林亦波

助理教授 < 设计自动化与计算系统系 < 集成电路学院 < 北京大学 yibolin@pku.edu.cn < www.yibolin.com

研究方向

面向超大规模集成电路设计自动化的建模和优化、深度学习及其应用、异构计算

教育经历

德克萨斯大学奥斯汀分校

2013年8月-2018年5月

博士学位, 电子与计算机工程系

指导老师: David Z. Pan

博士毕业论文: "Bridging Design and Manufacturing Gap through Machine Learning and Machine-Generated Layout"

(学积分 3.96/4.0)

上海交通大学

2009年9月-2013年6月

学士学位,微电子学院 (学积分 91.17/100) (排名 1/60)

工作经历

北京大学 (Peking University)

2019年7月 - 现在

助理教授

集成电路学院设计自动化与计算系统系(自 2021 年 11 月)

信息科学技术学院高能效计算与应用中心

德克萨斯大学奥斯汀分校 (UT Austin)

2018年6月-2019年6月

博后

授课经历

主讲	设计自动化与计算系统导论	研究生课, 2022 年秋
主讲	芯片设计自动化与智能优化	本科生课, 2021-2022 年春
主讲	计算概论 B	本科生课, 2020-2022 年秋

奖项及荣誉

最佳论文 (4/205)	DATE	2023 年
最佳论文 (4/249)	DATE	2022 年
最佳论文提名	ICCAD	2022 年
最佳论文 (2/3495, 4 年总和)	TCAD	2021 年
最佳论文	ISPD	2020 年

最佳论文提名	ASPDAC	2020年
最佳论文 (1/201) & 提名 (5/201)	DAC	2019年
最佳论文提名	ISPD	2019年
首届最佳论文	Integration, the VLSI Journal	2018年
Graduate Continuing Fellowship	德克萨斯大学奥斯汀分校	2017年
Franco Cerrina Memorial 最佳学生论文	SPIE	2016年
A. Richard Newton Young Student Fellow	DAC	2014年
国家奖学金	上海交通大学	2012年
三星奖学金	上海交通大学	2011年
二等奖学金	上海交通大学	2010年

学术服务

技术程序委员会成员

- ACM/IEEE Design Automation Conference (DAC): 2020.
- IEEE/ACM International Conference on Computer-Aided Design (ICCAD): 2018, 2019, 2020, 2021.
- IEEE International Conference on Computer Design (ICCD): 2019.
- IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC): 2021, 2022.
- ACM International Symposium on Physical Design (ISPD): 2020.
- ACM/IEEE Workshop on Machine Learning for CAD (MLCAD): 2021.
- Workshop on Synthesis And System Integration of Mixed Information technologies (SASIMI): 2021.
- IEEE Electron Devices Technology and Manufacturing Conference (EDTM): 2021.
- IEEE International Conference on Artificial Intelligence Circuits and Systems (AICAS): 2022.

期刊审稿人

- IEEE Transaction on Computer-Aided Design of Integrated Circuits and Systems (TCAD).
- IEEE Transactions on Computers (TC).
- ACM Transaction on Design Automation of Electronic Systems (TODAES).
- SPIE Journal of Micro/Nanolithography, MEMS, and MOEMS (JM3).
- Elsevier, Integration, the VLSI Journal (Integration).

期刊编辑

 ACM Transaction on Design Automation of Electronic Systems (TODAES) Special Issue on MLCAD, 2022.

执行委员会成员

• ACM/IEEE Workshop on Machine Learning for CAD (MLCAD) 2021, financial chair.

