

# Yi-Hong Liu

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## Technical Skills

**Languages:** C/C++, Python, Java, Golang, Javascript, Typescript, Haskell, SQL, Excel (VBA)

**Tools:** Keras, ReactJS, Java Springboot, Flask, Git, Linux

## Work Experience

*PointClickCare* – Software Engineering Co-op Jan 2021 – April 2021

- Developed fullstack applications for medical professionals using React Redux and Javaspring Boot.
- Ensured code correctness with JUnit, Enzyme, and React Testing Library tests.

*TD Securities* – Global Equity Derivatives Associate May 2020 – Aug 2020

- Migrated interest curve data aggregation from Excel to Python, streamlining workflow, resulting in 10x speedup of curve generation process.
- Developed email parser in Python enabling rapid entry of client data into pricing models.
- Automated OTC sales receipt booking procedure using Python, Excel, and xlWings saving 30 min daily.

*University of Waterloo* – Undergraduate Teaching Assistant Aug 2019 – Dec 2019

- Designed and developed Python test cases for weekly C++ quizzes and assignments.
- Utilized effective communication skills to tutor first year students in memory management, pointer operations, and simple algorithms.


*Axium Group* – Solutions Developer Jan 2019 – April 2019

- Sole developer of 3 regression test suites – significantly improved reliability of Ruby Selenium tests, reducing false failures from 900 to 150.
- Worked with web developers to ensure test cases match application features.


## Projects and Activities

*Ai-Lofi* – Python, Keras  Nov 2020 – Present

- Architected TensorFlow Keras model with word embedding and bidirectional GRU's to generate new MIDI's.
- Utilized Docker, Tensorflow Cloud, and GCP Buckets to train on over 20 GBs of data.

*Evolution Simulator* – C++, SFML  Nov 2020 – Present

- Leveraged multithreading to simulate predator prey behavior.

*Static Ray Tracer* – Haskell  Jan 2021 – Present

- Developed geometric scene renderer with ray tracing in Haskell.

*UW Formula Motorsports* – SolidWorks, Autodesk Eagle May 2019 – July 2020

- Updated power supply design to prevent inductor back voltages from triggering fuse alarm.
- Manufactured and tested (Oscilloscope, Arduino) power supply board to ensure correct fuse behaviour.

## Education

**University of Waterloo**

*Bachelors of Applied Science, Computer Engineering* 2018 – 2023

## Relevant Courses

*Algorithms and Data Structures* (C++) – Abstract data types, algorithm analysis, searching and sorting

*Systems Concurrency* (C) – Sockets, multi threading, synchronization patterns, semaphores/mutex, async io

*Digital Hardware* (Risc V, VHDL) – Completed lab assignments in Risc V and VHDL with Intel Quartus Prime