

Henry Nguyen

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Education

University of Waterloo - 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.
- Contributing open-source fixes for the Graphhopper routing project.

Super.com

Software Engineer Intern

Toronto

Jan 2023 - May 2023

- Led design and implementation of gamified "missions" to increase user retention and cross-sell.
- Migrated legacy credits/coupons system into a unified credits experience across travel and cash verticals.
- Introduced workflows and tools to streamline local development and testing of microservices, reducing manual testing load by 90%.

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

- Re-architected Python backend **to support on-premise customer databases.**
- 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.

Open Source Contributor

May 2022 - Aug. 2022

- Merged features in Pandera (1.7K Github stars + 23K daily downloads) (**sped up type coercion 2x**), #914 (more ways to report unique errors), jgnatividad/belt#1 (datetime parse bug, used by QSV crate) .
- Reported bugs in unionai-oss/pandera#882, #902, #906, and pandas-dev/pandas#48034, and duckdb/duckdb#4455

Projects (more on my [Github](#) ↗)

Public Transit Routing + Interactive Isochrone Map 🗺

Rust (for pathfinding), MapboxGL JS, React

- Created interactive map of how far you can go by public transit (demo ) using GTFS schedules.

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
- 2019 **First Place (out of entire Canada)**, Canadian Chemistry Olympiad

Online
Canada