书籍章节

- [B3] Yibo Lin, Zizheng Guo and Jing Mai, "Deep Learning Framework for Placement", Machine Learning Applications in Electronic Design Automation, Springer, 2023, edited by Haoxing Ren and Jiang Hu. (Invited Book Chapter)
- [B2] Haoyu Yang, **Yibo Lin** and Bei Yu, "Machine Learning for Mask Synthesis and Verification", Machine Learning Applications in Electronic Design Automation, Springer, 2023, edited by Haoxing Ren and Jiang Hu. (**Invited Book Chapter**)
- [B1] Yibo Lin and David Z. Pan, "Machine Learning in Physical Verification, Mask Synthesis, and Physical Design", Machine Learning in VLSI Computer-Aided Design, Springer, 2018, edited by Abe Elfedel, Duane Boning and Xin Li. (Invited Book Chapter)

期刊论文

- [J42] Peiyu Liao, Dawei Guo, Zizheng Guo, Siting Liu, Zhitang Chen, Wenlong Lv, **Yibo Lin** and Bei Yu, "DREAMPlace 4.0: Timing-driven Placement with Momentum-based Net Weighting and Lagrangian-based Refinement", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), 2023. (accepted)
- [J41] Zuodong Zhang, Zizheng Guo, Yibo Lin, Runsheng Wang and Ru Huang, "AVATAR: An Agingand Variation-Aware Dynamic Timing Analyzer for Error-Efficient Computing", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), 2023. (accepted)
- [J40] Binwu Zhu, Xinyun Zhang, **Yibo Lin**, Bei Yu and Martin Wong, "DRC-SG 2.0: Efficient Design Rule Checking Script Generation via Key Information Extraction", ACM Transactions on Design Automation of Electronic Systems (TODAES), 2023. (accepted)
- [J39] Guannan Guo, Tsung-Wei Huang, Yibo Lin, Zizheng Guo, Sushma Yellapragada and Martin Wong, "A GPU-accelerated Framework for Path-based Timing Analysis", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), 2023. (accepted)
- [J38] Zizheng Guo, Tsung-Wei Huang and Yibo Lin, "Accelerating Static Timing Analysis using CPU-GPU Heterogeneous Parallelism", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), 2023. (accepted)
- [J37] Yibo Lin, Avi Ziv and Haoxing Ren, "Introduction to the Special Issue on Machine Learning for CAD/EDA", ACM Transactions on Design Automation of Electronic Systems (TODAES), Mar, 2023.
- [J36] Xinfa Zhang, Zuodong Zhang, Yibo Lin, Zhigang Ji, Runsheng Wang and Ru Huang, "Efficient Aging-Aware Standard Cell Library Characterization Based on Sensitivity Analysis", IEEE Transactions on Circuits and Systems II: Express Briefs, Oct, 2022.
- [J35] Siting Liu, Yuan Pu, Peiyu Liao, Hongzhong Wu, Rui Zhang, Zhitang Chen, Wenlong Lv, Yibo Lin and Bei Yu, "FastGR: Global Routing on CPU-GPU with Heterogeneous Task Graph Scheduler", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Oct, 2022.

