Marisa Kirisame

marisa@cs.utah.edu
www.marisa.moe
https://github.com/MarisaKirisame/

Education

2020–2021 **PhD**, *University of Utah*, Salt Lake City

2019–2020 **Master**, *University of Washington*, Seattle

2015–2019 **Bachelor**, *University of Washington*, Seattle

Experience

2020–2022 **CPU**, *Utah*, PHD Researcher

Worked on MemBalancer.
Continued working on DTR, increasing it's academic and industrial impact.

2015–2019 **PLSE**, *Seattle*, Undergraduate/Master Researcher

Worked on DTR at master.
Worked on TVM at junior/senior.
Worked on Cassius(https://cassius.uwplse.org/) and Verdi(http://verdi.uwplse.org/) at freshman.

Projects & Skills

DTR Developed an algorithm for gradient checkpointing. Currently upstreaming to pytorch. Adopted by Megengine, DELTA, and used in production.

MemBalancer Worked at controlling the garbage collector for v8, the javascript engine behind chrome. Utilize concurrent programming and garbage collection knowledge.

TVM Top 20 contributor. Contributed to the design of Relay, a higher order, differentiable IR. Implemented Algebraic Data Types, Automatic Differentiation, Reference, Pretty Printing, Ahead-Of-Time Compiler, Partial Evaluator, contributed to Type Inference.

7Tree Using CEGIS and Ltac's logical programming capability, build a xxx

Happy-Tree A polytypic decision tree in Haskell that work on any True-Sums-Of-Products.

Ordinary A small web game to teach programming. Used Functional Reactive Programming, Nix, Zipper, and GHCJS.

PE Simply Typed Lambda Calculus with reference/product/sum with Bidirectional Type Checking, Partial Evaluation, Automatic Differentiation. Written in MetaOCaml so it can be compiled to OCaml.

Astraea Apply equality saturation to Compcert, a verified C compiler in Coq.

Prover An automated theorem prover for first order logic that use Gentzen's Sequent Calculus. Logic Formula represented as Generalized Algebraic Data Type using TMP in C++.

AI Implemented multiple search algorithms in AI Modern Approach, Including A Star, Bidirectional Breath First Search, Constraint Satisfication Programming with K Arch Consistency optimization. Heavily used Iterator Style and Boost to increase efficiency.

Language Fluent in Mandarin, Cantonese, and English.

Coursework

- Programming Languages, Deep Learning
- Advanced Computer Architecture
- Graduate Theoretical Computer Science
- Operating Systems
- Database
- Systems for Machine Learning