

Marisa Kirisame

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🌐 <https://github.com/MarisaKirisame/>

Education

- 2020–2020 **PHD**, *University of Utah*, Salt Lake City.
2019–2020 **Master**, *University of Washington*, Seattle.
2015–2019 **Bachelor**, *University of Washington*, Seattle.

Experience

- 2020–2020 **CPU**, *Utah*, PHD Researcher.
2015–2019 **PLSE**, *Seattle*, Undergraduate Researcher.
Worked on TVM at junior/senior.
Worked on Cassius(<https://cassius.uwplse.org/>) and Verdi(<http://verdi.uwplse.org/>) at freshman.

Publications

- [1] Jared Roesch, Steven Lyubomirsky, Marisa Kirisame, Josh Pollock, Logan Weber, Ziheng Jiang, Tianqi Chen, Thierry Moreau, and Zachary Tatlock. Relay: A high-level IR for deep learning. *CoRR*, abs/1904.08368, 2019.
- [2] Marisa Kirisame, Steven Lyubomirsky, Altan T. Haan, Jennifer Brennan, Mike Z He, Jared Roesch, Tianqi Chen, and Zachary Tatlock. Dynamic tensor rematerialization. *ArXiv*, abs/2006.09616, 2020.

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, Partial Evaluator, contributed to Type Inference.
- DTR** An algorithm for efficient dynamic checkpointing. Implemented in a Pytorch fork. Currently upstreaming.
- 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

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