Peiqing Chen

pqchen99@umd.edu | (+1) 8573188737 | https://kaiserv2.github.io/

Education

University of Maryland College Park 2023-Present
(Continue)Ph.D. in Computer Science, Advisor: Alan (Zaoxing) Liu *College Park, USA*
Boston University 2021-2023
Ph.D. in Electrical & Computer Engineering, Advisor: Alan (Zaoxing) Liu *Boston, USA*
Peking University 2017-2021
B.S in Computer Science and Technology *Beijing, China*

Research interests

I am currently interested in the field of network and database system research. My specialty lies in streaming large data processing, using robust algorithms and delicate data structures to make network and data systems perform more efficiently. Before starting my Ph.D., I worked on network sketch-based measurement and analysis, data stream processing algorithms at Peking University.

Publications and research projects

1. **Peiqing Chen**, Yushun Hsiao, Minghao Li, Zishen Wan, Minlan Yu, Vijay Janapa Reddi, Zaoxing Liu, *OctoCache: A High-Performance Cache for MAV Mapping Systems*, under submission
   - Propose a cache-based workflow to address the bottleneck of mapping systems on Micro Aerial Vehicles (MAVs)
   - Improve the end-to-end runtime and max safety flight speed bound of MAV autonomy tasks
2. Yinda Zhang, **Peiqing Chen**, Zaoxing Liu, *OctoSketch: Enabling Real-Time, Continuous Network Monitoring over Multiple Cores*, to appear in USENIX NSDI'24
   - Propose OctoSketch as a software monitoring framework that can scale a wide spectrum of sketches to many cores with high throughput and online accuracy.
3. Yuhan Wu, Shiqi Jiang, Yifei Xu, Siyuan Dong, Kaicheng Yang, **Peiqing Chen**, Tong Yang, *Unbiased Real-time Traffic Sketching*, TNSE 2023
   - Propose UC sketch to support unbiased sliding window flow size measurement for network diagnoses, delay measurement and heavy hitter detection
4. **Peiqing Chen**, Yuhan Wu*, Tong Yang, Junchen Jiang and Zaoxing Liu, *Precise telemetry error estimation*, IMC 2021
   - Markov inequality-based error analysis gives a loose error bound for sketches in network and data stream measurements
   - Provide a near-optimal error estimation method for sketches to help functions including load balancing and traffic engineering
5. **Peiqing Chen**, Dong Chen, Lingxiao Zheng, Jizhou Li and Tong Yang, *Out of Many We are One: Measuring Item Batch with Clock-sketch*, ACM SIGMOD 2021
   - Batch pattern mining is helpful in per flow burst detection, cache policy design, etc.
   - Propose Clock-sketch as an efficient algorithm to measure the features of each batch in data stream

Awards & Scholarships

- ECE PhD Student Fellowship, Boston University 2021
- National Scholarship, Peking University 2020
- Merit Student Honor, Peking University 2020

Skills

- Programming Languages C/C++ (highly skilled), Python, PHP
- Tools Latex, Git

Teaching Assistant

- BU EC 530: Software Engineering Principles
- UMD CMSC 414: Computer and Network Security