



ROBERT XU

SOFTWARE ENGINEER

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SKILL SET

- **Languages:** Java, C++, JavaScript (ES6), Ruby, Python, Golang, HTML/CSS
- **Technologies:** Git, SQL, Node, Rails, Flask, React, Redux, GraphQL, Elasticsearch, Android, OpenCV
- **Infrastructure:** Docker, Vagrant, AWS, Kubernetes, CircleCI, Vim, Bash

EXPERIENCE

- **Software Engineer Intern | Square, San Francisco** Sep 2018 - present
 - Working on the Courier/Operations team in the Caviar division to develop server-side technologies for **courier job and delivery routing** using Ruby, Python, and PostgreSQL
 - Built fraud-detection ETL pipeline to prevent location spoofing and **automated ability to disable fraudulent users**
 - Created ability to batch courier jobs in order fulfillments microservice and exposed API endpoint for service-service communication
- **Software Engineer Intern | Globality, Menlo Park** Jan 2018 - Apr 2018

Series C startup backed by AI Gore and Sheryl Sandberg building an AI powered B2B marketplace

 - Worked with Python microservice architecture in developing REST API endpoints for data archival and data pipelining; created diagnostic tool for determining health of API endpoints and user permissions
 - **Developed global user presence capabilities using Pub/Sub pattern**, passing data through GraphQL gateway layer built on Node to and from RTC microservice; orchestrated corresponding CircleCI build workflows
 - **Created and open-sourced html-snippet** (used for AI generated reactive questions), a JavaScript micro-library for replicating highlighted HTML through generating an augmented parse tree of DOM nodes
- **Full-Stack Developer Intern | Jewlr, Toronto** Apr 2017 - Aug 2017
 - **Built CMS to manage and centralize product, sales data** with Rails, MySQL and deployed with Docker, AWS EC2. Implemented authentication and a custom Elasticsearch search engine; exposed backend REST API
 - **Created ETL pipeline for data import/export between various data warehouses**, wrote rake task that increased import speeds by 50%, supporting company expansion into the EU and UK
 - Implemented Ruby state machine to increase production process speeds by 75% and created production data tracking and analytics in Rails web app

RESEARCH

- **Undergraduate Research Assistant | UWaterloo, HCI Lab** Apr 2018 - Aug 2018
 - Worked under Prof. Dan Vogel in the Human-Computer Interaction Lab to develop gesture based, QR code scanning solutions for the visually impaired
 - **Built optical flow detection programs in C++ and Java (android)** to discern unique permutations of finger trace patterns in a constrained space using OpenCV
- **Research Assistant | MIT, Remote** July 2015 - Aug 2015
 - Enhanced Python-based, pattern recognition program that predicts synthesis of novel materials using data from materials science papers; **wrote script to encode papers into Python dictionaries** forming directed graphs

PROJECTS

- **Dashboard | Aug 2017**
 - Created team collaboration web-app with Rails, React, MySQL that allows users to join a team or create a personal dashboard; employed a many-many relationship between Users and Teams
- **Internet Thoughts | Yale Hack 2016**
 - Used Node, Twitter API to build a sentiment analysis web-engine that returns how positive or negative the internet thinks about a topic
 - Fed NLP algorithm with text corpus data to return percentage positivity and negativity associated with search query

AWARDS

- **Certified Oracle Java SE 8 Programmer | Aug 2016**
- **DECA Internationals Finalist, Entrepreneurship Category | May 2016**
- **Bronze medal, Canadian National Science Fair | Apr 2015**

EDUCATION

- **BCS Computer Science (Data Science), University of Waterloo | 2016 - present**
 - Received President's Scholarship of Distinction and Retiree's Scholarship