Felix Zhou

Computer Science Combinatorics and Optimization
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Fluent with C, C++, Python, TypeScript, NodeJS, Git, ReactJS, Numpy
Proficient in Java, PostgreSQL, Flask, Pandas, Scipy, Scikit-Learn, XGBoost, TensorFlow, Keras
Familiar with Haskell, Scheme, SQLAlchemy, Unit Testing

WORK EXPERIENCE:

Full Stack Developer | Encircle Inc. 2018-2018

- Full-Stack web development with **Python, Tornado**, **TypeScript, CoffeeScript, React,** and **React-Native**
- Implemented in-app email sending function through the **Model-Daemon** method
- Improved user input experience and optimized input state storage through **functional programming**.

Mathematics Teaching Assistant | Kumon Education 2016-2017

- Clarified confusing topics for individual students ranging from basic Arithmetic to introductory Calculus
- Improved communication skills by providing feedback to students aimed to aid their progression in mathematics

HACKATHONS:

YHacks – Emotion Recognition Web Application 2018

- Leveraged a **Deep Neural Network** to classify speech in one of five emotional classes with 80% Accuracy through **Python**
- Implemented the application with full-stack technology including **HTML**, **CSS**, **JavaScript,** and **NodeJS** framework
- Launched the application via **EC2** on a **CentOS** server

PROJECTS:

VM 2018

- Designed and actualized a **C++14** clone of the vim editor for **Linux** with **SOLID Design Principles** in a team of two
- Leveraged the **Ncurses** library for C and adapted the interface for use with C++
- Incorporated design patterns including **CRTP, Decorator Pattern, Non-Virtual Interface, PImpl Idiom**, and **Visitor Pattern**

Goose Or Not 2018

- Lead a team of 4 in designing and implementing a loosely-coupled full-stack application linked through **RESTful API**
- Implemented a **Flask** backend, a **Typescript-React** web application, and a **React-Native** mobile application
- Leveraged **Decision Trees** and **Boosting** to develop an image classifier which recognizes geese with 90% accuracy
- Deployed through **Heroku** while incorporating **PgBouncer** and employing **NGINX** as a load balancer for performance

NNLib 2018

- Designed and implemented a light-weight **Numpy**-only **Neural Network** library
- Made use of **Pytest** and **Unit Testing** to guarantee program correctness of algorithms
- Published the library on **PyPi** and employed it for use in personal projects

SIMP 2018

- Designed and implemented a dynamically-typed, compiled, imperative programming language
- Actualized both a compiler and assembler through **Pattern-Matching**
- Implemented a garbage collector to free unreachable memory

LEADERSHIP:

Associate, Sysadmin | hEDGE Financial Conference 2017-2018

- Planned for guest speakers, workshops, mock interviews, case competitions, and networking sessions
- Maintained the conference website, server, and database for applications and more
- Developed professional communication skills through contacting potential sponsors for partnership opportunities

EDUCATION:

University of Waterloo

- Candidate for Bachelor's Degree in Computer Science and Combinatorics and Optimization, 2022
- 3.97 GPA
- Object-Oriented Programming, Data Structures, Statistics, Calculus III, Linear Algebra II, Quantum Information Processing
- President's Scholarship of Distinction *for an entrance average above 95%*

ADDITIONAL INFORMATION:

Awards

- Dean's Honors List *for Fall '17, Winter '18, Fall '18* 2017-2018
- Advanced Placement International Diploma *for achieving a score of 5 in nine AP exams* 2017
- Physics Student of the Year *for highest accumulative average and performance in UBC Physics Olympics* 2016, 2017
- Winner of Tournament of Towns Mathematics Contest *for a perfect score in the competition* 2016

Languages

- Native proficiency in **Mandarin**
- Professional working proficiency in **French**