

Arash Rai

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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

- PC Gaming
- Musical Theatre
- Algorithms/Math
- Science Fiction/Fantasy Novels
- Dance
- Netflix
- Board Games

EXPERIENCE

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 transition 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 **optimized brute force** in order to solve problems as efficiently as possible.
- Implemented algorithms/functions such as **Miller-Rabin primality testing**, **Munkres/Hungarian**, **modular binary exponentiation**, **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.
- Predictions are outputted to a Slack channel periodically by a **Bash** script that utilizes the **Slack API**.

AWARDS

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|------|---|
| 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 |
| 2015 | Abbotsford Community Foundation Main Chance Scholarship |