

Marisa Kirisame

Education

2015–2019 **Bachelor**, *University of Washington*, Seattle, GPA 3.28.

Experience

2015–2019 **PLSE**, *Seattle*, Undergraduate Researcher.

Worked on Cassius and Verdi at freshman.

Worked on Astraea, continued working on DDF at sophomore.

Worked on TVM at junior/senior. Top 20 contributor, mainly work on a new IR, Relay. Implemented Algebraic Data Type, Automatic Differentiation, Reference, Pretty Printing, Ahead-Of-Time Compiler that compile Relay code to C++ code, contributed to Type Inference.

2017 **Microsoft Research Asia**, *Beijing*, Summer Intern.

Worked on Deep Learning (knowledge distillation) using Pytorch and Tensorflow.

2016 **Thoughtworks**, *Beijing*, Summer Intern.

Worked on DDF, A Higher order Deep Learning Framework in Haskell for differentiable programming, using Final Tagless and Template Haskell.

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.

Additional Project

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 Try to bring 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

- Programming Language, Graduate TCS
- Advanced Computer Architecture
- Deep Learning
- Operating System
- Database
- System for Machine Learning