Jing Mai

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Bio

I am a second-year Ph.D. student in the Department of Computer Science at Peking University associated with the Center for Energy-Efficient Computing and Applications (CECA). I am a member of the *PKU-IDEA Lab*, advised by *Prof. Yibo Lin*. Previously, I received the B.S. degree in Computer Science and Technology from Peking University in 2021. My research focuses are machine learning-assisted EDA; my broader interests include MLSys, concurrency and probabilistic modeling.

Education

Ph.D. in Computer Science **Sept. 2021 – Present**
Center for Energy-efficient Computing and Applications (CECA), Peking University *Beijing, China*
Advisor: Prof. Yibo Lin

B.S. in Computer Science and Technology **Sept. 2017 – June 2021**
School of Electronics Engineering and Computer Science (EECS), Peking University *Beijing, China*

Publications

(* denotes alphabetical ordering or equal contribution)

Refereed Conference Papers

[C1] Jiarui Wang, **Jing Mai**, Zhixiong Di, Yibo Lin. *A Robust FPGA Router with Concurrent Intra-CLB Rerouting. 28th Asia and South Pacific Design Automation Conference (**ASP-DAC**)*, 2023.

[C2] Yifan Chen, **Jing Mai**, Xiaohan Gao, Muhan Zhang, Yibo Lin. *MacroRank: Ranking Macro Placement Solutions Leveraging Translation Equivariancy. 28th Asia and South Pacific Design Automation Conference (**ASP-DAC**)*, 2023.

[C3] **Jing Mai**, Yibai Meng, Zhixiong Di, Yibo Lin. *Multi-Electrostatic FPGA Placement Considering SLICEL-SLICEM Heterogeneity and Clock Feasibility. 59th ACM/IEEE Design Automation Conference (**DAC**)*, 2022.

[C4] **Jing Mai***, Zizheng Guo*, Yibo Lin. *Ultrafast CPU/GPU Kernels for Density Accumulation in Placement. 58th ACM/IEEE Design Automation Conference (**DAC**)*, 2021.

Journal Papers

[J1] Yihua Cheng, Zejia Fan, **Jing Mai**, Yifan Wu, Pengcheng Xu, Yuxuan Yan, Zhenxin Fu, Yun Liang. *Critique of "Planetary Normal Mode Computation: Parallel Algorithms, Performance, and Reproducibility" by SCC Team From Peking University. IEEE Transactions on Parallel and Distributed Systems(**IEEE Trans Parallel Distrib Syst**)*, 2021.

Book Chapters

[B1] 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**)

Research Experiences

Chinese University of Hong Kong (CUHK) **July 2020 – Aug 2020**
Summer Intern, co-advised by Prof. Yibo Lin and Prof. Bei Yu *Shenzhen, China*
Topics: Electrostatics-Based global placement for FPGAs

Honors and Awards

- Industry Contribution Award, *DACS Department* — April 2023
- The 3rd EDA Elite Challenge (Second Prize) — Dec 2021
- Honors for Outstanding Undergraduate Graduates in Beijing (top 1%) — May 2021
- Beijing Challenge Cup Competition (Second Prize) — May 2021
- Xiaomi Scholarship, *Peking University* — Dec 2020
- Honors for Merit Student, *Peking University* (top 5%) — Dec 2019, Dec 2020
- Huawei Scholarship, *Peking University* — Dec 2019
- Honors for Outstanding Academic Performance, *Peking University* — Dec 2018
- The 43rd ACM-ICPC Asia Regional Competition (Gold Award) — Nov 2018

Teaching and Mentoring Experience

- **Teaching Assistant** – *Optimization and Machine Learning in VLSI Design Automation*, Peking University — 2022

Skills

Programming Languages and Softwares
C/C++, Python, Java, Pytorch, Tensorflow, LaTeX, Git, CUDA, Docker, Data Analysis/Visualization(Pandas)
Web Development
HTML5, JavaScript
EDA Tools
Xilinx Vivado
Languages
Mandarin, Cantonese, English, Japanese