- [J34] Zhuomin Chai, Yuxiang Zhao, **Yibo Lin**, Wei Liu, Runsheng Wang and Ru Huang, "CircuitNet: An Open-Source Dataset for Machine Learning Applications in Electronic Design Automation (EDA)", SCIENCE CHINA Information Sciences, Sep. 2022. (accepted)
- [J33] Xiaohan Gao, Haoyi Zhang, Mingjie Liu, Linxiao Shen, David Z. Pan, Yibo Lin, Runsheng Wang and Ru Huang, "Interactive Analog Layout Editing with Instant Placement and Routing Legalization", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Jul, 2022. (accepted)
- [J32] Wei Li, Jialu Xia, Yuzhe Ma, Jialu Li, **Yibo Lin** and Bei Yu, "Adaptive Layout Decomposition with Graph Embedding Neural Networks", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Jan, 2022. (accepted)
- [J31] Zizheng Guo, Mingwei Yang, Tsung-Wei Huang and Yibo Lin, "A Provably Good and Practically Efficient Algorithm for Common Path Pessimism Removal in Large Designs", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Nov, 2021. (accepted)
- [J30] Martin Rapp, Hussam Amrouch, **Yibo Lin**, Bei Yu, David Z. Pan, Marilyn Wolf and Jörg Henkel, "MLCAD: A Survey of Research in Machine Learning for CAD", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Nov, 2021. (accepted)
- [J29] Yibo Lin, Tong Qu, Zongqing Lu, Yajuan Su and Yayi Wei, "Asynchronous Reinforcement Learning Framework and Knowledge Transfer for Net Order Exploration in Detailed Routing", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Oct, 2021.
- [J28] Tsung-Wei Huang, Dian-Lun Lin, Chun-Xun Lin and Yibo Lin, "Taskflow: A Lightweight Parallel and Heterogeneous Task Graph Computing System", IEEE Transactions on Parallel and Distributed Systems (TPDS), Aug, 2021.
- [J27] Yibai Meng, Wuxi Li, Yibo Lin and David Z. Pan, "elfPlace: Electrostatics-based Placement for Large-Scale Heterogeneous FPGAs", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Jan, 2021.
- [J26] Wei Li, Yuzhe Ma, Qi Sun, Zhang Lu, Yibo Lin, Iris Hui-Ru Jiang, Bei Yu and David Z. Pan, "OpenMPL: An Open Source Layout Decomposer", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Dec, 2020.
- [J25] Tsung-Wei Huang, Yibo Lin, Chun-Xun Lin, Guannan Guo and Martin Wong, "Cpp-Taskflow: A General-purpose Parallel Task Programming System at Scale", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Sep, 2020.
- [J24] Hao Chen, Mingjie Liu, Biying Xu, Keren Zhu, Xiyuan Tang, Shaolan Li, **Yibo Lin**, Nan Sun and David Z. Pan, "MAGICAL: An Open-Source Fully Automated Analog IC Layout System from Netlist to GDSII", IEEE Design & Test, Sep, 2020.
- [J23] Jing Chen, Mohamed Baker Alawieh, Yibo Lin, Maolin Zhang, Jun Zhang, Yufeng Guo and David Z. Pan, "Automatic Selection of Structure Parameters of Silicon on Insulator Lateral Power Device Using Bayesian Optimization", IEEE Electron Device Letters (EDL), Aug, 2020.

