

JIAQI YIN

CONTACT INFORMATION

University of Maryland, College Park

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Google Scholar: <https://scholar.google.com/citations?user=Jod5WP0AAAAJ&hl=en>

RESEARCH INTERESTS

- **Electronic Design Automation**
- **Logic Synthesis**
- **Formal Verification**
- **High-Level Synthesis**
- **Combinatorial Optimization**

EDUCATION

University of Maryland, College Park (Transferred)

2023-present

University of Utah

2012-2023

Ph.D., Computer Engineering

Advisor: Cunxi Yu

The Ohio State University

2018-2020

M.S., Electrical and Computer Engineering

Advisor: Xiaorui Wang

Harbin Engineering University

2014-2018

B.S., Communication Engineering

EMPLOYMENT

Pacific Northwest National Laboratory

June 2023 – August 2023

Graduate Intern – SODA-OPT Optimization (System design tool for MLIR)

Cadence Design Systems

May 2024 – August 2024

Graduate Intern – Genus Development

AWARD

Best Paper Nomination, Design Automation Conference (DAC 2025)

ICCAD Student Scholar Program Travel Grant, 2024 (ICCAD 2024)

NSF Student Travel Grant, 2022 (SEC 2022)

PUBLICATIONS

- [1] **[Best Paper Nomination]** **[DAC 25]** Jiaqi Yin, Zhan Song, Chen Chen, Qihao Hu, Cunxi Yu, "BoolE: Exact Symbolic Reasoning via Boolean Equality Saturation", *2025 62th ACM/IEEE Design Automation Conference (DAC)*, 2025.
- [2] **[Under Review]** **[ICCAD 25]** Jiaqi Yin, Zhan Song, Chen Chen, Yaohui Cai, Zhiru Zhang, Cunxi Yu, "e-boost: Boosted E-Graph Extraction with Adaptive Heuristics and Exact Solving", *2025 IEEE/ACM International Conference on Computer Aided Design (ICCAD)*, 2025.
- [3] **[USENIX ATC 25]** Jiaqi Yin, Zhan Song, Nicolas Bohm Agostini, Antonino Tumeo, Cunxi Yu, "HEC: Equivalence Verification Checking for Code Transformation via Equality Saturation", *2025 USENIX Annual Technical Conference (USENIX ATC)*, 2025.
- [4] **[ICCAD 23]** Jiaqi Yin, Cunxi Yu, "Accelerating exact combinatorial optimization via rl-based initialization-a case study in scheduling", *2023 IEEE/ACM International Conference on Computer Aided Design (ICCAD)*, 2023.
- [5] **[DAC 23]** Jiaqi Yin, Yingjie Li, Daniel Robinson, Cunxi Yu, "Respect: Reinforcement learning based edge scheduling on pipelined coral edge tpus", *2023 60th ACM/IEEE Design Automation Conference (DAC)*, 2023.
- [6] **[SEC 22]** Jiaqi Yin, Zhiru Zhang, Cunxi Yu, "Exact memory-and communication-aware scheduling of dnns on pipelined edge TPUs", *2022 IEEE/ACM 7th Symposium on Edge Computing (SEC)*, 2022.
- [7] **[Under Review]** **[NeurIPS 25]** Mingju Liu, Jiaqi Yin, Alvaro Velasquez, Cunxi Yu, "Differentiable Initialization Accelerated CPU-GPU Hybrid Combinatorial Scheduling", *2025 39th Conference on Neural Information Processing Systems (NeurIPS)*, 2025.
- [8] **[ICML 24]** Mingju Liu, Yingjie Li, Jiaqi Yin, Zhiru Zhang, Cunxi Yu, "Differentiable Combinatorial Scheduling at Scale", *41st International Conference on Machine Learning (ICML)*, 2024.
- [9] **[ICCAD 23]** Zhuoping Yang, Jinming Zhuang, Jiaqi Yin, Cunxi Yu, Alex K Jones, Peipei Zhou, "Aim: Accelerating arbitrary-precision integer multiplication on heterogeneous reconfigurable computing platform versal acap", *2023 IEEE/ACM International Conference on Computer Aided Design (ICCAD)*, 2023.
- [10] **[FCCM 22]** Ecenur Ustun, Ismail San, Jiaqi Yin, Cunxi Yu, Zhiru Zhang, "Impress: Large integer multiplication expression rewriting for fpga hls", *2022 IEEE 30th Annual International Symposium on Field-Programmable Custom Computing Machines (FCCM)*, 2022.

OPEN-SOURCED FRAMEWORKS

RESPECT: Reinforcement Learning based Scheduling Framework (RESPECT)

BoolE: Symbolic Reasoning via Boolean Equality Saturation (BoolE)

AIM: Arbitrary-precision Integer Multiplier (AIM)

Differentiable Scheduling: Differentiable Combinatorial Scheduling at Scale (Scheduling)

SERVICE

Journal Review

- IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)

Conference Review

- ICCAD 2025
- MLCAD 2025

TEACHING EXPERIENCE

- **Fall 2021: University of Utah – ECE/CS 3700 – Digital System Design**
- **Fall 2022: University of Utah – ECE/CS 3700 – Digital System Design**