

# FELIX ZHOU

Engineer & Mathemagician working with tranformation, analysis, and storage of structured and unstructured data

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## EXPERIENCE

### Software Engineering Intern

Encircle Inc.

April 2018 – August 2018    Kitchener, ON

- Full-Stack web development with Python, Tornado, TypeScript, and React
- Implemented server-side emailing feature from scratch, allowing users to query and send generated reports
- Improved client-side input experience with lazy loading and functional input state management

### Teaching Assistant

Kumon North America

September 2016 – June 2017    Burnaby, BC

- Taught students highschool mathematics from basic Arithmetic to introductory Calculus
- Graded and provided feedback to students on the problem solving process

## PROJECTS

### VM

CS246E: Objected Oriented Programming (Advanced)

November 2018

- Designed and actualized a C++14 clone of the command-line text editor in a team of two
- Used SOLID Design Principles to produce modular and extendable code
- Implemented undos and redos through the Command design pattern
- Incorporated additional design patterns including CRTP, Decorator Pattern, Non-Virtual Interface, PImpl Idiom, and Visitor Pattern

### NNLib

April 2018 – September 2018

- Created a fully functioning, light-weight Neural Network library using numpy
- Implemented back-substitution and gradient descent using the Chain Rule
- Made use of Pytest and Unit Testing to guarantee program correctness
- Trained an image classifier using NNLib which recognizes geese with over 85% accuracy

### Faustin

YHacks

December 2017

- Realized a real-time application which provides feedback in reaction to the emotion in speech
- Leveraged a Deep Neural Network in combination with Volkatorics API to classify speech in one of five emotional classes with 80% Accuracy through Python
- Presented additional tonal and semantic analysis of input through google charts API
- Launched the application via AWS on a CentOS server

## PROFICIENCIES

C++

C

Python

Java

TypeScript



TensorFlow

Keras

PostresSQL

React

React-Native

Flask

Linux Environment

Bash

Git

Phabricator

## LANGUAGES

English

Mandarin

French



## EDUCATION

Computer Science

Artificial Intelligence Option

Combinatorics and Optimization

University of Waterloo

Sept 2017 – August 2022

4.00 Faculty GPA

Dean's Honour List

## COURSE WORK

Data Structures (Advanced)

Object Oriented Programming (Advanced)

Compiler Construction

Calculus III (Advanced)

Linear Algebra II (Advanced)

Statistics (Advanced)