommodated **200+ conference attendees** in an equitable and inclusive manner
- Learned techniques on writing **reliable, reusable and optimized** generic algorithms in modern C++ from Patrice Roy's workshop on Generic Programming
- 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
- Competing on behalf of the TMU to **solve challenging algorithmic problems** in the International Collegiate Programming Contest
- Problem solving and writing **easy to understand** solutions and editorials to share with club members

Technical Skills

Programming Languages	C++, Python, JavaScript, TypeScript, C#, Java, HTML, CSS, Lisp, APL
Development Tools	Git, CLion, React, Next, Bootstrap, Sass, JUCE, SDL2, Unity, Processing, NumPy, LateX