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

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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"

上海交通大学　　　　　　　　　　　　　　　　　　　　　　　*2009 年 9 月 – 2013 年 6 月*
学士学位，微电子学院

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

首届最佳审稿人奖	ICCAD	2023 年
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.

- ACM Great Lakes Symposium on VLSI (GLVLSI): 2024.

- 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.

出版物

会议论文

[C100] Tsung-Yi Ho, Sadaf Khan, Jinwei Liu, Yi Liu, Zhengyuan Shi, Ziyi Wang, Qiang Xu, Evangeline F.Y. Young, Bei Yu, Ziyang Zheng, Binwu Zhu, Keren Zhu, Yiqi Che, Yun Liang, **Yibo Lin**, Guojie Luo, Guangyu Sun, Runsheng Wang, Xinming Wei, Chenhao Xue, Haoyi Zhang, Zuodong Zhang, Yuxiang Zhao, Sunan Zou, Lei Chen, Yu Huang, Min Li, Dimitrios Tsaras, Mingxuan Yuan, Hui-Ling Zhen, Zhufei Chu, Wenji Fang, Xingquan Li and Zhiyao Xie, "The Dawn of AI-Native EDA: Promises and Challenges of Large Circuit Models", arXiv preprint, 2024.

[C99] Jiarui Wang, Xun Jiang and **Yibo Lin**, "Top-Level Routing for Multiply-Instantiated Blocks with Topology Hashing", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jun, 2024. (accepted)

[C98] Yufan Du, Zizheng Guo, Xun Jiang, Zhuomin Chai, Yuxiang Zhao, **Yibo Lin**, Runsheng Wang and Ru Huang, "PowPrediCT: Cross-Stage Power Prediction with Circuit-Transformation-Aware Learning", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jun, 2024. (accepted)

[C97] Haoyi Zhang, Jiahao Song, Xiaohan Gao, Xiyuan Tang, **Yibo Lin**, Runsheng Wang and Ru Huang, "EasyACIM: An End-to-End Automated Analog CIM with Synthesizable Architecture and Agile Design Space Exploration", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jun, 2024. (accepted)

[C96] Zichen Kong, Xiyuan Tang, Wei Shi, Yiheng Du, **Yibo Lin** and Yuan Wang, "PVTSizing: A TuRBO-RL-Based Batch-Sampling Optimization Framework for PVT-Robust Analog Circuit Synthesis", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jun, 2024. (accepted)

[C95] Yuan Pu, Fangzhou Liu, Yu Zhang, Zhuolun He, Kai-Yuan Chao, **Yibo Lin** and Bei Yu, "Lesyn: Placement-aware Logic Resynthesis for Non-Integer Multiple-Cell-Height Designs", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jun, 2024. (accepted)

[C94] Wan Luan Lee, Dian-Lun Lin, Tsung-Wei Huang, Shui Jiang, Tsung-Yi Ho, **Yibo Lin** and Bei Yu, "G-kway: Multilevel GPU-Accelerated k-way Graph Partitioner", ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, Jun, 2024. (accepted)

[C93] Xun Jiang, Zhuomin Chai, Yuxiang Zhao, **Yibo Lin**, Runsheng Wang and Ru Huang, "Circuit-Net 2.0: An Advanced Dataset for Promoting Machine Learning Innovations in Realistic Chip Design Environment", International Conference on Learning Representations (ICLR), Vienna, Austria, May 7-11, 2024. (accepted)

[C92] Zizheng Guo, Tsung-Wei Huang, Jin Zhuo, Cheng Zhuo, **Yibo Lin**, Runsheng Wang and Ru Huang, "Heterogeneous Static Timing Analysis with Advanced Delay Calculator", IEEE/ACM Proceedings Design, Automation and Test in Eurpoe (DATE), Valencia, Spain, Mar 24-28, 2024. (accepted)

[C91] Haoyi Zhang, Xiaohan Gao, Zilong Shen, Jiahao Song, Xiaoxu Cheng, Xiyuan Tang, **Yibo Lin**, Runsheng Wang and Ru Huang, "SAGERoute 2.0: Hierarchical Analog and Mixed Signal Routing Considering Versatile Routing Scenarios", IEEE/ACM Proceedings Design, Automation and Test in Eurpoe (DATE), Valencia, Spain, Mar 24-28, 2024. (accepted)

[C90] Yuan Pu, Tinghuan Chen, Zhuolun He, Chen Bai, Haisheng Zheng, **Yibo Lin** and Bei Yu, "IncreMacro: Incremental Macro Placement Refinement", ACM International Symposium on Physical Design (ISPD), Taipei, Mar 12-15, 2024. (**Best Paper Nomination**)

[C89] Yu Zhang, Yuan Pu, Fangzhou Liu, Peiyu Liao, Kaiyuan Chao, Keren Zhu, **Yibo Lin** and Bei Yu, "Multi-Electrostatics Based Placement for Non-Integer Multiple-Height Cells", ACM International Symposium on Physical Design (ISPD), Taipei, Mar 12-15, 2024.

