

# Arash Rai

arashrai.com | github.com/arashrai | Software Engineering 3A  
a9rai@uwaterloo.ca | +1 204 914 2624

## SKILLS

### LANGUAGES

Python • C • C++ • PHP  
Java • JavaScript • HTML  
CSS • Scala • Assembly  
Mathematica • Ruby • Bash

### TECHNOLOGIES

Git • Vagrant • AWS • Apache  
SQL • Facebook/LinkedIn APIs  
Angular • Node • MongoDB  
Marionette • Django • Magento  
Docker • Webpack • Backbone  
PostgreSQL • Linux • Rails  
TensorFlow • CodeIgniter

## SOCIETIES

### MATHCAMP ALUMNUS

Attended a pure math summer program for mathematically gifted students in Portland, Oregon.

### SHAD FELLOW

Completed an engineering entrepreneurship program at the University of Saskatchewan.

## VOLUNTEERING

- UWaterloo Open House
- Engineering Shadow
- Abbotsford Food Bank
- Kiwanis Key Club
- Abbotsford Community Events
- Run for Water
- We Day Volunteer

## EDUCATION

### UNIVERSITY OF WATERLOO

Candidate for Bachelor of Software Engineering  
Expected May 2020

## INTERESTS

- Hiking
- Musical Theatre
- Algorithms
- Recreational/Pure Math
- Game of Thrones
- Board Games
- Hearthstone

## EXPERIENCE

### ZENEFITS | Software Engineering Intern

September 2017 - Present | Vancouver, BC

### FORMLABS/PINSHAPE | Web/Systems Engineering Intern

January 2017 - May 2017 | Somerville, MA

- Implemented an **AWS Lambda** function using **Python** that processed **NumPy** files placed in **S3** into resin tank heatmap GIFs for Form 2 3D printers.
- Worked with a designer to create **Backbone/Marionette** applications on the Formlabs Dashboard using **JavaScript/HTML/CSS** that allowed users to see their order history, track their current orders, and share prints.
- Created the back end for these applications using **Django** apps that talked to a **Magento API**, **AfterShip API**, and a **PostgreSQL** database in order to generate the required data.
- Fixed bugs and maintained code for the Pinshape **Rails** application, Formlabs **Django API**, and the Formlabs **Django CMS**.

### SPROUT | Full Stack Developer

May 2016 - September 2016 | Toronto, ON

- Maintained and optimized **AWS EC2**, **Redis**, **SQS**, **S3**, and **RDS** for Sprout's web and mobile platform.
- Oversaw weekly deployment process and parallelized deployment **bash** scripts for increased speed (**7x** faster) and security.
- Designed and began implementation of a plan to migrate data from **MySQL** to **MongoDB** for **600%** faster leaderboard calculations.
- Transitioned features from **LAMP** to **MEAN** stack technologies and did general bug fixing for all technologies in both stacks.

## PROJECTS

### PROJECT EULER

- Solved over 125 math/programming problems using **Python** and **C++** placing in the **top 1%** of over 633,000 Project Euler users.
- Utilized techniques such as **dynamic programming**, **memoization**, **recursion**, and **concurrency** in order to solve problems as efficiently as possible.
- Implemented algorithms/functions such as **Miller-Rabin primality testing**, **Munkres/Hungarian**, **Z algorithm**, **Mo's algorithm**, **A\*/Dijkstra's** and more to facilitate problem solving.

### THE BEAT 94.5 FM PREDICTOR

- Set up a collection of **Bash** scripts on my **EC2** instance that run **Python** scripts every 10 minutes to scrape a radio station's song history and song metadata from YouTube.
- Data is piped into a **MySQL** server running on the **EC2** instance.
- Utilized **TensorFlow's linear regression** functionality in order to predict what song will be played next based on the data in the **SQL** database.

## AWARDS

- 2015 University of Waterloo President's Scholarship of Distinction
- 2015 Grade 12 Provincial Scholarship Award (BC)
- 2015 University of Waterloo Euclid Contest School Champion
- 2015 University of the Fraser Valley Math Contest Gold Medalist