



ROBERT XU

SOFTWARE ENGINEER

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SKILL SET

- **Languages:** Java, JavaScript (ES6), C++/C, Ruby, Python, GoLang, HTML/CSS
- **Technologies:** Node, Rails, React, Redux, Apollo, GraphQL, MySQL, Elasticsearch, Webpack, MongoDB
- **Infrastructure:** Docker, Vagrant, AWS, Kubernetes, CircleCI, Vim, Shell Scripting

EXPERIENCE

- **Software Engineer | 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
 - Worked with React/Apollo frontend codebase to replace input fields in QnA chatrooms with state-based rich text, while increasing editor speed by 200% through custom debouncing of data
- **Full-Stack Developer | 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, creating a 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
 - Designed and A/B tested new payments layout and auto form completion with Google's GeoCoding API from analyzing granular data collected with Google Analytics, increasing user conversion rates by 8%

RESEARCH

- **Undergraduate Research Assistant | UWaterloo, HCI Lab** April 2018 - present
 - Working under Prof. Dan Vogel in the Human-Computer Interaction Lab to develop gesture based, QR code scanning solutions for the visually impaired
 - Developing **optical flow detection** algorithms in Python and Java to be implemented in a mobile application. Aiming for ability to discern over 1 billion unique permutations of finger trace patterns in a constrained space
- **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, Redux that allows users to join a team or create a personal dashboard; employed a many-many relationship between Users and Teams
- **Internet Thoughts | YHack 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
- **Speakr | Hack the Valley 2017**
 - Built Android app for speech improvement that analyses speech data in real time using Microsoft Azure API to generate a personal guideline for improvement

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, University of Waterloo | 2016 - present**
 - Received President's Scholarship of Distinction and Retiree's Scholarship