

Zixiao Wang (王子啸)

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BIOGRAPHY

Zixiao Wang is currently a Ph.D. candidate at the [Department of Computer Science and Engineering, The Chinese University of Hong Kong \(CUHK\)](#), under the supervision of [Prof. Bei Yu](#) and [Prof. Farzan Farnia](#). He received his M.Sc. in Computer Science and Technology and B.Eng. in Automation (with a second major in Economics) from [Tsinghua University](#).

His research interests primarily lie at the intersection of Electronic Design Automation (EDA) and Machine Learning. His work encompasses areas such as 1) design for manufacturability, 2) simulation within EDA, and 3) the development of hardware-efficient machine learning algorithms.

EDUCATION

- The Chinese University of Hong Kong** Aug 2022 – Present
Ph.D. in Computer Science and Engineering
◦ Advisor: [Prof. Bei Yu](#) & [Prof. Farzan Farnia](#)
Hong Kong, China
- Tsinghua University** Sep 2019 – Jun 2022
M.Sc. in Computer Science and Technology
Beijing, China
- Tsinghua University** Sep 2015 – Jun 2019
B.Eng. in Automation
Beijing, China
- Tsinghua University** Sep 2016 – Jun 2019
B.A. in Economics (Second Major)
Beijing, China

HONORS AND AWARDS

- Full Postgraduate Studentship** 2022–2026
CUHK
- Outstanding Graduate of CSE** 2022
Tsinghua University
- Qi Hang Scholarship** 2019
Tsinghua University
- Academician Ni Weidou Scholarship** 2018
Tsinghua University
- 2nd Place Award in Technical Challenge (Team Vulcan)** 2018
RoboCup
- 3rd Place Award in 1v1 Contest (Team Vulcan)** 2018
RoboCup
- Zheng Geru Scholarship** 2017
Tsinghua University
- Comprehensive Scholarship** 2016, 2020
Tsinghua University

EXPERIENCE

- Primarius Technologies** Jan 2026 – Present
Research Intern
Shanghai, China
- Huawei Noah's Ark Lab** Aug 2024 – May 2025
Research Intern
Hong Kong, China
- SenseTime Research** Apr 2023 – Dec 2023
Research Intern
Hong Kong, China
- Tencent AI Lab** Oct 2020 – Aug 2022
Research Intern
Shenzhen, China
- UBTECH Robotics** Sep 2017 – Aug 2018
Research Intern
Beijing, China

