

# Jiarui Guo

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## EDUCATION

### Peking University

Ph.D. in Computer Science

Beijing, China

2023 – Present

### Peking University

B.Sc in Computer Science & Mathematics

Beijing, China

2019 – 2023

## WORKING EXPERIENCE

### Baichuan Intelligent Technology

Research Intern

Beijing, China

Apr. 2024 – Present

### Theory Lab, Huawei Technologies

Research Intern (Online)

Hong Kong SAR, China

Sept. 2023 – Apr. 2024

## PUBLICATIONS

### HourglassSketch: An Efficient and Scalable Framework for Graph Stream Summarization

*Jiarui Guo, Boxuan Chen, Kaicheng Yang, Tong Yang, Zirui Liu, Qiuhe Yin, Sha Wang, Yuhan Wu, Xiaolin Wang, Bin Cui, Tao Li, Xi Peng, Renhai Chen, Gong Zhang*

2025 IEEE 41st International Conference on Data Engineering (ICDE '25). May. 2025

### CuckooGraph: A Scalable and Space-Time Efficient Data Structure for Large-Scale Dynamic Graphs

*Zhuochen Fan, Yalun Cai, Zirui Liu, Jiarui Guo, Xin Fan, Tong Yang, Bin Cui*

2025 IEEE 41st International Conference on Data Engineering (ICDE '25). May. 2025

### SteadySketch: A High-Performance Algorithm for Finding Steady Flows in Data Streams

*Zhuochen Fan, Xiangyuan Wang, Xiaodong Li, Jiarui Guo, Wenrui Liu, Haoyu Li, Sheng Long, Zheng Zhong, Tong Yang, Xuebin Chen, Bin Cui*

IEEE/ACM Transactions on Networking (ToN). Aug. 2024

### Enabling Space-Time Efficient Range Queries with REncoder

*Zhuochen Fan, Bowen Ye, Ziwei Wang, Zheng Zhong, Jiarui Guo, Yuhan Wu, Haoyu Li, Tong Yang, Yaofeng Tu, Zirui Liu, Bin Cui*

The International Journal on Very Large Data Bases (VLDBJ). Aug. 2024

### SketchPolymer: Estimate Per-item Tail Quantile Using One Sketch

*Jiarui Guo, Yisen Hong, Yuhan Wu, Yunfei Liu, Tong Yang, Bin Cui*

Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD '23). Aug. 2023

### SteadySketch: Finding Steady Flows in Data Streams

*Xiaodong Li, Zhuochen Fan, Haoyu Li, Zheng Zhong, Jiarui Guo, Sheng Long, Tong Yang, Bin Cui*

2023 IEEE/ACM 31st International Symposium on Quality of Service (IWQoS '23). Jun. 2023

### PISketch: Finding Persistent and Infrequent Flows

*Zhuochen Fan, Zhoujing Hu, Yuhan Wu, Jiarui Guo, Sha Wang, Wenrui Liu, Tong Yang, Yaofeng Tu, Steve Uhlig*

IEEE/ACM Transactions on Networking (ToN). May. 2023

### Finding Simplex Items in Data Streams

*Zhuochen Fan, Jiarui Guo, Xiaodong Li, Tong Yang, Yikai Zhao, Yuhan Wu, Bin Cui, Yanwei Xu, Steve Uhlig, Gong Zhang*

2023 IEEE 39th International Conference on Data Engineering (ICDE '23). Apr. 2023

**REncoder: A Space-Time Efficient Range Filter with Local Encoder**

Ziwei Wang, Zheng Zhong, Jiarui Guo, Yuhan Wu, Haoyu Li, Tong Yang, Yaofeng Tu, Huanchen Zhang, Bin Cui  
2023 IEEE 39th International Conference on Data Engineering (ICDE '23). Apr. 2023

**BurstSketch: Finding Bursts in Data Streams**

Ruijie Miao, Zheng Zhong, Jiarui Guo, Zikun Li, Tong Yang, Bin Cui  
IEEE Transactions on Knowledge and Data Engineering (TKDE). Nov. 2022

**PISketch: Finding Persistent and Infrequent Flows**

Zhuochen Fan, Zhoujing Hu, Yuhan Wu, Jiarui Guo, Wenrui Liu, Tong Yang, Hengrui Wang, Yifei Xu, Steve Uhlig, Yaofeng Tu  
Proceedings of the ACM SIGCOMM 2022 Workshop on Formal Foundations and Security of Programmable Network Infrastructures (FFSPIN '22). Aug. 2022