

Anthony Hana

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EDUCATION

McMaster University

Hamilton, ON

Mathematics and Computer Science

Expected 2027

- **Relevant Coursework:** Data Structures & Algorithms, Natural Language Processing, Numerical Linear Algebra, Mathematical Modeling, Databases, Computer Architecture
- **Extra Curriculars:** McMaster Start Coding, MGDC (McMaster Game Dev Club), Volleyball / Soccer Intramurals

EXPERIENCE

Software Architect

Incoming

McMaster Start Coding

Hamilton, ON

- Set to develop and maintain the **McMaster Start Coding** web platform; a layered design that pairs a **React** front-end with a **Haskell/Python** services tier and **PostgreSQL** data layer, improving load time and efficiency
- Will develop and maintain the **Stabl.Rocks** Elm IDE, a server-side compile pipeline and real-time collaboration modules that streamline functional-programming workshops for **500⁺** students per term
- Expected to organize and deliver hands-on coding workshops and develop supplementary internal tools deployment dashboards and automated assessment pipelines to enhance program reach and operational efficiency

Coding Workshop Mentor

Jan 2025 - Present

McMaster Start Coding

Hamilton, ON

- Introduced students to functional programming using **Elm** and **Haskell** during McMaster's Reading Week outreach, emphasizing pure functions, immutability, and declarative syntax
- Utilized the **Stabl.Rocks** environment to teach program structure, function composition, and user-defined types, helping students build foundational understanding of functional logic and visual computation
- Guided students in creating interactive animations by mapping coordinates and geometric shapes onto Cartesian planes, reinforcing mathematical reasoning through code

PROJECTS

MacPad: macOS Native Text-Editor 🍎 | *Swift, SwiftUI, AppKit, Swift Concurrency, UniformTypeIdentifiers*

- Developed high-throughput asynchronous file I/O for plain-text and RTF documents, delivering near-instantaneous (<100ms) load/save times and a lightweight, freeze-free editing experience
- Features dynamic theming, atomic save routines, unsaved-change indicators, and state-restoration to ensure seamless native UX and robust **data-loss** prevention
- Engineered multi-encoding text handling with automatic format detection and lossless conversion across **18⁺** encodings (UTF-8, ASCII, etc.) with guaranteed document integrity

Website Portfolio: anthonyhana.com 🍎 | *React, Tailwind CSS, Javascript, Node.js, Vite*

- Developed a high-performance portfolio using **React** and **Tailwind CSS**, featuring responsive design, optimized builds (via **Vite**), and seamless theming for cross-device consistency
- Leveraged custom React hooks and **GSAP** to implement scroll-based animations, smooth parallax effects, and dynamic state updates, enhancing interactivity while maintaining clean, reusable code
- Configured a **JSON**-driven data layer; deployed on GitHub Pages with a custom domain

Amazon Review Classifier: Label Classification for Customer Feedback 🍎 | *Python, NLTK, Scikit-learn, Pandas*

- Built a label classifier for Amazon reviews across Product Quality, Shipping, Price, Customer Service, and more
- Utilized a 4,000+ review Kaggle dataset with manual annotations and applied NLP preprocessing (**tokenization**, **stemming**, **TF-IDF**) to generate model-ready features

Real-Time Transit Visualization Platform 🍎 | *Python, JavaScript, HTML, CSS, Flask, GTFS Protocol Buffers*

- Built a **real-time** transit visualization app, parsing GTFS RT protocol buffers to display bus locations, routes, and stops
- Designed a modular **JS** frontend (map, route, bus, stop) and Python backend to process static and real-time transit data from Hamilton's public transit system, with **RESTful API** to allow **60s** update intervals

TECHNICAL SKILLS

Programming: Swift, Java, Python, C, JavaScript, R, SQL, Elm, C#, Haskell, TypeScript

Technologies: PyTorch, Node, React, Flask, .NET, Angular, MATLAB, Pandas, Numpy, Pillow, AppKit, RESTful API

Tools and Platforms: Jupyter, Jira, RStudio, Overleaf, DataGrip, SAS OnDemand, Git/Github, Docker, Xcode, Figma