PUBLICATIONS

Conference Papers

- [C14] Leilei Jin, Haoyang Xu, Siyuan Liang, Zhen Zhuang, Zhou Hu, **Zixiao Wang**, Bei Yu, Rongmei Chen, Tsung-Yi Ho, “BSPDN-Elite: A Comprehensive Framework for Optimizing Timing, Power and Routing Resources in BSPDN Designs”, ACM/IEEE Design Automation Conference (DAC), Long Beach, Jul. 26–29, 2026.
- [C13] **Zixiao Wang**, Jieya Zhou, Xinyun Zhang, Shoubo Hu, Farzan Farnia, Bei Yu, “DiffResist: Physics-Constrained Diffusion for Photoresist Modeling”, Design, Automation and Test in Europe Conference (DATE), Verona, Italy, Apr. 20–22, 2026. [paper] [poster] [slides]
- [C12] **Zixiao Wang**, Tianshu Hou, Chenghan Wang, Zhen Zhuang, Tsung-Yi Ho, Farzan Farnia, Bei Yu, “FastRW: An Efficient Random Walk Method for Steady-State Thermal Analysis”, Design, Automation and Test in Europe Conference (DATE), Verona, Italy, Apr. 20–22, 2026. [paper] [poster] [slides]
- [C11] Wenbo Xu, Silin Chen, Yibo Huang, Xinyun Zhang, **Zixiao Wang**, Bei Yu, Ningmu Zou, “Node2Node: Node Adaptation with Transformer for Cross-Node Hotspot Detection”, Design, Automation and Test in Europe Conference (DATE), Verona, Italy, Apr. 20–22, 2026. [paper]
- [C10] Rongliang Fu, Libo Shen, Ziyi Wang, Zhengxing Lei, **Zixiao Wang**, Junying Huang, Bei Yu, Tsung-Yi Ho, “DCLOG: Don’t Cares-based Logic Optimization using Pre-training Graph Neural Networks”, IEEE/ACM Asia and South Pacific Design Automation Conference (APSDAC), Hong Kong Disneyland, Jan. 19–22, 2026. [paper]
- [C9] Xinyun Zhang*, **Zixiao Wang***, Yurui Kuang, Bei Yu, “Video-based Visible-Event Cross-modal Person Re-identification for Edge AI Surveillance Systems”, IEEE/ACM Asia and South Pacific Design Automation Conference (APSDAC), Hong Kong Disneyland, Jan. 19–22, 2026. [paper] [slides]
- [C8] Ziyang Yu, Peng Xu, **Zixiao Wang**, Binwu Zhu, Qipan Wang, Yibo Lin, Runsheng Wang, Bei Yu, Martin Wong, “SDM-PEB: Spatial-Depthwise Mamba for Enhanced Post-Exposure Bake Simulation”, ACM/IEEE Design Automation Conference (DAC), San Francisco, Jun. 22–25, 2025. [paper] [poster] [slides]
- [C7] **Zixiao Wang**, Junwu Weng, Mengyuan Liu, Bei Yu, “FlexPose: Pose Distribution Adaptation with Limited Guidance”, AAAI Conference on Artificial Intelligence (AAAI), Philadelphia, Feb. 25–Mar. 04, 2025. [paper] [poster]
- [C6] **Zixiao Wang**, Jieya Zhou, Su Zheng, Shuo Yin, Kaichao Liang, Shoubo Hu, Xiao Chen, Bei Yu, “TorchResist: Open-source Differentiable Resist Simulator”, SPIE Advanced Lithography + Patterning, San Jose, Feb. 23–27, 2025. [paper] [poster] [code]
- [C5] **Zixiao Wang***, Yunheng Shen*, Xufeng Yao, Wenqian Zhao, Yang Bai, Farzan Farnia, Bei Yu, “ChatPattern: Layout Pattern Customization via Natural Language”, ACM/IEEE Design Automation Conference (DAC), San Francisco, Jun. 23–27, 2024. [paper] [poster] [slides]
- [C4] Yang Bai, Wenqian Zhao, Shuo Yin, **Zixiao Wang**, Bei Yu, “ATFormer: A Learned Performance Model with Transfer Learning Across Devices for Large-Scale Transformers”, Empirical Methods in Natural Language Processing (EMNLP), Singapore, Dec. 06–10, 2023. [paper] [poster] [slides]
- [C3] **Zixiao Wang***, Yunheng Shen*, Wenqian Zhao, Yang Bai, Guojin Chen, Farzan Farnia, Bei Yu, “DiffPattern: Layout Pattern Generation via Discrete Diffusion”, ACM/IEEE Design Automation Conference (DAC), San Francisco, Jul. 09–13, 2023. [paper] [poster] [slides]
- [C2] **Zixiao Wang**, Junwu Weng, Chun Yuan, Jue Wang, “Truncate-Split-Contrast: A Framework for Learning from Mislabeled Videos”, AAAI Conference on Artificial Intelligence (AAAI, Oral), Washington, Feb. 7–14, 2023. [paper] [poster] [slides] [code]
- [C1] Haijin Ding, **Zixiao Wang**, Rebing Wu, “Enhancing the security of multi-agent networked control systems using QKD based homomorphic encryption”, IEEE Conference on Decision and Control (CDC), Miami Beach, Dec. 17–19, 2018. [paper]

Journal Papers

- [J5] **Zixiao Wang**, Wenqian Zhao, Yunheng Shen, Yang Bai, Guojin Chen, Farzan Farnia, Bei Yu, “DiffPattern-Flex: Efficient Layout Pattern Generation via Discrete Diffusion”, accepted by IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD). [paper]
- [J4] Wenqian Zhao, Lancheng Zou, **Zixiao Wang**, Xufeng Yao, Bei Yu, “HAPE: Hardware-Aware LLM Pruning For Efficient On-Device Inference Optimization”, ACM Transactions on Design Automation of Electronic Systems (TODAES), vol. 30, no. 04, pp. 61:1–61:18, 2025. [paper] (Editor’s Pick)
- [J3] Wenqian Zhao, Shuo Yin, Chen Bai, **Zixiao Wang**, Bei Yu, “BAQE: Backend-Adaptive DNN Deployment via Synchronous Bayesian Quantization and Hardware Configuration Exploration”, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), vol. 44, no. 05, pp. 1915–1927, 2025. [paper]
- [J2] Guojin Chen, **Zixiao Wang**, Bei Yu, David Z. Pan, Martin D.F. Wong, “Ultra-Fast Source Mask Optimization via Conditional Discrete Diffusion”, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), vol. 43, no. 07, pp. 2140–2150, 2024. [paper]

[J1] Yang Bai, Xufeng Yao, Qi Sun, Wenqian Zhao, Shixin Chen, **Zixiao Wang**, Bei Yu, "GTCO: Graph and Tensor Co-Design for Transformer-based Image Recognition on Tensor Cores", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), vol. 43, no. 02, pp. 586–599, 2024. [paper]

Selected Preprints

[S2] "On the Distributed Evaluation of Generative Models", [arXiv](#).

[S1] "MoreauPruner: Robust Pruning of Large Language Models against Weight Perturbations", [arXiv](#). [code]

SOFTWARE

- **TorchResist** 2025
An open-source differentiable photoresist simulator that is implemented with Pytorch.
- **MoreauPruner** 2024
Robust pruning framework for large language models against weight perturbations.

TEACHING EXPERIENCE

- **CSCI3320** 2023-R2
Fundamentals of Machine Learning, CUHK
- **ENGG2760A** 2023-R1
Probability for Engineers, CUHK
- **CSCI5030** 2022-R2
Machine Learning Theory, CUHK
- **ENGG2020** 2022-R1
Digital Logic and Systems, CUHK