Jing Lan

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🎓 Education

The Chinese University of Hong Kong (CUHK), Hong Kong, China   2022 – Present

MPhil in Computer Science
Supervisor: Prof. James Cheng

Sun Yat-sen University (SYSU), Canton, China   2018 – 2022

BEng in Computer Science
Supervisors: Prof. Nong Xiao & Prof. Dan Huang
GPA: 3.9

👥 Experience

Flavius: Disaggregated Graph OLAP Engine @ Husky Data Lab, CUHK   2022 – Present

core member   Advisor: Prof. James Cheng

We build an in-memory graph OLAP engine with a disaggregated architecture. The system optimizes for highly skewed graph workloads. It processes dominant small queries with high throughput while ensuring QoS for the heavy. Major Contributions are:

- A set of novel *Subquery* operators executing optional match, pattern filter, repeated join, etc., and a query planner processing graph queries to operator pipelines.
- A *disaggregated* layout with a compute cluster connected to clients, planning and scheduling queries, and a cache cluster caching data, executing pushdown operators (e.g., filter, aggregation) and distributed joins.
- A push-pull hybrid query engine: The system executes heavy queries in batches, preventing small ones from starvation. A scheduler optimizes the batch size for our performance objectives.

Student Cluster Competition (SCC) @ SYSU   2020 – 2022

leader(2021-22), *member(2020-21)*   Advisor: Prof. Dan Huang

- We win system competitions in world-famous HPC venues (e.g., ACM SC & European ISC)
- We explore HPC systems:
  - Cluster management from supercomputers to configurable cloud (e.g., TACC Chameleon)
  - Application optimizations via exploiting: platform features (e.g., SmartNICs), parallel opportunities (e.g., OpenMP, CUDA), and code optimizations (e.g., better spatial & temporal localities)

⚙ Skills

- Programming Languages: C, C++, Python
- Platform experience: clusters, cloud, supercomputers
- Software: Slurm, Spack, tmux, CMake, LaTeX, etc.
- Languages: English (TOEFL 103), Putonghua

🎓 Publications

♡ Honors

2nd Prize (top 10%), Undergraduate Scholarship	2019, 2021
Champion	IndySCC@SC, 2021
Honorable Mention	SCC@ISC, 2021
2nd Prize (3rd out of 65, and a $9000 bonus!)	Sugon Priority Research Application, 2021

i Miscellaneous

- The SYSU SCC Team: https://scc.sysu.tech
- Homepage: https://lan-jing.github.io/