HAOYU LI

lihy@pku.edu.cn ✉   http://lihy0529.github.io

EDUCATION

Peking University, School of Electronics Engineering and Computer Science	Beijing, China
(*Expected*) Bachelor of Science in Computer Science and Technology (with Honor)	*Sep. 2019 - Jul. 2023*

GPA: 3.865/4.0   Rank: 2/200   (*Expected*) *Summa Cum Laude*

PUBLICATION

1. **Haoyu Li**, Qizhi Chen, Yixin Zhang, Tong Yang, Bin Cui. Stingy Sketch: A Sketch Framework for Accurate and Fast Frequency Estimation. Proc. VLDB Endow. 15(7): 1426-1438 (2022)

PROJECTS

- **Wind-Bell Index** — *Jan. 2021 - Jun. 2021*
  An index structure to accelerate rational query for graph databases. Current status: *ICDE 2023* revision.
  - I gave a theoretical guarantee of its performance and helped to deploy it into the Neo4J database.
- **Stingy Sketch** — *Jun. 2021 - Jan. 2022*
  A probabilistic algorithm for fast and accurate frequency estimation. Now accepted by *VLDB 2022*.
  - I proposed the idea, led the team, conducted the experiments and wrote the paper.
- **REncoder** — *Nov. 2021 - Dec. 2021*
  A space-time efficient range filter with local encoder. Current Status: *ICDE 2023* revision.
  - I participated in the group meeting, contributed to the idea and drew some figures.
- **Stable Items** — *Jan. 2022 - Sep. 2022*
  A project for detecting stable items in data streams. Now under review by *WWW 2023*.
  - I proposed the idea and helped to deploy the algorithm into the Apache Flink database.
- **2d-Mesh Switch** — *May. 2022 - now*
  A new switch architecture which introduces 2d-mesh blocks to do assorted stateful operations. Ongoing.
  - I am now writing verilog code and plan to conduct experiments on NetFPGA soon.

RESEARCH EXPERIENCE

- **Peking University** — Beijing, China
  RA   Interest: Probabilistic Algorithms   Advisor: Prof. Tong Yang   Jan. 2021 - May. 2022
- (**Remote**) **Harvard University** — Cambridge, MA
  RA   Interest: Programmable Switch Architecture   Advisor: Prof. Minlan Yu   May. 2022 - now

PROFESSIONAL EXPERIENCE

Peking University — Beijing, China
- Chair of *Turing Student Research Forum* — *Jun. 2022*
- TA for *Introduction to Computer Systems* — *2021 Fall*

SCHOLARSHIPS, HONORS, AWARDS AND LEADERSHIP

- **SenceTime Scholarship** (*awarding only 30 students in China*), SenseTime Group Inc — *2022*
- Arawana Scholarship, Peking University (PKU) — *2022*
- **National Scholarship** (*top 1% in college*), Ministry of Education of China (MOE) — *2021*
- **National Scholarship** (*top 1%*), MOE — *2020*
- Zhongying Moral Education Scholarship, PKU — *2020 - 2023*
- **Academic Innovation Award** (*top 1%*) — *2022*
- Merit Student (*rank 1/26 in Turing Class*) — *2022*
- Merit Student Pacesetter (*1/26*) — *2021*
- Merit Student (*1/30*) — *2020*
- First Prize of Challenge Cup Research Competition (*team leader, rank 1/11*), PKU — *2022*
- First Prize of Huawei Cup Innovation Competition (*leader, 1/16*), Huawei Technologies Co., Ltd — *2022*
- First Prize of Chinese University Mathematical Olympiad, Chinese Mathematical Society — *2021*
- Freshmen Counselor — *2021*
- Leader of the College Debating Team — *2021*
- Minister of the PKU Zhongying Public Welfare Association — *2021*
- Turing Class Monitor — *2020 - 2023*

SKILLS

Programming Languages: C/C++, Java, Python, Verilog, MySQL, P_4