Qing Chen

Email: qchen.cs3@gmail.com   **Google scholar**   **Homepage**   **LinkedIn**

Education

University of Zürich   Zürich, Switzerland
Ph.D. in Computer Science   Feb. 2020 – August 2025 (Expected)
Supervisor: Michael Böhlen. Co-supervisor: Sven Helmer.
Thesis: Practical Data Structures for Connectivity Queries on Fully-dynamic Undirected Graphs

Fudan University   Shanghai, China
MEng in Computer Science   Sep. 2013 – Feb. 2016
Supervisor: Zijing Tan.

Zhengzhou University   Zhengzhou, China
BEng in Computer Science; Rank (3/200)   Sep. 2009 – Jul. 2013

Employment history

University of Zürich   Zurich, Switzerland
Research Assistant & Teaching Assistant   Feb. 2020 - Present
Proposed and implemented a novel data structure to answer connectivity queries on fully dynamic graphs, which is 10x-70x faster than state-of-the-art approaches. Implemented all data structures for connectivity queries on fully dynamic graphs. Organized a course with an annual average of 300 BSc/MSc students.

Paypal   Shanghai, China
Data Engineer   May. 2018 - Jan. 2020
Developed systems and tools to guarantee PayPal user data follows GDPR regulations. Developed text summarization systems and practical word embeddings.

Qatar Computing Research Institute   Doha, Qatar
Research Assistant   Jul. 2015 - Jun. 2017
Developed the first sketch data structure for graph streaming summarization.

Dell EMC   Shanghai, China
Software Engineer Intern   Sep. 2014 - June 2015
Automated OpenSUSE installation for the VxRail hyper-converged product.

Publications

An experimental comparison of tree-data structures for connectivity queries on fully-dynamic undirected graphs
Qing Chen, Michael Böhlen, and Sven Helmer. *SIGMOD, 2025.*

Dynamic Spanning Trees for Connectivity Queries on Fully-dynamic Undirected Graphs

Qing Chen, Oded Lachish, Sven Helmer and Michael Böhlen. *VLDB, 2022.*

Graph stream summarization: From big bang to big crunch.

Nan Tang, **Qing Chen**, and Prasenjit Mitra. *SIGMOD, 2016.*

Repair diversification: A new approach for data repairing.

Chu He, Zijing Tan, **Qing Chen**, and Chaofeng Sha. *Information Sciences, 2016.*

Repairing functional dependency violations in distributed data

Qing Chen, Zijing Tan, Chu He, and Chaofeng Sha. *DASFAA, 2015.*

Repair diversification for functional dependency violations

Chu He, Zijing Tan, **Qing Chen**, Zhihui Wang, Chaofeng Sha, and Wei Wang. *DASFAA, 2014. **Best Paper Candidate**.*

Program Committee and Reviewer	NeurIPS (2023, 2025), ICLR (2024, 2025), ICML (2024, 2025, 2025 Position Paper Track), AAAI (2025), VLDB (2020 external reviewer)
Talks	- A scalable connectivity algorithm for fully dynamic graphs. Oracle Labs Zürich, October 2022. - Dynamic Spanning Trees for Connectivity Queries on Fully-dynamic Undirected Graphs. VLDB 2022, Sydney.
Grant	University of Zürich CanDoc grant (providing protected research time for promising early-career researchers), 59,560 CHF
Supervised projects	- Implementing Learned Cardinality Estimation in PostgreSQL. 30 ECTs (=900 hours of work). Student: Xiaozhe Yao - Implementing learned indexes on 1-dimensional and 2-dimensional data. 15 ECTs (=450 hours of work). Students: Xiaozhe Yao, Nivedita Nivedita and Neeraj Kumar. - Implementing deconvolution to visualize and understand Convolutional Neural Networks. 3 ECTs (= 90 hours of work). Student: Xiaozhe Yao - Implementing dynamic connectivity queries with spanning trees. 30 ECTs (=900 hours of work). Student: Alex Schindler. - Identifying desirable spanning trees for dynamic connectivity. 3 ECTs (= 90 hours of work). Student: Andrios Michail.

- Understanding Faster Deterministic Fully-Dynamic Graph Connectivity. 3 ECTs (= 90 hours of work). Student: Xinyu Zhu.

- Implementing hierarchical forests on dynamic connectivity. 15 ECTs (=450 hours of work). Students: Xinyu Zhu and Yuanzhe Gao.

- Extending D-tree for connectivity queries on graphs with large diameters. 9 ECTs (=270 hours of work). Student: Zheng Luo.

- Robust data structure for connectivity queries on dynamic graphs. 15 ECTs (=450 hours of work). Students: Zheng Luo and Running Hou.

- Implementing regular path queries in graph database management systems. 30 ECTs (=900 hours of work). Student: Running Hou.

Supervised students	Xiaozhe Yao, now Ph.D. student at ETH Systems group
	Alex Schindler, now data engineer at SCIGILITY, Zürich
	Nivedita Nivedita
	Neeraj Kumar
	Andrios Michail
	Xinyu Zhu, now Ph.D. student at UZH DBTG group
	Yuanzhe Gao
	Zheng Luo, next UZH DAST Group, now Ph.D. student at UCLA
	Running Hou, now Ph.D. student at UZH DBTG group
	Mika Schoch

| Teaching | Teaching assistants, Informatics-II, Spring Semesters of 2020 - 2024 |
| | Summary: supervise a group of students who prepare exercises and teach exercises; prepare tasks for exams; grade exams. |