

Jiawei Liu

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<https://scholar.google.com/citations?user=ufius3MAAAAJ&hl=zh-CN>

2000-01 Male



Research interests

Graph Machine Learning (14 papers), AI for EDA (6 papers)

Education

Beijing University of Posts and Telecommunications	2020.09 - 2025.07
Computer Science and Technology, Doctor	Beijing
Beijing University of Posts and Telecommunications	2016.08 - 2020.05
Computer Science and Technology (Experimental Class), Bachelor	Beijing

Internship Experience

Department of Computer Science and Engineering, The Chinese University of Hong Kong	2024.09 - Present
Research Assistant	HongKong
Leader: Bei Yu	
Main work: Lead the research on GNN-based sequential circuit representation learning.	
Outcome:	
<ul style="list-style-type: none">Submitted a first-authored paper to IJCAI 2025.	
Large Circuit Model Group, National Center of Technology Innovation for EDA	2024.07 - 2024.09
Research Intern	Nanjing
Leader: Qiang Xu	
Main work: Lead the research on GNN-based combinational circuit representation learning.	
Outcome:	
<ul style="list-style-type: none">Achieved a 43.01% improvement in Recall for subcircuit output boundary prediction, with a reduction of 94.74% in training time.Published a first-authored paper on DATE 2025.	

Honors & Awards

The first prize of Integrated Circuit EDA Elite Challenge 2023 (Top 3/80)	Dec 2023
Beijing Outstanding Graduate	Jun 2020
National second prize of China Undergraduate Mathematical Contest in Modeling	Oct 2018

Recent Publications

WideGate: Beyond Directed Acyclic Graph Learning in Subcircuit Boundary Prediction	2024.11
Jiawei Liu, Zhiyan Liu, Xun He, Jianwang Zhai, Zhengyuan Shi, Qiang Xu, Bei Yu, Chuan Shi. (DATE 2025, CCF-B)	
Graph Neural Network based Time Estimator for SAT Solver	2024.08
Jiawei Liu, Wenyi Xiao, Hongtao Cheng, Chuan Shi. (International Journal of Machine Learning and Cybernetics, JCR Q2)	
Towards Graph Foundation Models: A Survey and Beyond.	2024.07
Jiawei Liu*, Cheng Yang*, Zhiyuan Lu, Junze Chen, Yibo Li, Mengmei Zhang, Ting Bai, Yuan Fang, Lichao Sun, Philip S. Yu,	

Chuan Shi. (Submitted to TPAMI, arXiv available)

PolarGate: Breaking the Functionality Representation Bottleneck of And-Inverter Graph Neural Network 2024.05

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 2024.03

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

PGAU: Static IR Drop Analysis for Power Grid using Attention U-Net Architecture and Label Distribution Smoothing 2024.03

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

SATGL: an Open-source Graph Learning Toolkit for Boolean Satisfiability 2024.03

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

Other Publications

IR-Fusion: A Fusion Framework for Static IR Drop Analysis Combining Mathematical Solutions and Machine Learning 2024.11

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

Graph Foundation Model 2024.05

Chuan Shi, Junze Chen, Jiawei Liu, Cheng Yang. (Frontiers of Computer Science, JCR Q1)

Endowing Pre-trained Graph Models with Provable Fairness 2024.02

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

Self-Supervised Spatio-Temporal Graph Learning for Point-of-Interest Recommendation 2023.08

Jiawei Liu, Haihan Gao, Chuan Shi, Hongtao Cheng, Qianlong Xie. (Applied Sciences, JCR Q1)

Abnormal Event Detection via Hypergraph Contrastive Learning 2022.12

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

Learning to Distill Graph Neural Networks 2022.10

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

A survey on heterogeneous information network based recommender systems: Concepts, methods, applications and resources. 2022.06

Jiawei Liu, Chuan Shi, Cheng Yang, Zhiyuan Lu, Philip S.Yu. (AI Open)

Heterogeneous Information Network based Recommender Systems: a survey (in Chinese) 2021.10

Jiawei Liu, Chuan Shi, Cheng Yang, Philip S. Yu. (Journal of Cyber Security)

Extract the Knowledge of Graph Neural Networks and Go Beyond it: An Effective Knowledge Distillation Framework 2021.04

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

Decorrelated Clustering with Data Selection Bias 2020.04

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