- [J22] Ying Chen, Yibo Lin, Rui Chen, Lisong Dong, Ruixuan Wu, Tianyang Gai, Le Ma, Yajuan Su and Yayi Wei, "EUV Multilayer Defect Characterization via Cycle-Consistent Learning", Optics Express, Jun, 2020.
- [J21] Yibo Lin, Zixuan Jiang, Jiaqi Gu, Wuxi Li, Shounak Dhar, Haoxing Ren, Brucek Khailany and David Z. Pan, "DREAMPlace: Deep Learning Toolkit-Enabled GPU Acceleration for Modern VLSI Placement", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Jun, 2020. (Best Paper Award)
- [J20] Junzhe Cai, Changhao Yan, Yudong Tao, **Yibo Lin**, Sheng-Guo Wang, David Z. Pan and Xuan Zeng, "A Novel and Unified Full-chip CMP Model Aware Dummy Fill Insertion Framework with SQP-Based Optimization Method", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Jun, 2020.
- [J19] Mohamed Baker Alawieh, Yibo Lin, Zaiwei Zhang, Meng Li, Qixing Huang and David Z. Pan, "GAN-SRAF: Sub-Resolution Assist Feature Generation using Generative Adversarial Networks", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), May, 2020.
- [J18] Yibo Lin, Wuxi Li, Jiaqi Gu, Haoxing Ren, Brucek Khailany and David Z. Pan, "ABCDPlace: Accelerated Batch-based Concurrent Detailed Placement on Multi-threaded CPUs and GPUs", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Feb, 2020.
- [J17] Jing Chen, Mohamed Baker Alawieh, Yibo Lin, Maolin Zhang, Jun Zhang, Yufeng Guo and David Z. Pan, "Powernet: SOI Lateral Power Device Breakdown Prediction With Deep Neural Networks", IEEE Access, Feb, 2020.
- [J16] Ying Chen, Yibo Lin, Lisong Dong, Tianyang Gai, Rui Chen, Yajuan Su, Yayi Wei and David Z. Pan, "SoulNet: Ultrafast Optical Source Optimization Utilizing Generative Neural Networks for Advanced Lithography", Journal of Micro/Nanolithography, MEMS, and MOEMS (JM3), Nov, 2019.
- [J15] Yibo Lin, Meng Li, Yuki Watanabe, Taiki Kimura, Tetsuaki Matsunawa, Shigeki Nojima and David Z. Pan, "Data Efficient Lithography Modeling with Transfer Learning and Active Data Selection", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Oct, 2019.
- [J14] Ying Chen, Yibo Lin, Tianyang Gai, Yajuan Su, Yayi Wei and David Z. Pan, "Semi-Supervised Hotspot Detection with Self-Paced Multi-Task Learning", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Apr, 2019.
- [J13] Jing Chen, Yibo Lin, Yufeng Guo, Maolin Zhang, Mohamed Baker Alawieh and David Z. Pan, "Lithography Hotspot Detection Using a Double Inception Module Architecture", Journal of Micro/Nanolithography, MEMS, and MOEMS (JM3), Mar, 2019.
- [J12] Yibo Lin, Bei Yu, Meng Li and David Z. Pan, "Layout Synthesis for Topological Quantum Circuits with 1D and 2D Architectures", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Aug, 2018.

- [J11] Meng Li, Bei Yu, Yibo Lin, Xiaoqing Xu, Wuxi Li and David Z Pan, "A practical split manufacturing framework for trojan prevention via simultaneous wire lifting and cell insertion", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Jul, 2018.
- [J10] Xiaoqing Xu, Yibo Lin, Meng Li, Tetsuaki Matsunawa, Shigeki Nojima, Chikaaki Kodama, Toshiya Kotani and David Z. Pan, "Subresolution Assist Feature Generation With Supervised Data Learning", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Jun, 2018.
- [J9] Yibo Lin, Bei Yu, Xiaoqing Xu, Jhih-Rong Gao, Natarajan Viswanathan, Wen-Hao Liu, Zhuo Li, Charles J Alpert and David Z. Pan, "MrDP: Multiple-row detailed placement of heterogeneous-sized cells for advanced nodes", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Jun, 2018.
- [J8] Wuxi Li, Yibo Lin, Meng Li, Shounak Dhar and David Z. Pan, "UTPlaceF 2.0: A High-Performance Clock-Aware FPGA Placement Engine", ACM Transactions on Design Automation of Electronic Systems (TODAES), Jun, 2018.
- [J7] Yibo Lin, Bei Yu and David Z. Pan, "High performance dummy fill insertion with coupling and uniformity constraints", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Sep, 2017.
- [J6] Yibo Lin, Bei Yu, Biying Xu and David Z. Pan, "Triple patterning aware detailed placement toward zero cross-row middle-of-line conflict", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Jul, 2017.
- [J5] Xiaoqing Xu, Yibo Lin, Meng Li, Jiaojiao Ou, B. Cline and D. Z. Pan, "Redundant local-Loop insertion for unidirectional routing", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Jul, 2017.
- [J4] Yibo Lin, Bei Yu, Yi Zou, Zhuo Li, Charles J Alpert and David Z. Pan, "Stitch aware detailed placement for multiple e-beam lithography", Integration, the VLSI Journal, Jun, 2017. (Best Paper Award)
- [J3] Yibo Lin, Xiaoqing Xu, Bei Yu, Ross Baldick and David Z. Pan, "Triple/quadruple patterning layout decomposition via linear programming and iterative rounding", Journal of Micro/Nanolithography, MEMS, and MOEMS (JM3), Jun, 2017.
- [J2] Bei Yu, Xiaoqing Xu, Subhendu Roy, Yibo Lin, Jiaojiao Ou and David Z. Pan, "Design for manufacturability and reliability in extreme-scaling VLSI", Science China Information Sciences, May, 2016. (Invited paper)
- [J1] Bei Yu, Xiaoqing Xu, Jhih-Rong Gao, Yibo Lin, Zhuo Li, Charles Alpert and David Z. Pan, "Methodology for standard cell compliance and detailed placement for triple patterning lithography", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), May, 2015.

