

Jiawei Liu

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<https://scholar.google.com/citations?user=ufius3MAAAAJ>



Research Interests

AI-Native Electronic Design Automation (10 papers), Graph Machine Learning (19 papers)

Education

The Chinese University of Hong Kong	2025.09 - Present
Department of Computer Science and Engineering, Postdoc	Hongkong
Beijing University of Posts and Telecommunications	2020.09 - 2025.06
Computer Science and Technology, PhD	Beijing
Beijing University of Posts and Telecommunications	2016.08 - 2020.05
Computer Science and Technology (Experimental Class), Bachelor	Beijing

Internship Experience

Electronic Design Automation Center, The Chinese University of Hong Kong	2024.09 - 2025.03
Research Assistant	Hongkong
Large Circuit Model Group, National Center of Technology Innovation for EDA	2024.07 - 2024.09
Research Intern	Nanjing

Honors & Awards

KDD 2025 Outstanding Reviewer	2025.06
GLSVLSI 2025 Best Paper Award Nomination (6 out of 154)	2025.06
National first prize of Integrated Circuit EDA Elite Challenge (Role: Team Leader)	2023.12
Beijing Outstanding Graduate	2020.06
National second prize of China Undergraduate Mathematical Contest in Modeling (Role: Team Leader)	2018.10

Main Publications

Graph Foundation Models: Concepts, Opportunities and Challenges

Jiawei Liu*, Cheng Yang*, Zhiyuan Lu, Junze Chen, Yibo Li, Mengmei Zhang, Ting Bai, Yuan Fang, Lichao Sun, Philip S. Yu, Chuan Shi. (IEEE TPAMI, CCF-A, SCI Q1 TOP, IF=22.2)

WideGate: Beyond Directed Acyclic Graph Learning in Subcircuit Boundary Prediction

Jiawei Liu, Zhiyan Liu, Xun He, Jianwang Zhai, Zhengyuan Shi, Qiang Xu, Bei Yu, Chuan Shi. (DATE 2025, CCF-B)

PolarGate: Breaking the Functionality Representation Bottleneck of And-Inverter Graph Neural Network

Jiawei Liu, Jianwang Zhai, Mingyu Zhao, Zhe Lin, Bei Yu, Chuan Shi. (ICCAD 2024, CCF-B)

Heterogeneous Spatio-temporal Graph Contrastive Learning for Point-of-Interest Recommendation

Jiawei Liu, Haihan Gao, Cheng Yang, Chuan Shi, Tianchi Yang, Hongtao Cheng, Qianlong Xie, Xingxing Wang, Dong Wang. (Tsinghua Science and Technology, SCI Q1, IF=3.7)

Graph Neural Network based Time Estimator for SAT Solver

Jiawei Liu, Wenyi Xiao, Hongtao Cheng, Chuan Shi. (International Journal of Machine Learning and Cybernetics, SCI Q3, IF=3.6)

Other Publications

Transferable Parasitic Estimation via Graph Contrastive Learning and Label Rebalancing in AMS Circuits

Shan Shen, Shenglu Hua, Jiajun Zou, **Jiawei Liu**, Jianwang Zhai, Chuan Shi, Wenjian Yu. (ICCAD 2025, CCF-B)

MILS: Modality Interaction Driven Learning for Logic Synthesis

Mingyu Zhao, **Jiawei Liu**, Jianwang Zhai, Chuan Shi. (GLSVLSI 2025, **Best Paper Norminee**)

ForgeEDA: A Comprehensive Multimodal Dataset for Advancing EDA

Zhengyuan Shi, Zeju Li, Chengyu Ma, Yunhao Zhou, Ziyang Zheng, **Jiawei Liu**, Hongyang Pan, Lingfeng Zhou, Kezhi Li, Jiaying Zhu, Lingwei Yan, Zhiqiang He, Chenhao Xue, Wentao Jiang, Fan Yang, Guangyu Sun, Xiaoyan Yang, Gang Chen, Chuan Shi, Zhufei Chu, Jun Yang, Qiang Xu. (ISEDA 2025)

IRGNN: A Graph-based Framework Integrating Numerical Solution and Point Cloud for Static IR Drop Prediction.

Feng Guo, Yueyue Xi, Jianwang Zhai, Jingyu Jia, **Jiawei Liu**, Kang Zhao, Chuan Shi. (DAC 2025, CCF-A)

IR-Fusion: A Fusion Framework for Static IR Drop Analysis Combining Mathematical Solutions and Machine Learning

Feng Guo, Jianwang Zhai, Jingyu Jia, **Jiawei Liu**, Kang Zhao, Bei Yu, Chuan Shi. (DATE 2025, CCF-B)

PGAU: Static IR Drop Analysis for Power Grid using Attention U-Net Architecture and Label Distribution Smoothing

Feng Guo*, **Jiawei Liu***, Jianwang Zhai, Jingyu Jia, Kang Zhao, Chuan Shi. (GLSVLSI 2024)

SATGL: an Open-source Graph Learning Toolkit for Boolean Satisfiability

Hongtao Cheng*, **Jiawei Liu***, Jianwang Zhai, Mingyu Zhao, Cheng Yang, Chuan Shi. (ISEDA 2024)

Endowing Pre-trained Graph Models with Provable Fairness

Zhongjian Zhang, Mengmei Zhang, Yue Yu, Cheng Yang, **Jiawei Liu**, Chuan Shi. (WWW 2024, CCF-A)

Abnormal Event Detection via Hypergraph Contrastive Learning

Bo Yan, Cheng Yang, Chuan Shi, **Jiawei Liu**, Xiaochen Wang. (SDM 2023, CCF-B)

Learning to Distill Graph Neural Networks

Cheng Yang, Yuxin Guo, Yao Xu, Chuan Shi, **Jiawei Liu**, Chunchen Wang, Xin Li, Ning Guo, Hongzhi Yin. (WSDM 2023, CCF-B)

Extract the Knowledge of Graph Neural Networks and Go Beyond it: An Effective Knowledge Distillation Framework

Cheng Yang, **Jiawei Liu**, Chuan Shi. (WWW2021, CCF-A)

Decorrelated Clustering with Data Selection Bias

Xiao Wang, Shaohua Fan, Kun Kuang, Chuan Shi, **Jiawei Liu**, Bai Wang. (IJCAI 2020, CCF-A)