

# Richard Wu

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## SKILLS

### PROGRAMMING

Languages:

Ruby • C++ • C • SQL • Python • Bash •  
Java • JavaScript • HTML/CSS

Frameworks and technologies:

Rails • Redis • GNU/Linux • Node.js •  
NGINX • AWS

Tools:

Git • Vim • tmux

## EDUCATION

### UNIVERSITY OF WATERLOO

BCS IN HONOURS COMPUTER  
SCIENCE

Expected May 2020 | Waterloo, ON  
mGPA: 93%

- President's Scholarship of Distinction
- Software Engineering Entrance Scholarship

## COURSEWORK

### UNDERGRADUATE

Programming Principles in C  
Data Abstraction/Implementation in C++

### ONLINE

Data Structures and Algorithms  
(Coursera)

Machine Learning (Coursera)

## DISTINCTIONS

- Top 125/6000 - Canadian Open Mathematics Challenge
- 6th/6000 - Canadian Senior Mathematics Contest
- Top 20 Finalist - Ontario Chemistry Olympiad

## EXPERIENCE

### **shopify** | DEVELOPER INTERN

May 2016 - August 2016 | Ottawa, ON

Backend work on the internal shipping provider API in Ruby. Full-stack work on the core Shopify platform in Rails.

- Introduced a formalized ETL framework with smaller, testable modules for polling tracking data from shipping carriers, improving maintainability
- Implemented USPS tracking information polling within the ETL framework using parallelized background jobs, decreasing upper bound of real-time tracking updates from a few hours to 15 minutes
- Integrated shipment options into our shipping microservice API with abstraction for multiple providers using a Log4j-like design pattern, enabling 200k+ merchants to purchase add-ons for their shipping labels
- Identified and eliminated a production bug involving stale cache keys that caused incorrect shipping rates to display

## PROJECTS

### STUDBUDS.COM | FOUNDER + LEAD DEVELOPER

June 2015 - present

University of Waterloo peer tutoring platform with 160+ registered students. A Velocity company. Built with Rails, Redis and Sidekiq.

- Implemented a background payment flow and with the Stripe API, enabling automatic P2P payment authorization, captures, and refunds
- Integrated live chat and notifications over WebSockets that hook into user-triggered events, such as lesson creation and cancellation
- Provisioned cron jobs to send emails for unread messages and updates
- Utilized AJAX for dynamic client-side rendering to simulate a single-page dashboard with proper JavaScript memory and reachability management
- Leveraged CloudFront and S3 for static asset caching and distribution

### NEWS\_SCRAPER | RUBY GEM

August 2016 - present

ETL web scraper that aggregates news articles. Written in Ruby.

- Abstracted the scraping process into an ETL framework that only extracts relevant fields from articles, such as title and content, for a given news query
- Implemented a configuration-first architecture that employs YAML-specified grep patterns to scrape news articles from multiple sources based on host domain
- Devised a command-line interface a user can use to add scrape patterns for additional host domains, simplifying the process of expanding the scraper to other news sites

### ANONYMEYES.COM | WINNER AT HACK THE NORTH 2015

September 2015

Public video feed where users can anonymously post videos that are instantaneously uploaded and backed up. Built with Rails and AngularJS.

- Implemented a Rails server that receives MP4 metadata, such as location and time, and pushes updates to the web client via WebSockets
- Integrated a live dashboard on top of AngularJS that displays an interactive feed, along with Google Maps markers, for all incoming video streams