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## SKILLS

### Proficient

Python, C, C++, Javascript/ES6,  
React, Redux, AngularJS, JQuery,  
SQL, GraphQL, PHP, Ruby on Rails,  
Bootstrap, Protobuf

### Familiar

Java, C#, Scheme, Angular2,  
Express, Bottle, Hadoop,  
WebdriverIO, Mocha, Chai, Jest,  
Oxygene, SDL, MIPS Assembly

### Tools

Git, Vagrant, Docker, Nginx,  
Virtualbox, Webpack, Postman,  
Jenkins, Twilio

## EDUCATION

### University of Waterloo

Candidate for BCS, 4A  
2015 - 2020 (Ongoing)

### Coursework

Data structures and algorithms, OOP,  
multi-threaded programming,  
dynamic programming, networking,  
machine learning, artificial  
intelligence, computer security,  
compilers, operating systems,  
relational databases, computer  
architecture

## ACHIEVEMENTS

### Dean's Honours List, 2016

**Term Average 87%+**  
University of Waterloo

### Presidents Scholarship, 2015

**Entrance Average 90%+**  
University of Waterloo

### Bronze Med, 2013

**Lifeguarding certification**  
National Lifeguard Association

### 4<sup>th</sup> Place, 2012

**National Finals**  
Canadian Music Competition

### Patricia McLean Scholarship, 2008

**Highest Canada-wide exam mark**  
Royal Conservatory of Music

# Robin Pan

SOFTWARE DEVELOPER

## WORK EXPERIENCE

**Minted** | San Francisco, CA, USA | Jan 2019 – April 2019

### Software Engineer

- Rebuilt comment thread feature to improve UX and performance
  - Implemented REST API endpoints for feature using Python and Bottle
  - Added generic interface to back-end with ES6 and GraphQL
  - Built various front-end components using React and Redux
  - Introduced user mentions feature, which sends email notifications via Kafka pipelines
  - Used Protobufs as a communication medium across different servers
- Added token checking for the Facebook login, preventing CSRF attacks

**MyTime** | San Francisco, CA, USA | May 2018 – Aug 2018

### Full-Stack Developer

- Developed full-stack for MyTime's scheduling software using AngularJS, JQuery, Ruby on Rails and MySQL
- Worked with Twilio API to improve functionality of SMS messaging feature
  - Optimized phone number lookups, reducing cost by 40%
  - Implemented SMS messaging to worldwide phone numbers
- Implemented tracking for SMS usage and monthly overage charges
- Added automated color-coding options for calendar tiles

**Mercury Mortgages** | Mississauga, ON, Canada | Sept 2017 – Dec 2017

### Full-Stack Developer

- Built features for web-based mortgage lending platform using AngularJS, Bootstrap, JQuery, Laravel PHP and PostgreSQL
- Designed and implemented various features to increase website security
  - Introduced user roles feature to control website access with the help of profile data
  - Limited failed password attempts by IP and email combination
  - Added password strength enforcement
- Decreased loading time of main page from 4+ seconds to 2 seconds
- Optimized PDF generation feature, reducing generation time by 30%

**Ciena Corporation** | Ottawa, ON, Canada | Jan 2017 – Apr 2017

### Photonics Software Designer

- Developed tool for analysis of network card logs using Python
- Used card firmware source code to investigate error conditions
- Performed maintenance tasks on network cards

## PROJECTS

**PyScribe** (<https://github.com/robin-pan/PyScribe>)

### Python

- Parses digital sheet music and then generates appropriate piano fingerings for each note
- Uses genetic algorithm with two-point crossover and a hall-of-fame to search solution space
- Capable of finding optimal fingerings for rudimentary exercises such as scales or arpeggios
- Generates comfortable assignments for polyphonic music excerpts

**Snek** (<https://robin-pan.github.io/snek.html>)

### C++, Oxygene, Emscripten

- Parody of the real-time arcade game 'Snake'
- Employs various object-oriented design patterns such as subject-observer
- Embedded onto website after transpiling C++ to Javascript using Emscripten

### Compiler

#### C++, MIPS Assembly

- Fully functional compiler for the language WLP4, converting statically typed code into executable machine code
- Performs tokenizing, parsing, and semantic analysis to generate intermediate assembly code
- Assembler converts 32-bit MIPS into machine language