

## JINYANG YAO

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### EDUCATION

The University of British Columbia, Kelowna, BC, Canada **2017-Present**  
Currently a fourth year undergraduate student. Honours in Computer Science, minor in Mathematics

### PAST EXPERIENCES

- **2019 Summer:** Chongqing University HVAC department  
Participated the “Yangzi River area air conditioning and heating solution and its corresponding systems” research project. Developed a program to select building designs that satisfies certain multi-objective constraints.  
Designed and implemented the project’s web platform with flask and react.
- **2020 -2021:** UBC computer science honor program.  
Using semi-supervised learning to assess programming assignments.

### PERSONAL PROJECTS

**cppparsec** [github.com/ailrk/cppparsec](https://github.com/ailrk/cppparsec)  
A monadic parser combinator inspired by Haskell’s parsec library.

**mstl** [github.com/ailrk/markdowndb.macro](https://github.com/ailrk/markdowndb.macro)  
A partial replication of the C++ STL, referenced multiple implementations and added some meta programming facilities.

**lambda cube** [github.com/ailrk/lambda-cube](https://github.com/ailrk/lambda-cube)  
A set of languages extended from the simply typed lambda calculus.

**pogger** [github.com/ailrk/pogger](https://github.com/ailrk/pogger)  
A partially R5S5 compliant scheme implementation in Haskell.

**canvas-bot** [github.com/ailrk/canvas-bot](https://github.com/ailrk/canvas-bot)  
A command line client for canvas in Typescript.

### SKILLS

- **Programming Language:** Mostly used: Haskell, C++, Python, Typescript. Familiar with: SML, Ocaml, Common lisp, Java.
- **Python: 4 years** Familiar with flask web framework and sqlalchemy database ORM. Understand underlying Cpython data structures’ implementation in C. Familiar with python concurrency model and meta programming technics.
- **C++: 3 years** Familiar with the C++ data model, template meta programming, generic programming and the implementation of the STL.
- **Haskell 2 years** Familiar with functional programming. Understand GHC compilation process and some GHC optimizations. Familiar with type level programming.
- **Typescript: 1 years:** Understand the structural typing system and some type level techniques, familiar with V8 optimization, understand Node’s event loop system and it’s corresponding reactor pattern.
- **Type theory:** Implemented languages on Lambda Cube.
- **Math:** Minor in Mathematics. Linear Programming, Dynamic system, Number Theory, Abstract Algebra and some applications
- **Language:** Have been living in **English** Speaking country for more than 3 years, received band 7 for IELTS in 2017. Native **Chinese** speaker. Learning **Japanese**.