[C88] Siting Liu, Jiaxi Jiang, Zhuolun He, Ziyi Wang, **Yibo Lin** and Bei Yu, "Routing-aware Legal Hybrid Bonding Terminal Assignment for 3D Face-to-Face Stacked ICs", ACM International Symposium on Physical Design (ISPD), Taipei, Mar 12-15, 2024.

[C87] Cheng-Hsiang Chiu, Zhicheng Xiong, Zizheng Guo, Tsung-Wei Huang and **Yibo Lin**, "An Efficient Task-parallel Pipeline Programming Framework", International Conference on High-Performance Computing in Asia-Pacific Region (HPC Asia), Nagoya, Japan, Jan, 2024. (accepted)

[C86] Jing Mai, Jiaru Wang, Zhixiong Di, Guojie Luo, Yun Liang and **Yibo Lin**, "OpenPARF: An Open-Source Placement and Routing Framework for Large-Scale Heterogeneous FPGAs with Deep Learning Toolkit", International Conference on ASIC (ASICON), Nanjing, China, Oct, 2023. (**Invited paper**)

[C85] Yifan Chen, Zaiwen Wen, Yun Liang and **Yibo Lin**, "Stronger Mixed-Size Placement Backbone Considering Second-Order Information", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), San Francisco, CA, Oct, 2023.

[C84] Xun Jiang, Zizheng Guo, Zhuomin Chai, Yuxiang Zhao, **Yibo Lin**, Runsheng Wang and Ru Huang, "Accelerating Routability and Timing Optimization with Open-Source AI4EDA Dataset CircuitNet and Heterogeneous Platforms", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), San Francisco, CA, Oct, 2023. (**Invited paper**)

[C83] Kexing Zhou, Yun Liang, **Yibo Lin**, Runsheng Wang and Ru Huang, "Khronos: Fusing Memory Access for Improved Hardware RTL Simulation", IEEE/ACM International Symposium on Microarchitecture (MICRO), Toronto, Canada, Oct, 2023.

[C82] 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.

[C81] 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.

[C80] 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.

[C79] 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.

[C78] 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.

[C77] 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.

[C76] 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.

[C75] Haoyi Zhang, Xiaohan Gao, **Yibo Lin**, Runsheng Wang and Ru Huang, "Multi-Scenario Analog and Mixed-Signal Circuit Routing with Agile Human Interaction", IEEE/ACM International Symposium of EDA (ISEDA), Nanjing, China, May 8-11, 2023.

[C74] 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**)

[C73] Zuodong Zhang, Meng Li, **Yibo Lin**, Runsheng Wang and Ru Huang, "READ: Reliability-Enhanced Accelerator Dataflow Optimization using Critical Input Pattern Reduction", IEEE/ACM Proceedings Design, Automation and Test in Eurpoe (DATE), Antwerp, Belgium, Apr 17-19, 2023.

[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 Aging- and 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 Eurpoe (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 Eurpoe (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 Eurpoe (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.

[C37] **Yibo Lin**, David Z. Pan, Haoxing Ren and Brucek Khailany, "DREAMPlace 2.0: Open-Source GPU-Accelerated Global and Detailed Placement for Large-Scale VLSI Designs", China Semiconductor Technology International Conference (CSTIC), Shanghai, China, Jun, 2020. (**Invited paper**)

[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.

[C35] Mingjie Liu, Wuxi Li, Keren Zhu, Biying Xu, **Yibo Lin**, Linxiao Shen, Xiyuan Tang, Nan Sun and David Z. Pan, "S3DET: Detecting System Symmetry Constraints for Analog Circuits with Graph Similarity", IEEE/ACM Asia and South Pacific Design Automation Conference (AS-PDAC), Jan 13-16, 2020. (**Best Paper Nomination**)

[C34] Mohamed Baker Alawieh, Wuxi Li, **Yibo Lin**, Love Singhal, Mahesh Iyer and David Z. Pan, "High-Definition Routing Congestion Prediction for Large-Scale FPGAs", IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), Jan 13-16, 2020.

[C33] Wuxi Li, **Yibo Lin** and David Z. Pan, "elfPlace: Electrostatics-based Placement for Large-Scale Heterogeneous FPGAs", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), Westminster, CO, Nov 4-7, 2019.

[C32] Keren Zhu, Mingjie Liu, **Yibo Lin**, Biying Xu, Shaolan Li, Xiyuan Tang, Nan Sun and David Z. Pan, "GeniusRoute: A New Analog Routing Paradigm Using Generative Neural Network Guidance", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), Westminster, CO, Nov 4-7, 2019.

