

MIKE HE

<https://ad1024.space>

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SKILLS

Languages	C/C++, Python, Java, Rust, OCaml, Haskell, Coq, Agda, L ^A T _E X
Skills	Certified & Functional Programming, Automated Verification
Others	I've been playing the violin for 17 years. I like Symphonies composed by Gustav Mahler.

EDUCATION

University of Washington, Seattle <i>B.S. in Computer Science</i>	<i>Sept. 2018—Est. Jun. 2022</i>
<ul style="list-style-type: none">• Cumulative GPA: 3.88• Interests of Studies: Programming Languages & Formal Verification & Compilers & MLSys	

EXPERIENCE

PLSE & SAMPL Research Group, University of Washington <i>Research Assistant</i>	Oct. 2019—Now <i>Seattle, WA</i>
<ul style="list-style-type: none">· Working on building an automated and verified compiler for Deep Learning accelerators· Added new features such as Experiment Profiler in the evaluation infrastructure for Relay in TVM addressing performance bottleneck· Worked on Dynamic Tensor Rematerialization, an online greedy gradient checkpointing algorithm that enables training Deep Learning models on memory-constrained devices.	

ECE, University of Washington <i>Research Assistant</i>	Jan. 2019—Sept. 2019 <i>Seattle, WA</i>
<ul style="list-style-type: none">· Developed an online panel for visualizing data collected from solar panels deployed around UW campus.	

PROJECTS

Sager <ul style="list-style-type: none">• A demonic data structure synthesizer that aims to explore worst-cases performance of graph algorithms.• Language & TOOLS: Racket, Rosette, Z3• Keywords: SMT Solver, Incremental Solving, Program Synthesis, Symbolic Execution
veripy <ul style="list-style-type: none">• An auto-active program verification library for Python 3 that can verify implementations against specifications of programs.• Language & TOOLS: Python 3, SMT-LIB, Z3, PYPARSING• Keywords: SMT Solver, Static Analysis, Hoare Logic, Program Verification
dtlc <ul style="list-style-type: none">• An implementation of dependently-typed lambda calculus that can be used as a Proof Assistant• Language & TOOLS: OCaml, MENHIR, DUNE• Keywords: Type Theory - Dependent Type, Proof Assistant, Functional Programming

PUBLICATIONS

Kirisame, M., Lyubomirsky, S., Haan, A., Brennan, J., **He, M.**, Roesch, J., Chen, T., Tatlock, Z. *Dynamic Tensor Rematerialization*. ICLR 2021 (Spotlight). September 19, 2020. <https://arxiv.org/abs/2006.09616>

HONORS

• Lynn Conway Research Award (DTR Team) , ADA	<i>2020</i>
• Annual Dean's List , University of Washington	<i>2018—2020</i>
• Second Prize , National Olympiad in Informatics (Beijing Regional)	<i>Dec. 2016</i>