# JIAQI YIN

## CONTACT INFORMATION

**University of Maryland, College Park**
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## RESEARCH INTERESTS

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

## EDUCATION

**University of Maryland, College Park (Transfered)** *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**