Jinchao Huang

Ph.D. Student, Database Group, The Chinese University of Hong Kong
jasonwong2001.github.io jchuang@link.cuhk.edu.hk

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

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

Subset Sampling and Its Extensions.

Proceedings of the 43rd ACM SIGMOD-SIGACT-SIGAI Symposium on Principles of Database Systems (**PODS**), under submission, 2024

- 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 (**SIGMOD**), to appear, 2024.

- 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**), under submission, 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.

Selected Awards

- Elite Class Scholarship
- Outstanding Student Scholarship