Mike (Deyuan) He

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Education

Princeton University, Princeton, NJ — 2022 – Est. 2027

Ph.D. in Computer Science
M.A. in Computer Science (conferred in May. 2024)
Advisor: Prof. Aarti Gupta
Fields of study: Compilers; Formal Verification; Distributed Systems; Equality Saturation

University *of* Washington, Seattle, WA — 2018 – 2022

B.S. in Computer Science, conferred in June 2022 (Cum Laude)
Advisors: Prof. Zachary Tatlock & Dr. Steven Lyubomirsky
Selected Honor: CRA Outstanding Undergraduate Researcher Award, Honorable Mention (2022)

Publications & Pre-prints

- **Mike He**, Ankush Desai, Aishwarya Jagarapu, Doug Terry, Sharad Malik, and Aarti Gupta. PInfer: Automatically learning specifications for distributed systems from event traces [***in submission***]
- Akash Gaonkar, **Mike He**, Yi Li, Bo-Yuan Huang, Andrew Cheung, Vishal Canumalla, Gus Smith, Zachary Tatlock, Sharad Malik, and Aarti Gupta. Verification of software-to-hardware mappings for machine learning accelerators [***in submission***]
- **Mike He**, Haichen Dong, Sharad Malik, and Aarti Gupta. Improving term extraction with acyclic constraints. In *E-Graph Research, Applications, Practices, and Human-factors Symposium* [Paper]
- Bo-Yuan Huang*, Steven Lyubomirsky*, Yi Li, **Mike He**, Thierry Tambe, Gus Henry Smith, Akash Gaonkar, Vishal Canumalla, Gu-Yeon Wei, Aarti Gupta, Sharad Malik, and Zachary Tatlock. Application-level validation of accelerator designs using a formal software/hardware interface. *ACM Trans. Des. Autom. Electron. Syst.* [Paper]
- Marisa Kirisame*, Steven Lyubomirsky*, Altan Haan*, Jennifer Brennan, **Mike He**, Jared Roesch, Tianqi Chen, and Zachary Tatlock. Dynamic tensor rematerialization. In *International Conference on Learning Representations (ICLR'21)* [ArXiv]

</> Experience

Amazon Web Services, Santa Clara CA

- *Applied Scientist Intern* at Automated Reasoning Group — May. 2025 – Aug. 2025
- *Applied Scientist Intern* at Database System Lab — May. 2024 – Aug. 2024

Princeton University, Princeton, NJ

- *Graduate Research Assistant* — Aug. 2022 – Now
- *Graduate Teaching Assistant*, COS 516 — Fall'23 and Fall'24

Taichi Graphics, Remote and Beijing, China

- *Compiler R&D Intern* — June. 2022 – Sep. 2022

Intel, Remote and Hillsboro, OR

- *Formal Verification Research Intern* at Strategic CAD Lab — Mar. 2022 – June 2022

Service

- Sub-reviewer: OOPSLA'24
- Artifact Evaluation Committee: POPL'25, PLDI'24, POPL'24, MLSys'23, MICRO'21