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Toronto, ON

## **ABOUT ME**

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I'm a web developer with a research-driven mindset and a sharp eye for structure, clarity, and user experience. With a PhD in Music Theory and a background in teaching, I bring analytical precision, strong communication skills, and a talent for making complexity usable—whether in code, content, or interface design.

I build full-stack applications using JavaScript, React, Ruby on Rails, Python, and SQL, with a focus on clean architecture and thoughtful design. I thrive in collaborative environments where attention to detail, clear documentation, and user-centered thinking drive development. My goal is always to create tools that not only work—but that teach, scale, and make knowledge easier to access.

## **SKILLS**

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### **Languages & Frameworks**

Node.js | JavaScript | Ruby | SQL | Python | TypeScript | Express | Rails | React | Django | CSS

### **Tools & Technologies**

Git | GitHub | Visual Studio Code | Tailwind | REST APIs | Mocha | Chai | RSpec | Cypress

### **Research & Analytical Tools**

Microsoft 365 | Data Organization | Academic Research

### **Teaching & Communication**

Curriculum Development | Lecturing | Public Speaking | Technical Writing

### **Soft Skills**

Adaptability | Problem Solving | Critical Thinking | Collaboration

### **Languages**

English (Bilingual) | Spanish (Bilingual) | German (Fluent) | French (Conversational)

## **EDUCATION**

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**University of Toronto** Sep. 2019–June 2025

Doctor of Philosophy, Music Theory

**Lighthouse Labs** Sep. 2024–Dec. 2024

Diploma: Web Development

**University of Toronto** Sep. 2016–June 2018

Master of Arts, Music Theory

**Concordia University** Sep. 2012–June 2016

Bachelor of Fine Arts, Music Composition

## **PROFESSIONAL EXPERIENCE**

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**University of Toronto** Toronto, ON

Full stack Web Developer Jan. 2026–present

- Designing and creating database for “Sonata form in European Concert Music (1815–1914).”
- Developing a web application with a React frontend, integrated with a CMS-backed database to manage dynamic content efficiently.

- Integrating a custom API to fetch and display structured content efficiently.

## University of Toronto

Music Theory Sessional Lecturer

Jan.–Apr. 2026

- Simplified complex concepts for undergraduates, showcasing skills in breaking down technical problems.
- Led interactive lectures, fostering collaboration and critical thinking.
- Managed teaching assistants, ensuring consistency and quality.

## University of Toronto

Full stack Web Developer

Toronto, ON

Feb.–Sep. 2025

- Designing and creating database for “European Refugee Musicians in Canada” online biographical dictionary.
- Developing a web application with a React frontend, integrated with a CMS-backed database to manage dynamic content efficiently.
- Integrating a custom API to fetch and display structured content efficiently.

## University of Toronto

Music Theory Course Instructor

Jan.–May 2023

- Simplified complex concepts for undergraduates, showcasing skills in breaking down technical problems.
- Led interactive lectures, fostering collaboration and critical thinking.
- Managed teaching assistants, ensuring consistency and quality.

## University of Toronto

Research Trainee

Mar. 2023–Jul. 2024

- Conducted in-depth research on music theory topics, and synthesized data for academic publication.
- Drafted and edited materials, paying attention to detail and clear documentation.

## University of Toronto

Research Assistant

Jan. 2021–Mar. 2023

- Created and managed large datasets to support faculty research projects.
- Refined analytical methodologies through collaboration, fostering a problem-solving environment.

## University Settlement Music & Arts School

Faculty Member and Theory Teacher

Toronto, ON

Sep. 2018–Aug. 2021

- Tailored lessons to diverse skill levels, emphasizing adaptability to student needs.
- Assessed student progress and implemented targeted instructional strategies, achieving high exam pass rates.
- Used creative teaching methods to maintain student engagement and foster a collaborative learning environment.

## HIGHLIGHTED PROJECTS

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### Harmonic Spiral Visualizer

Nov.–Dec. 2025

Scope: an interactive logarithmic spiral for visualizing musical ratios and frequency relationships in continuous space.

Tools: Node.js, React, JavaScript, SVG

Description:

- Designed batch input and keyboard-driven interactions for rapid exploration.
- Used SVG to create geometry and manipulable canvas.
- Created custom hooks to manage state of multiple features and functions.

**Ratio Lattice Visualizer**

Sep.–Nov. 2025

Scope: an interactive 3D canvas representing musical pitch structures organized by prime-factor relationships.

Tools: Node.js, React, JavaScript, SVG, Three.js

Description:

- Implemented multiple 3D lattice modes (cubic, radial, expanded) with real-time controls for scaling, rotation, and layout.
- Built custom scene management and geometry utilities to support dynamic updates and navigation between local and global lattices.
- Created custom hooks to manage state of multiple features and functions.

**Harry Somers at 100 Symposium Website**

Aug. 2025

Scope: a static conference website.

Tools: Node.js, 11ty static site generator, Tailwind CSS, Netlify forms and webhooks

Description:

- A simple event website using 11ty to generate html layouts and pages.
- Responsive design with Tailwind CSS.
- Includes registration with form submission and notification through Netlify servers.

**ERMiC Online Biographical Dictionary**

Feb.–Sep. 2025

Scope: a static content web application that allows users to perform custom searches and browse the dictionary's contents.

Tools: Node.js, React, JavaScript, Contentful CMS, Tailwind CSS, Jest

Description:

- Designed a CMS-backed database and built a React frontend to fetch data.
- Trained a team of editors to populate CMS database.
- Implemented a search bar with sophisticated search-filtering and navigation features.
- Created custom hooks to manage data, navigation, and rendering.
- Implemented comprehensive unit and integration testing with Jest framework.

**Transformational Tonnetz**

May 2025

Scope: a single-page web tool for visualizing and modelling musical progressions.

Tools: Node.js, React, Vite, TypeScript

Description:

- Used SVG for creating geometric tiling that user interacts with.
- Created multiple custom hooks to allow for different visualization options, dynamic zoom controls, and alternative usage mode.

**Set Calculator**

Mar.–Apr. 2025

Scope: a calculator for analyzing just-intonation pitch sets in different spaces.

Tools: Node.js, React, Python, JavaScript, Django

Description:

- Used Python and Django framework for calculations and computations in the backend.
- Used React and JavaScript for UI, state management, and data fetching from backend.

**Express TinyApp v2.0**

Jan. 2025

Scope: a multi-page web application for managing and sharing shortened URLs, emphasizing user permissions and database-driven data handling.

Tools: Node.js, Express.js, EJS, PostgreSQL, JavaScript, HTML, CSS, Chai

Description:

- Built RESTful routes for secure authentication, URL creation, and management.
- Designed dynamic, responsive EJS templates for a user-friendly experience.
- Configured PostgreSQL for reliable data storage and integrity.