

# Tristan Hume

Student Developer - University of Waterloo Computer Science

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## Work

**UWaterloo HCI Lab** Undergraduate Researcher, Winter 2016-present

- Designed and developed a hands-free mouse alternative that combines the speed of eye tracking and the accuracy of head tracking using [MAGIC](#).
- Developed high accuracy low-latency audio recognition algorithms for using various mouth noises (e.g lip popping) to perform actions like clicking.
- Combined knowledge from reading hundreds of academic papers on HCI techniques and eye tracking computer vision algorithms to develop an enjoyable to use system with speed and accuracy similar to a trackpad.

**Shopify (Shipping Team)** Developer Intern, Summer 2015

- Helped develop [Shopify Shipping](#). I maintained [ActiveShipping](#), fixed production disruptions, and implemented package tracking.
- Owned the front-end and back-end development of the [unified fulfillment and label purchase form](#) now used by thousands of merchants every day.
- Held the responsibilities and compensation of a full-time developer.
- Earned the best possible score on my performance review.

**Shopify (Stack Team)** Developer Intern, Summer 2014  
Containerized deployment tools with Go, Docker and Chef.

**Shopify (Apps Team)** Developer Intern, Summer 2013  
Worked on Ruby on Rails projects and a new parser for [Liquid](#).

**The Eclipse Foundation** High-school Co-op Developer, Fall 2012  
Implemented features and fixed bugs in the Eclipse IDE.

**Halogen Software** Student Software Developer, Summer 2012  
Investigated web accessibility and automated a data entry process.

## Selected Projects

### Rate With Science

I extracted the [link graph](#) of Wikipedia into a 600MB binary file with a custom format designed for fast path finding in memory. I've rewritten the path-finding server in Rust, Nim and D for fun.

### StashLine

An iOS app for long term personal finance simulation with 7000 users. Has a custom built UI that instantly updates a visualization of your entire life's financial future while you manipulate inputs.

### The Open Turing Compiler

An LLVM based compiler for [Turing](#) as well as a Qt-based IDE and a simple drawing library.

### PolyType

I built a working keyboard I designed in AutoCAD and put together with laser cut acrylic layers, Cherry MX switches, lots of soldering, and an ARM microcontroller.

### IndexView

An exploration tool for long term financial market data written in JavaScript with a custom canvas graph widget allowing for fluid zooming and navigation of hundreds of years of data with live stats.

## About

I'm a highly passionate developer who has spent the last 10 years building dozens of projects using a large variety of languages and technologies. I'm also building a solid academic groundwork through my studies as a CS student, research work, and spending lots of my spare time reading.

## Open Source

I've created dozens of open source projects with over 20,000 combined users (300,000 if you count web apps), all of which you can find [on my Github page](#).

I was also the [first contributor](#) and [long time](#) top contributor to [Spacemacs](#), a now quite popular configuration package for Emacs.

## Languages Used

My strongest languages are Ruby, C++ and Javascript. I've written over 10,000 lines of code in each of these languages.

I also enjoy learning new languages, I've done projects in 22 different languages including Haskell, Rust, D, Go, and Scala.