[C31] Chengyue Gong, Zixuan Jiang, Dilin Wang, **Yibo Lin**, Qiang Liu and David Z. Pan, "Mixed Precision Neural Architecture Search for Energy Efficient Deep Learning", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), Westminster, CO, Nov 4-7, 2019.

[C30] Biying Xu, Keren Zhu, Mingjie Liu, **Yibo Lin**, Shaolan Li, Xiyuan Tang, Nan Sun and David Z. Pan, "MAGICAL: Toward Fully Automated Analog IC Layout Leveraging Human and Machine Intelligence", IEEE/ACM International Conference on Computer-Aided Design (ICCAD), Westminster, CO, Nov 4-7, 2019. (**Invited paper**)

[C29] Wei Li, Yuzhe Ma, Qi Sun, **Yibo Lin**, Iris Hui-Ru Jiang, Bei Yu and David Z Pan, "OpenMPL: An Open Source Layout Decomposer", International Conference on ASIC (ASICON), Chongqing, China, Oct, 2019. (**Invited paper**)

[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**)

[C27] Wei Ye, Mohamed Baker Alawieh, **Yibo Lin** and David Z. Pan, "LithoGAN: End-to-End Lithography Modeling with Generative Adversarial Networks", ACM/IEEE Design Automation Conference (DAC), Las Vegas, NV, Jun 2-6, 2019. (**Best Paper Nomination**)

[C26] Biying Xu, **Yibo Lin**, Xiyuan Tang, Shaolan Li, Linxiao Shen, Nan Sun and David Z. Pan, "Well-GAN: Generative-Adversarial-Network-Guided Well Generation for Analog/Mixed-Signal Circuit Layout", ACM/IEEE Design Automation Conference (DAC), Las Vegas, NV, Jun 2-6, 2019.

[C25] Mohamed Baker Alawieh, **Yibo Lin**, Zaiwei Zhang, Meng Li, Qixing Huang and David Z. Pan, "GAN-SRAF: Sub-Resolution Assist Feature Generation Using Conditional Generative Adversarial Networks", ACM/IEEE Design Automation Conference (DAC), Las Vegas, NV, Jun 2-6, 2019.

[C24] **Yibo Lin**, Zhao Song and Lin F. Yang, "Towards a Theoretical Understanding of Hashing-Based Neural Nets", International Conference on Artificial Intelligence and Statistics (AISTATS), Okinawa, Japan, Apr 16-18, 2019.

[C23] Biying Xu, Shaolan Li, Chak-Wa Pui, Derong Liu, Linxiao Shen, **Yibo Lin**, Nan Sun and David Z. Pan, "Device Layer-Aware Analytical Placement for Analog Circuits", ACM International Symposium on Physical Design (ISPD), San Francisco, CA, Apr 14-17, 2019. (**Best Paper Nomination**)

[C22] Wei Ye, Mohamed Baker Alawieh, Meng Li, **Yibo Lin** and David Z. Pan, "Litho-GPA: Gaussian Process Assurance for Lithography Hotspot Detection", IEEE/ACM Proceedings Design, Automation and Test in Eurpoe (DATE), Florence, Italy, Mar 25-29, 2019.

[C21] 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/ACM Asia and South Pacific Design Automation Conference (ASPDAC), Tokyo, Japan, Jan 21-24, 2019.

[C20] Wei Ye, Mohamed Baker Alawieh, **Yibo Lin** and David Z. Pan, "Tackling Signal Electromigration with Learning-Based Detection and Multistage Mitigation", IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), Tokyo, Japan, Jan 21-24, 2019.

[C19] Wei Ye, **Yibo Lin**, Meng Li, Qiang Liu and David Z. Pan, "LithoROC: Lithography Hotspot Detection with Explicit ROC Optimization", IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), Tokyo, Japan, Jan 21-24, 2019. (**Invited paper**)

[C18] **Yibo Lin**, Mohamed Baker Alawieh, Wei Ye and David Z. Pan, "Machine Learning for Yield Learning and Optimization", IEEE International Test Conference (ITC), Phoenix, Arizona, Oct, 2018. (**Invited paper**)

[C17] Jiong Zhang, **Yibo Lin**, Zhao Song and Inderjit S Dhillon, "Learning Long Term Dependencies via Fourier Recurrent Units", International Conference on Machine Learning (ICML), Stockholm, Sweden, Jun 10-15, 2018.

[C16] **Yibo Lin**, Yuki Watanabe, Taiki Kimura, Tetsuaki Matsunawa, Shigeki Nojima, Meng Li and David Z. Pan, "Data Efficient Lithography Modeling with Residual Neural Networks and Transfer Learning", ACM International Symposium on Physical Design (ISPD), Monterey, CA, Mar 25-28, 2018.

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