会议论文

[C80] Zizheng Guo, Zuodong Zhang, Xun Jiang, Wuxi Li, Yibo Lin, Runsheng Wang and Ru Huang,

- "General-Purpose Gate-Level Simulation with Partition-Agnostic Parallelism", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jul 9-13, 2023.
- [C79] Qipan Wang, Ping Liu, Ligguo Jiang, Mingjie Liu, Yibo Lin, Runsheng Wang and Ru Huang, "MTL-Designer: An Integrated Flow for Analysis and Synthesis of Microstrip Transmission Line", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jul 9-13, 2023.
- [C78] Peiyu Liao, Hongduo Liu, Yibo Lin, Bei Yu and Martin Wong, "On a Moreau Envelope Wirelength Model for Analytical Global Placement", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jul 9-13, 2023.
- [C77] Siting Liu, Ziyi Wang, Fangzhou Liu, Yibo Lin, Bei Yu and Martin Wong, "Concurrent Sign-off Timing Optimization via Deep Steiner Points Refinement", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jul 9-13, 2023.
- [C76] Su Zheng, Lancheng Zou, Siting Liu, Yibo Lin, Bei Yu and Martin Wong, "Mitigating Distribution Shift for Congestion Optimization in Global Placement", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jul 9-13, 2023.
- [C75] Yu Zhang, Yifan Chen, Zhonglin Xie, Hong Xu, Zaiwen Wen, Yibo Lin and Bei Yu, "LRSDP: Low-Rank SDP for Triple Patterning Lithography Layout Decomposition", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jul 9-13, 2023.
- [C74] Yuxiang Zhao, Zhuomin Chai, Yibo Lin, Runsheng Wang and Ru Huang, "HybridNet: Dual-Branch Fusion of Geometrical and Topological Views for VLSI Congestion Prediction", IEEE/ACM International Symposium of EDA (ISEDA), Nanjing, China, May 8-11, 2023.
- [C73] Haoyi Zhang, Xiaohan Gao, Haoyang Luo, Jiahao Song, Xiyuan Tang, Junhua Liu, Yibo Lin, Runsheng Wang and Ru Huang, "SAGERoute: Synergistic Analog Routing Considering Geometric and Electrical Constraints with Manual Design Compatibility", IEEE/ACM Proceedings Design, Automation and Test in Eurpoe (DATE), Antwerp, Belgium, Apr 17-19, 2023. (Best Paper Award)
- [C72] Yifan Chen, Jing Mai, Xiaohan Gao, Muhan Zhang and Yibo Lin, "MacroRank: Ranking Macro Placement Solutions Leveraging Translation Equivariancy", IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), Tokyo, Japan, Jan 16-19, 2023.
- [C71] Jiarui Wang, Jing Mai, Zhixiong Di and Yibo Lin, "A Robust FPGA Router with Concurrent Intra-CLB Rerouting", IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), Tokyo, Japan, Jan 16-19, 2023.
- [C70] Junchi Yan, Xianglong Lyu, Ruoyu Cheng and **Yibo Lin**, "Towards Machine Learning for Placement and Routing in Chip Design: a Methodological Overview", arXiv preprint, 2022.
- [C69] Zizheng Guo, Feng Gu and Yibo Lin, "GPU-Accelerated Rectilinear Steiner Tree Generation", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), San Diego, CA, Nov 01-03, 2022.
- [C68] Qipan Wang, Xiaohan Gao, Yibo Lin, Runsheng Wang and Ru Huang, "DeePEB: A Neural Partial Differential Equation Solver for Post Exposure Baking Simulation in Lithography",

