

Henry Nguyen

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Education

University of Waterloo - Bachelor of Computer Science

Received Carl A. Pollock scholarship, President's Scholarship

Waterloo, Canada

2021 - 2026

Experiences

Transify

Software Engineer (Contract Part-Time)

Toronto

May 2023 - Now

- Optimizing regional train ↔ bus connections for City of Barrie by automatic schedule generation.
- Contributed open-source performance fixes for the Graphhopper routing project using Java.
- Built a real-time vehicle location map and early/late dashboard for Brampton Transit with Python and React.
- Setup Kubernetes deployment for staging and production environments.

Super.com

Software Engineer Intern

Toronto

Jan 2023 - May 2023

- Migrated legacy credits/coupons system into a unified credits experience across travel and cash verticals. Worked with PostgreSQL and Talon.One rewards engine.
- Wrote E2E tests using webdriver.io and Jest to support credits migration.
- Implemented "missions" to increase cross-sell across travel, shop, and cash verticals with React.JS, FastAPI.

Dropbase

Software Engineer (Contract Part-Time)

Toronto

Sep. 2022 - Now

- Enabled faster, bigger Excel uploads by building high performance Excel parser in Rust.

Software Engineer - Intern

May 2022 - Aug. 2022

- Built schema inference for incoming CSVs using Pandas, enabling customers to load datasets with thousands of columns.
- Implemented webhook notifications feature for 10K+ events using FastAPI in Python.
- Cut deployment time by 50% by caching Rust builds on Github Actions.
- Contributed to Pandera (1.7K Github stars + 23K daily downloads) (**sped up type coercion 2x**), #914 (more ways to report unique errors), jqnatividad/belt#1 (datetime parse bug, used by QSV crate).

Projects (more on [Github](#) ↗)

Interactive Transit Travel-Time Map (<https://map.henryn.ca>)

Rust (for pathfinding), MapboxGL JS, React

- Created interactive map of how far you can go by public transit using GTFS schedules.
- Reached front-page of HackerNews, reposted on Twitter with 30,000 unique visitors in first week, and 130+ Github stars

Full-Text Search Engine 🔁

C++ for core engine, Python for tests/external API, and Javascript for UI

- Indexed the entire Wikibooks dataset, allowing instantaneous text search with inverted indexes and sharding.

ACID Key-value Database 🔁

Rust

- Created a JSON database that supports concurrent ACID transactions and nested JSON objects.
- Ensured serializability across multiple threads by continuous randomized testing.

3D Renderer from Scratch 🔁

C++, WebAssembly, Javascript, and HTML Canvas

- Created a software 3D renderer from scratch using C++ without OpenGL or native graphics APIs.

Awards

2020 **Bronze Medalist (82nd place)**, International Chemistry Olympiad

Online