

# ALAIN LOU

ECE, University of Waterloo

## Contact

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## Technical Skills

- Soldering, GNU Bash, Powershell/CMD, PC Builder, C++, Java, Python (openpyxl and numpy) REST APIs, R, MATLAB/Octave, Web Dev.

## Profile

- High academic standing in rigorous curricula while pursuing side projects, demonstrating time management and organization skills
- Proven experience in technical and soft skills

## Education

**B.ASc. CANDIDATE, HONOURS**

**COMPUTER ENGINEERING**

*University of Waterloo, 2023*

### CERTIFICATIONS

Machine Learning - Stanford University

Neural Networks - University of Toronto

HCOP Level 2 National Hockey Referee

Certification

## Awards

- 2018** President's Scholarship of Distinction
- 2018** Digital Science, SAS Big Data Challenge
- 2017** Top 50, Sr. Canadian Computing Comp.
- 2017** Top 9, DECA (int'l case competition)
- 2017** Finalist (top 15), Canadian Chemistry Olympiad (for national team)

## Projects



### HardwareProjects - Personal

*Summer 2018 - Present*

- Texas Instruments LM386 amplifier circuit
- Arduino-compatible microcontroller board



### ClimateChangeDB - STEM Fellowship/SAS Big Data Challenge

*Fall 2017 - Spring 2018*

- Used Twitter and Facebook REST APIs to extract and analyse social media posts about climate change
- Research paper won Digital Science Award at the STEM Fellowship/SAS Big Data Challenge 2018



### LearnBach - Personal

*Summer - Fall 2017*

- Scripts for conversion between digital music files (MIDI) and text files (.txt), file retrieval from online repository of music files, and conversion to .csv data representation
- Used to train a neural network computer algorithm that imitates Baroque keyboard composition



### DineSafe - Presented to City of Toronto

*Spring - Summer 2017*

- Full-stack development:
- Developed client for noSQL database of JSON Objects (IBM Cloudant)
- Android mobile application using Google Maps and Geolocation APIs
- XML to JSON converter for City of Toronto OpenData

## Experience

### Royal Bank of Canada

*Technical Systems Analyst, Online Banking*

*January - April 2019*

- Angular (frontend) and Java (backend) for web development
- Spring framework, PCF, IBM portal

### University of Toronto

*Research Assistant, Department of Psychology*

*July - September 2017*

- Developed additional features using Javascript for online learning platform
- Scripting with Openpyxl and Numpy (Python) on Excel spreadsheets, data analysis with R and MATLAB
- Project management for a small research team

### Competitive Programming - profile on [dmoj.ca/user/fertilebean/solved](https://dmoj.ca/user/fertilebean/solved)

*Spring 2016 - Present*

- Perfect score on Junior Canadian Computing Challenge, honour roll (top 50) on Senior Canadian Computing Challenge, 8th place at Provincial ECOO competition
- Implemented advanced graph theory, search, and heuristics algorithms in C++, Java, and Python