- IEEE/ACM International Conference on Computer-Aided Design (ICCAD), San Diego, CA, Nov 01-03, 2022. (Best Paper Nomination)
- [C67] Yibo Lin, Xiaohan Gao, Haoyi Zhang, Runsheng Wang and Ru Huang, "Intelligent and Interactive Analog Layout Design Automation", IEEE International Conference on Solid-State and Integrated Circuit Technology (ICSICT), Nanjing, China, Oct 25-28, 2022. (Invited paper)
- [C66] Binwu Zhu, Xinyun Zhang, Yibo Lin, Bei Yu and Martin Wong, "Efficient Design Rule Checking Script Generation via Key Information Extraction", ACM/IEEE Workshop on Machine Learning for CAD (MLCAD), Snowbird, Utah, Sep 12-13, 2022.
- [C65] Jing Mai, Yibai Meng, Zhixiong Di and Yibo Lin, "Multi-Electrostatic FPGA Placement Considering SLICEL-SLICEM Heterogeneity and Clock Feasibility", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jul 10-14, 2022.
- [C64] Zizheng Guo and Yibo Lin, "Differentiable-Timing-Driven Global Placement", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jul 10-14, 2022.
- [C63] Zizheng Guo, Mingjie Liu, Jiaqi Gu, Shuhan Zhang, David Z. Pan and Yibo Lin, "A Timing Engine Inspired Graph Neural Network Model for Pre-Routing Slack Prediction", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jul 10-14, 2022.
- [C62] Zuodong Zhang, Zizheng Guo, Yibo Lin, Runsheng Wang and Ru Huang, "AVATAR: An Agingand Variation-Aware Dynamic Timing Analyzer for Application-based DVAFS", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jul 10-14, 2022.
- [C61] Bowen Wang, Guibao Shen, Dong Li, Jianye Hao, Wulong Liu, Yu Huang, Hongzhong Wu, Yibo Lin, Guangyong Chen and Pheng Ann Heng, "LHNN: Lattice Hypergraph Neural Network for VLSI Congestion Prediction", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jul 10-14, 2022.
- [C60] Zuodong Zhang, Zizheng Guo, Yibo Lin, Runsheng Wang and Ru Huang, "EventTimer: Fast and Accurate Event-Based Dynamic Timing Analysis", IEEE/ACM Proceedings Design, Automation and Test in Europe (DATE), Antwerp, Belgium, Mar 14-23, 2022.
- [C59] Siting Liu, Peiyu Liao, Zhitang Chen, Wenlong Lv, Yibo Lin and Bei Yu, "FastGR: Global Routing on CPU-GPU with Heterogeneous Task Graph Scheduler", IEEE/ACM Proceedings Design, Automation and Test in Eurpoe (DATE), Antwerp, Belgium, Mar 14-23, 2022. (Best Paper Award)
- [C58] Peiyu Liao, Siting Liu, Zhitang Chen, Wenlong Lv, Yibo Lin and Bei Yu, "DREAMPlace 4.0: Timing-driven Global Placement with Momentum-based Net Weighting", IEEE/ACM Proceedings Design, Automation and Test in Eurpoe (DATE), Antwerp, Belgium, Mar 14-23, 2022.
- [C57] Haoyu Yang, Kit Fung, Yuxuan Zhao, Yibo Lin and Bei Yu, "Mixed-Cell-Height Legalization on CPU-GPU Heterogeneous Systems", IEEE/ACM Proceedings Design, Automation and Test in Eurpoe (DATE), Antwerp, Belgium, Mar 14-23, 2022.
- [C56] Xun Jiang, Yibo Lin and Zhongfeng Wang, "FPGA-Accelerated Maze Routing Kernel for VLSI Designs", IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), Virtual Conference, Jan 17-20, 2022.

