

# Arash Rai

arashrai.com | github.com/arashrai | Software Engineering 4A | a9rai@uwaterloo.ca

## EXPERIENCE

### STRIPE | Machine Learning Intern

January 2019 - Present | Seattle, WA

- Performed **hyperparameter tuning** for fraud detection models using **Bayesian Optimization** resulting in a 6% increase in recall.
- Generated and prepared data for ML experiments using **Scalding** and **Spark** jobs; ran experiments in **Jupyter Notebooks** and wrote reports on findings.
- Analyzed and improved Stripe's framework for continuously training, evaluating, and shipping models.

### AIRBNB | Software Engineering Intern

May 2018 - August 2018 | 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 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.

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

January 2017 - April 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.

### SPROUT | Full Stack Developer

May 2016 - August 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.

## 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.

### 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++ • Scala  
Java • JavaScript • HTML  
CSS • PHP • Mathematica  
Ruby • Bash

### TECHNOLOGIES

Git • XGBoost • AWS • Spark  
SQL • Hadoop • GraphQL  
Hive • TensorFlow • Apollo  
Scalding • Jupyter • React  
Docker • spaCy • Airflow  
Linux • Druid • Presto

## RELEVANT COURSES

- Machine Learning (Coursera)
- Neural Networks and Deep Learning (Coursera)
- Artificial Intelligence (Waterloo)
- Algorithms (Waterloo)
- Operating Systems (Waterloo)
- Applied Cryptography (Waterloo)
- Applied Probability (Waterloo)
- Statistics for Software Engineering (Waterloo)

## EDUCATION

### UNIVERSITY OF WATERLOO

Candidate for Bachelor of  
Software Engineering

Expected April 2020

GPA: 84% (3.7)

## 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