FELIX ZHOU

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

@ felix990302@yahoo.ca   📞 226-898-5226   🔗 zhou-felix.me   in felix-zhou   ⌂ felix990302

EXPERIENCE

IOT Developer Intern
California Things

📅 May 2019 – Present   📍 Redwood City, CA

- Implemented a read-write lock for **mongodb** using an asynchronous client-server architecture in both **Swift** and **C** with a **Python** interface

Software Engineering Intern
Encircle Inc.

📅 April 2018 – August 2018   📍 Kitchener, ON

- Developed features in **Tornado** and **React** to improve Encircle's web app
- Introduced **WebSockets** and **Observables** to load and update data asynchonously in real-time, improving efficiency by **5x**
- Implemented email feature to send reports through **Model-Daemon Method**, removing need to exit app in user workflow
- Improved user experience with **functional** React Components, reducing re-rendering for smoother user experience

PROJECTS

Pleter

📅 May 2019   📍 github.com/felix990302/word_completion

- Designed a thread safe autocompletion engine with a dynamic dictionary
- Implemented using a variation of **range trees** consisting of a **compressed trie** and sorted arrays in **C++**
- accounted for race conditions and deadlocks using read and write lock hierarchies
- Provided a complete Python interface using **pybind11**
- Incorporated **gprof** as profiler for optimizations including a static **fixed-size allocator** to achieve **20x** speedup

VM
CS246E: Objected Oriented Programming (Advanced)

📅 November 2018   📍 github.com/felix990302/vm

- Actualized a **C++14** clone of the command-line text editor *vim*
- Followed **Object-Oriented Principles** and **Design Patterns** like **Decorator** and **Visitor** to produce modular and extensible code
- Implemented undos and redos through the **Command** pattern to minimize space complexity

Goose or Not
Hack the North

📅 September 2018   📍 github.com/felix990302/GooseOrNot

- Created an **Online Learning** application which recognizes geese with **Flask** and **TypeScript-React**
- Designed a **PostgreSQL** database with **ORM** to improve extensibility
- Combined **NNLIB** and **XGBoost** for classification with **90% accuracy**
- Deployed several **Heroku** instances with **PgBouncer** and **NGINX** for load balancing and increased transaction throughput

Inspired by Silicon Valley Season 4 Episode 4

PROFICIENCIES

C, C++, Swift, Java,
Python 3, Typescript, Scheme, Haskell,
R, MATLAB, LaTex, MIPS

- - - - - - - - - - - - - - - - - - - -

TensorFlow, XGBoost, Keras,
scikit-learn, SciPy, NumPy,
PostreSQL, SQLAlchemy, NodeJS,
React, React-Native, Flask,

- - - - - - - - - - - - - - - - - - - -

Linux, Bash, Git, Phabricator

EDUCATION

B.S. Computer Science
University of Waterloo

📅 Sept 2017 – August 2022

- Combinatorics and Optimization Double Major
- Pure Mathematics Minor
- 3.93 GPA
- Advanced Math and CS courses

ACHIEVEMENTS

96th Percentile LeetCode

📅 2018

global rankings

- - - - - - - - - - - - - - - - - - - -

Term Dean's Honours List
University of Waterloo

📅 September 2017 – Present

for academic average above 90%

- - - - - - - - - - - - - - - - - - - -

Gold Medal
Burnaby Clef Festival

📅 June 2015

for piano performance of Polonaise in A major

- - - - - - - - - - - - - - - - - - - -

Gold Medal
Basketball BC Zone Championships

📅 April 2014

INTERESTS

Music Theory, Quantum Information, Food