JINYANG YAO

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Education

The University of British Columbia, Kelowna, Canada 2017 – 2021

B.S. Honor in Compuster Science, Minor in Mathematics, Avg 86.9/100, GPA 3.95/4.33

Experience

Chongqing University HVAC department 2019 Summer

- Participated the "Yangzi River area air conditioning and heating solution and its corresponding systems" research project. Developed a program to select the optimal building design that satisfies given multi-objective constraints.
- Designed and implemented the project's web platform with flask and react. It collects, manages, and displays temperature data from various sensors across provinces.

UBC CS honor program 2020 - 2021

Using machine learning techique (semi-supervised learning) to assess programming assignments. Developed an iterative method allows human intervention to guide the algorithm to improve the clustering result.

PERSONAL PROJECTS

cppparsec `github.com/ailrk/cppparsec`

A C++ monadic parser combinator inspired by Haskell's parsec library.

pogger `github.com/ailrk/pogger`

A partially R5S5 compliant Scheme implementation in Haskell.

Blgol60 `github.com/ailrk/blgol60`

A haskell implementation of Algol60.

SKILLS

Programming language:

- Haskell (2 years) familiar with type level programming and the Haskell ecosystem.
- C++ (3 years) template meta programming, generic programming, and toolchain under linux such as GDB, Perf, Sanitizers, CMake. Familiar with Linux programming.
- Python (4 years) ecosystem such as Flask, Panda, numpy, sklearn and others.
- Typescript (3 years), DOM based programming, Nodejs, React, and babel plugin.
- Experience with Rust, Ocaml, Commonlisp, Racket, and Java.

Compiler:

- DSL design including external DSL and embeded DSL with HOAS, PHOAS.
- Program analysis topics such as CFG analysis, Call graph analysis.
- Various GC algorithms, parsing techniques and automatons theory.

Programming language theory:

- Semantics: operational, denotational, axiomatic semantics.
- Abstract machines models such as SECD, Krivine, and Graph reduction.
- Lambda calculus and it's extensions in lambda cube.
- MLTT. Dependent type theory.

Web programming:

- Familiar with RESTFUL api design and OAuth2.0 protocol.
- Reflection based ORM system such as SQLAlchemy.
- React based frontend developement.

Others: English - Fluent, Mandarin - Native. Abstract Algebra and applications in coding theory; Linear Programming; Some Category theory