- [C55] Kexing Zhou, Zizheng Guo, Tsung-Wei Huang and Yibo Lin, "Efficient Critical Paths Search Algorithm using Mergeable Heap", IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), Virtual Conference, Jan 17-20, 2022.
- [C54] Zizheng Guo, Tsung-Wei Huang and Yibo Lin, "A Provably Good and Practically Efficient Algorithm for Common Path Pessimism Removal in Large Designs", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Dec 05-09, 2021.
- [C53] Guannan Guo, Tsung-Wei Huang, Yibo Lin and Martin Wong, "GPU-accelerated Path-based Timing Analysis", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Dec 05-09, 2021.
- [C52] Zizheng Guo, Jing Mai and Yibo Lin, "Ultrafast CPU/GPU Kernels for Density Accumulation in Placement", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Dec 05-09, 2021.
- [C51] Xiaohan Gao, Mingjie Liu, David Z. Pan and Yibo Lin, "Interactive Analog Layout Editing with Instant Placement Legalization", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Dec 05-09, 2021.
- [C50] Zizheng Guo, Tsung-Wei Huang and Yibo Lin, "HeteroCPPR: Accelerating Common Path Pessimism Removal with Heterogeneous CPU-GPU Parallelism", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), Virtual Conference, Nov 01-04, 2021.
- [C49] Guannan Guo, Tsung-Wei Huang, Yibo Lin and Martin Wong, "GPU-accelerated Critical Path Generation with Path Constraints", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), Virtual Conference, Nov 01-04, 2021.
- [C48] Tong Qu, Yibo Lin, Tianyang Gai, Xiaojing Su, Shuhan Wang, Bojie Ma, Yajuan Su and Yayi Wei, "Litho-Aware Redundant Local-Loop Insertion Framework With Convolutional Neural Network", Proceedings of SPIE, San Jose, CA, Sep 27, 2021.
- [C47] Tong Qu, Yibo Lin, Zongqing Lu, Yajuan Su and Yayi Wei, "Asynchronous Reinforcement Learning Framework for Net Order Exploration in Detailed Routing", IEEE/ACM Proceedings Design, Automation and Test in Eurpoe (DATE), Virtual Conference, Feb 01-05, 2021.
- [C46] Siting Liu, Qi Sun, Peiyu Liao, Yibo Lin and Bei Yu, "Global Placement with Deep Learning-Enabled Explicit Routability Optimization", IEEE/ACM Proceedings Design, Automation and Test in Europe (DATE), Virtual Conference, Feb 01-05, 2021.
- [C45] Hongjia Li, Mengshu Sun, Tianyun Zhang, Olivia Chen, Nobuyuki Yoshikawa, Bei Yu, Yanzhi Wang and **Yibo Lin**, "Towards AQFP-Capable Physical Design Automation", IEEE/ACM Proceedings Design, Automation and Test in Europe (DATE), Virtual Conference, Feb 01-05, 2021.
- [C44] Xiaohan Gao, Chenhui Deng, Mingjie Liu, Zhiru Zhang, David Z. Pan and **Yibo Lin**, "Layout Symmetry Annotation for Analog Circuits with Graph Neural Networks", IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), Tokyo, Japan, Jan 18-21, 2021.
- [C43] Yibo Lin, "Deep Learning for Mask Synthesis and Verification: A Survey", IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), Tokyo, Japan, Jan 18-21, 2021. (Invited paper)

