

# Andrew McBurney

Full-stack developer with a passion for automation, artificial intelligence, and the arts

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github.com/AndrewMcBurney

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## Workplace Experience

### Vena - Software Developer

Sep. - Dec. 2016

- Optimized SQL fetches in an internal endpoint by fetching lazily loaded object members before object serialization, **increasing performance by 99%** for sets of data with greater than 1000 records - fixing an n+1 query problem instance (*Java, Hibernate, MySQL*)
- Won second place** in a pair UI test-case writing competition against all developers at the company, judged by the quality and quantity of test cases (*Selenium, Robot Framework*)
- Extended internal command line tool to **automate API tests in parallel**, by threading the execution of tests (*Python, Node, Mocha, Postman*)

### Coupgon - Front-End Developer

Jan. - Apr. 2016

- Developed an internal store analytics application which **dynamically generates store maps** to monitor the flow of users in a grocery store, based on JSON data from a RESTful endpoint (*Angular2, TypeScript*)
- Created an **embeddable user interface** for displaying weekly coupons to exhibit on our partners' websites, including [calgarycoop.com/coupgon](http://calgarycoop.com/coupgon) (*CoffeeScript, EJS, SASS*)

## Projects & Open Source

### Emerald Language

github.com/emerald-lang

### Ruby, Emacs Lisp

Sep. 2016 - Present

- Invented a **language-agnostic templating engine** and implemented it with a small team of developers by specifying a parsing expression grammar for the language. The compiler generates HTML5 from abstract syntax trees produced by the Emerald grammar
- Added support for variable scoping from a JSON context file passed in during compilation, global variable interpolation, iteration, and conditional logic
- Developed an Emacs syntax highlighting package for the Emerald grammar, **including semantic indentation** using Emacs Lisp
- Implemented my personal website's front-end, my résumé, and [emerald-language.org](http://emerald-language.org) (collaboratively) using the Emerald templating engine

### Hybrid Keybindings

github.com/AndrewMcBurney/hybrid-mode

### Lua, Hammerspoon

Jan. 2017 - Present

- Implemented **system-wide Emacs and Vim keybindings for macOS** using Lua and Hammerspoon, based on the hybrid Emacs / Vim editing style for the Spacemacs editor
- Gives users the ability to **use Vim and Emacs keybindings anywhere**, including in web browsers, word documents, iTunes, Finder, Mail, and more

### petermcburney.com

github.com/AndrewMcBurney/peter

### Rails, PostgreSQL

Feb. 2016 - Apr. 2016

- Built my father's artwork and photography website by implementing a Rails application complete with an **authenticated admin interface** for him to manage his website content
- Stored records in a PostgreSQL database and query records with Active Record ORM; hosted on Heroku, with AWS S3 cloud storage for storing images and other large assets
- Implemented front-end logic with CoffeeScript, view templating with Slim, and styling with SASS (SCSS)

## Technical Skills

### Programming Languages

**Experienced:** C / C++, Python, Ruby

**Familiar:** Java, JavaScript, Lua, Scala

### Technologies

**Web:** HTML5 (Pug, Slim), CSS3 (SASS)

**Database:** MySQL, PostgreSQL, Hibernate

### Frameworks & Libraries

Angular (1.x & 2), Express, Flask, jQuery, Lodash, Node.js, Rails, Sinatra, Spray

### Testing & Integration

Selenium (Robot), Postman, Mocha (Chai), CircleCI, Jenkins, JUnit, RSpec

### Tools & Services

Bash, Git, Grunt, Hammerspoon, Heroku, Sbt, Unix (GNU / Linux, macOS), Vagrant

## Education

### Bachelor of Software Engineering

University of Waterloo

Sep. 2014 - Apr. 2019 (expected)

## Volunteering

### Vice President Academic

Waterloo Engineering Society

Sep. 2016 - Present

### Representation and Advocacy

I sit on multiple university committees primarily to act as a liaison and **advocate on behalf of all undergraduate engineering students** at the University of Waterloo - for academic issues pertaining to co-op, professional development, work-term reports, student appeals, and more

### Management and Administration

I manage directors under my portfolio and help them to plan and organize their events with regards to logistics, bookings, and content