Marisa Kirisame

Education

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

Experience

2015–2019 **PLSE**, *Seattle*, Undergraduate Researcher.
Worked on TVM at junior/senior.
Worked on Astraea and DeepDarkFantasy at sophomore.
Worked on Cassius(https://cassius.uwplse.org/) and Verdi(http://verdi.uwplse.org/) at freshman.

2017 **Microsoft Research Asia**, *Beijing*, Summer Intern.
Worked on Deep Learning (knowledge distillation) using Pytorch and Tensorflow.

2016 **Thoughtworks**, *Beijing*, Summer Intern.
Designed and Worked on DeepDarkFantasy(DDF).

Publications

[1] Jared Roesch, Steven Lyubomirsky, Logan Weber, Josh Pollock, Marisa Kirisame, Tianqi Chen, and Zachary Tatlock. Relay: A new IR for machine learning frameworks. *CoRR*, abs/1810.00952, 2018.

Projects

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 that compile Relay code to C++ code, contributed to Type Inference.

DDF A Higher order Deep Learning Framework in Haskell for differentiable programming, using Final Tagless and Template Haskell. 500 Github stars.

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 Template Metaprogramming in C++.

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

Coursework

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

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