

# Guojin Chen

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## Current Position

**Visiting Student**, *The University of Texas at Austin* 2023.08 – Present  
Supervisor : Prof. David Z. Pan

**Ph.D. Candidate**, *The Chinese University of Hong Kong* 2021.08 – Present  
Supervisor : Prof. Bei Yu

## Education

**Ph.D. in Computer Science**, *The Chinese University of Hong Kong* 2021 – Present

**M.S. in Computer Science**, *The Chinese University of Hong Kong* 2019 – 2020

**B.S. in Computer Science**, *Huazhong University of Science and Technology* 2015 – 2019

## Research Interests

- Design for manufacturing (DFM) / Electronic design automation (EDA)
- Computational lithography / Resolution enhancement technologies
- Deep Learning for VLSI / Physics-informed deep learning

## Publications [Google Scholar; 71+ citations, h-index: 4+]

Representative publications that I am a primary author on are **highlighted**.

### Conference papers

- [C11] AlphaSyn: Logic Synthesis Optimization with Efficient Monte Carlo Tree Search  
Zehua Pei, Fangzhou Liu, Zhuolun He, **Guojin Chen**, Haisheng Zheng, Keren Zhu, and Bei Yu  
*Proceedings of the 42th International Conference on Computer-Aided Design (ICCAD 2023)*
- [C10] Physics-Informed Optical Kernel Regression Using Complex-valued Neural Fields  
**Guojin Chen**, Zehua Pei, Haoyu Yang, Yuzhe Ma, Bei Yu, and Martin Wong  
*ACM/IEEE Design Automation Conference (DAC 2023)*
- [C9] DiffPattern: Layout Pattern Generation via Discrete Diffusion  
Zixiao Wang, Yunheng Shen, Wenqian Zhao, Yang Bai, **Guojin Chen**, Farzan Farnia, and Bei Yu  
*ACM/IEEE Design Automation Conference (DAC 2023)*
- [C8] GPU-accelerated Matrix Cover Algorithm for Multiple Patterning Layout Decomposition  
**Guojin Chen**, Haoyu Yang, and Bei Yu  
*DTCO and Computational Patterning II (SPIE 2023)*
- [C7] Efficient Point Cloud Analysis Using Hilbert Curve.  
Wanli Chen, Xinge Zhu, **Guojin Chen**, and Bei Yu  
*European Conference on Computer Vision (ECCV 2022)*
- [C6] AdaOPC: A Self-Adaptive Mask Optimization Framework For Real Design Patterns  
Wenqian Zhao, Xufeng Yao, Ziyang Yu, **Guojin Chen**, Yuzhe Ma, Bei Yu, and Martin Wong  
*Proceedings of the 41th International Conference on Computer-Aided Design (ICCAD 2022)*
- [C5] LayoutTransformer: Generating Layout Patterns with Transformer via Sequential Pattern Modeling  
Liangjian Wen, Yi Zhu, Lei Ye, **Guojin Chen**, Bei Yu, Jianzhuang Liu, and Chunjing Xu  
*Proceedings of the 41th International Conference on Computer-Aided Design (ICCAD 2022)*
- [C4] DevelSet: Deep Neural Level Set for Instant Mask optimization  
**Guojin Chen**, Ziyang Yu, Hongduo Liu, Yuzhe Ma, and Bei Yu  
*Proceedings of the 40th International Conference on Computer-Aided Design (ICCAD 2021)*

- [C3] Learning Point Clouds in EDA.  
Wei Li, **Guojin Chen**, Haoyu Yang, Ran Chen, and Bei Yu  
*ACM International Symposium on Physical Design (ISPD 2021)*
- [C2] DAMO: Deep Agile Mask Optimization for Full Chip Scale  
**Guojin Chen**, Wanli Chen, Yuzhe Ma, Haoyu Yang, and Bei Yu  
*Proceedings of the 39th International Conference on Computer-Aided Design (ICCAD 2020)*
- [C1] A GPU-enabled Level Set Method for Mask Optimization  
Ziyang Yu, **Guojin Chen**, Yuzhe Ma, and Bei Yu  
*IEEE/ACM Proceedings Design, Automation and Test in Europe (DATE 2020)*

## Journal papers.....

- [J4] L2O-ILT: Learning to Optimize Inverse Lithography Techniques  
Binwu Zhu, Su Zheng, Ziyang Yu, **Guojin Chen**, Yuzhe Ma, Fan Yang, Bei Yu, and Martin Wong  
*IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD 2023)*
- [J3] A GPU-Enabled Level-Set Method for Mask Optimization  
Ziyang Yu, **Guojin Chen**, Yuzhe Ma, and Bei Yu  
*IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD 2023)*
- [J2] DevelSet: Deep Neural Level Set for Instant Mask optimization  
**Guojin Chen**, Ziyang Yu, Hongduo Liu, Yuzhe Ma, and Bei Yu  
*IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD 2023)*
- [J1] DAMO: Deep Agile Mask Optimization for Full-Chip Scale  
**Guojin Chen**, Wanli Chen, Qi Sun, Yuzhe Ma, Haoyu Yang, and Bei Yu  
*IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD 2022)*

## Open Source Repositories

1. OpenOPC/OpenILT — ★32 — *Open-source inverse lithography technology (ILT) framework* 2023

## Professional Activities

Paper Review / External Review.....	
Design Automation Conference (DAC)	2021-2023
AAAI Conference on Artificial Intelligence (AAAI)	2022-2023
IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)	2022-2023

## Teaching

Python Computing (AIST 1110), TA	F2022
Mobile Computing (CSCI 3310), TA	S2022
Numerical Optimization (AIST 3010), TA	F2021