- [C42] Jiaqi Gu, Zixuan Jiang, Yibo Lin and David Z. Pan, "DREAMPlace 3.0: Multi-Electrostatics Based Robust VLSI Placement with Region Constraints", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), Nov 2-5, 2020.
- [C41] Zizheng Guo, Tsung-Wei Huang and Yibo Lin, "GPU-Accelerated Static Timing Analysis", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), Nov 2-5, 2020.
- [C40] Yibo Lin, "GPU Acceleration in VLSI Back-end Design: Overview and Case Studies", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), Nov 2-5, 2020. (Invited tutorial)
- [C39] Wei Ye, Mohamed Baker Alawieh, Yuki Watanabe, Shigeki Nojima, Yibo Lin and David Z. Pan, "TEMPO: Fast Mask Topography Effect Modeling with Deep Learning", ACM International Symposium on Physical Design (ISPD), Taipei, Taiwan, Sep 20-23, 2020. (Best Paper Award)
- [C38] Wei Li, Jialu Xia, Yuzhe Ma, Jialu Li, Yibo Lin and Bei Yu, "Adaptive Layout Decomposition with Graph Embedding Neural Networks", ACM/IEEE Design Automation Conference (DAC), San Francisco, Jul 19-23, 2020.
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- [C36] Rachel Selina Rajarathnam, Yibo Lin, Yier Jin and David Z. Pan, "ReGDS: A Reverse Engineering Framework from GDSII to Gate-level Netlist", IEEE International Workshop on Hardware-Oriented Security and Trust (HOST), San Jose, CA, May 4, 2020.
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- [C28] Yibo Lin, Shounak Dhar, Wuxi Li, Haoxing Ren, Brucek Khailany and David Z. Pan, "DREAM-Place: Deep Learning Toolkit-Enabled GPU Acceleration for Modern VLSI Placement", ACM/IEEE Design Automation Conference (DAC), Las Vegas, NV, Jun 2-6, 2019. (Best Paper Award)
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专利

- [P10] **林亦波**, 郭资政, "一种可微分时序驱动的芯片布局优化方法", Chinese Patent, CN202210793017.1, Aug 29, 2022. (submitted)
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特邀报告

国际会议特邀报告

- [T6] "Timing Analysis and Optimization on Heterogeneous CPU-GPU Platforms", in International Workshop on Logic & Synthesis (IWLS), Virtual, Jul 18-21, 2022.
- [T5] "DREAMPlace: Deep Learning Toolkit-Enabled GPU Acceleration for Modern VLSI Placement", in ACM/IEEE Design Automation WebiNar (DAWN), Virtual, Apr 11-12, 2022.
- [T4] "DREAMPlace 3.X: Exploring Advanced Constraints and Multi-GPU Acceleration", in China Semiconductor Technology International Conference (CSTIC), Shanghai, China, Mar 14-15, 2021.
- [T3] "Deep Learning for Mask Synthesis and Verification: A Survey", in IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), Tokyo, Japan, Jan 18-21, 2021.
- [T2] "GPU Acceleration in VLSI Back-end Design: Overview and Case Studies", in IEEE/ACM International Conference on Computer-Aided Design (ICCAD), Virtual, Nov 2-5, 2020.
- [T1] "DREAMPlace 2.0: Open-Source GPU-Accelerated Global and Detailed Placement for Large-Scale VLSI Designs", in China Semiconductor Technology International Conference (CSTIC), Shanghai, China, Jun 26, 2020.

国内会议特邀报告

- [T7] "A Timing Engine Inspired Graph Neural Network Model for Pre-Routing Slack Prediction", CCF Chip 芯片大会, 南京, Jul 29-31, 2022.
- [T6] "Exploring AI-assisted Optimization Opportunities in Placement and Routing", 华为 Strategy and Technology Workshop (STW), 深圳, Oct 14-16, 2021.
- [T5] "A Provably Good and Practically Efficient Algorithm for Common Path Pessimism Removal in Static Timing Analysis", ChinaDA, 北京, Jul 10-11, 2021.
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