Jinchao Huang

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Research Interests

He is interested in designing approximation and randomized algorithms for big data with non-trivial theoretical guarantees.

Education

- **Ph.D. in the CUHK Database Group** — CUHK
  Advisor: Prof. Sibo Wang — *August 2023 - Present*
- **B.Eng. in Computer Science and Technology** — USTC
  Advisor: Prof. Xue Chen — *September 2019 - July 2023*

  GPA: *3.87/4.30* ***Weighted Average Score:*** *90.22/100* ***Ranking:*** *20/256 (top 8%)*

  Core Courses: *Introduction to Computer Systems (H) (100/100), Operating Systems (H) (94/100), Computer Organization (94/100), Linear Algebra (96/100), Algorithm Design (95/100)*

Publications

Conference Papers

(C4) **Jinchao Huang**, Sibo Wang.

DIPS: Optimal Dynamic Index for Poisson πps Sampling.

Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (SIGKDD), under submission, 2025.

(C3) Guanhao Hou, **Jinchao Huang**, Fangyuan Zhang, Sibo Wang.

Efficient Concurrent Algorithms for Updates to Persistent Binary Search Trees.

Proceedings of the VLDB Endowment (PVLDB), under submission, 2025.

(C2) **Jinchao Huang**, Sibo Wang.

Subset Sampling and Its Extensions.

- Aimed at sampling a subset from a set of records each of which is associated with a probability of being independently sampled.
- Provided a dynamic data structure for the subset sampling problem with optimal query time and space.
- Designed an I/O-efficient algorithm for the subset sampling problem under the external memory model.
- Extended to dynamic range subset sampling problem and weight-induced subset sampling problem and provided non-trivial solutions.

(C1) Xingguang Chen, Fangyuan Zhang, **Jinchao Huang**, Sibo Wang.

Efficient Approximation Framework for Attribute Recommendation.

Proceedings of the ACM SIGMOD International Conference on Management of Data (**SIGMOD2024**).

- Proposed a general approximation framework for attribute recommendation that efficiently returns the top-k attributes with theoretical guarantees.
- Supported an extensive range of metric functions.
- Gained up to an order of magnitude speed-up and consistently high accuracy compared to TopKAttr.

Journal Papers

(J1) Xingyi Zhang*, **Jinchao Huang***, Fangyuan Zhang, Sibo Wang.

FICOM: An Effective and Scalable Active Learning Framework for GNNs on Semi-supervised Node Classification.

International Journal on Very Large Data Bases (**VLDBJ**), to appear, 2024.

- Aimed to select B nodes to label for the best possible GNN performance.
- Provided a $(1 - 1/e)$-approximate greedy solution exploiting the monotone and submodular property of the objective function.
- Scaled to large dataset by pruning less important nodes using approximate algorithms.

Academic Services

- Reviewer or subreviewer of SIGKDD 2025, ICDE 2023, TKDE 2023-2024, DASFFA 2024, PAKDD 2023.
- Student volunteer of VLDB 2024.

Selected Awards

- Elite Class Scholarship
- Outstanding Student Scholarship