

# Arash Rai

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## EXPERIENCE

### AIRBNB | Software Engineering Intern

May 2018 - Present | San Francisco, CA

- Developed features for Airbnb's metrics framework to automatically land tables containing cumulative sum/extrema metrics every day.
- Made use of **Airflow** and wrote efficient **Hive** query templates to automatically generate incremental data and optimize backfills.
- Converted large metric tables and the queries that manage them into **Slowly Changing Dimension** format for **>99% space savings**.
- Contributed to open source **Airflow** to add quality of life improvements and better **JIRA** integration.

### ZENEFITS | Software Engineering Intern

September 2017 - December 2017 | Vancouver, BC

- Pioneered **React** development of user facing versions of core internal **Ember.js** applications for the Benefits Engineering team.
- Utilized industry **React** best practices for structuring/organizing components in order to maximize the extensibility and reusability of my code.
- Wrote **GraphQL** schemas/resolvers and the corresponding **Django** APIs to fetch the required data for my applications.

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

January 2017 - May 2017 | Somerville, MA

- Implemented **AWS Lambda** functions 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.

### 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.

## PROJECTS

### THE BEAT 94.5 FM PREDICTOR

- Set up a collection of **Python** scripts on my **EC2** instance that run periodically to scrape a radio station's song history and song metadata from YouTube and pipe it into a **MySQL DB** in order to create a dataset.
- Utilized **TensorFlow's gradient descent optimizer** to train a model that predicts when a song will be played next based on a subset of the data in the **SQL** database.

### PROJECT EULER

- Solved over 130 math/programming problems using **Python** and **C++** placing in the **top 1%** of over 780,000 Project Euler users.

## SKILLS

### LANGUAGES

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

### TECHNOLOGIES

Git • Vagrant • AWS • Apache  
SQL • Hadoop • GraphQL  
Hive • TensorFlow • Apollo  
Marionette • Django • React  
Docker • spaCy • Airflow  
Linux • Druid • Presto

## RELEVANT COURSES

- Machine Learning (Coursera)
- Neural Networks and Deep Learning (Coursera)
- Algorithms (Waterloo)
- Operating Systems (Waterloo)
- Applied Cryptography (Waterloo)
- Statistics for Software Engineering (Waterloo)
- Data Structures and Data Management (Waterloo)

## EDUCATION

### UNIVERSITY OF WATERLOO

Candidate for Bachelor of  
Software Engineering  
Expected May 2020

## 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