

Zhanhao Zhao

Research Fellow, National University of Singapore

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RESEARCH INTERESTS

- **Database Systems:** Built-in AI; Built-in temporal support
- **Transaction processing:** Concurrency control; Serializability; High availability; Verifiability

EXPERIENCE

- **National University of Singapore** Singapore
Research Fellow Jul. 2023 - Present
- **National University of Singapore** Singapore
Research Intern Apr. 2022 - Apr. 2023
- **Tencent Inc.** Shenzhen/Beijing, China
Research Intern July 2017 - Dec. 2022
- **Key Laboratory of Data Engineering and Knowledge Engineering (DEKE)** Beijing, China
Research and Teaching Assistant Sept. 2017 - Apr. 2022

EDUCATION

- **Renmin University of China** Beijing, China
Ph.D. in Computer Science; Advisor: Prof. Xiaoyong Du and Prof. Wei Lu Sept. 2017 – June, 2023
- **National University of Singapore** Singapore
Visiting Student; Advisor: Prof. Beng Chin Ooi Apr. 2022 – Apr. 2023
- **Zhongnan University of Economics and Law** Wuhan, China
B.E. in Management Information Systems; GPA: 3.62 (Top 3%) Sept. 2013 – June 2017

PUBLICATIONS

Conference Papers

- Qiyu Zhuang, Xinyue Shi, Shuang Liu, Wei Lu, **Zhanhao Zhao**, Yuxing Chen, Tong Li, Anqun Pan, Xiaoyong Du, *GeoTP: Latency-aware Geo-Distributed Transaction Processing in Database Middlewares*, **ICDE**, 2025.
- **Zhanhao Zhao**, Shaofeng Cai, Haotian Gao, Hexiang Pan, Siqi Xiang, Naili Xing, Gang Chen, Beng Chin Ooi, Yanyan Shen, Yuncheng Wu, Meihui Zhang, *NeurDB: On the Design and Implementation of an AI-powered Autonomous Database*, **CIDR**, 2025.
- Hexiang Pan, Quang-Trung Ta, Meihui Zhang, **Zhanhao Zhao**, Yeow Meng Chee, Gang Chen, Beng Chin Ooi, *FC: Adaptive Atomic Commit via Failure Detection*, **ICDE**, 2024.
- Qiushi Zheng, **Zhanhao Zhao**, Wei Lu, Chang Yao, Yuxing Chen, Xiaoyong Du, Anqun Pan, *Lion: Minimizing Distributed Transactions through Adaptive Replica Provision*, **ICDE**, 2024.
- Jiamin Hou, **Zhanhao Zhao**, Zhouyu Wang, Wei Lu, Guodong Jin, Dong Wen, Xiaoyong Du, *AeonG: An Efficient Built-in Temporal Support in Graph Databases*, **PVLDB**, 2024.
- **Zhanhao Zhao**, Hexiang Pan, Gang Cheng, Xiaoyong Du, Wei Lu, Beng Chin Ooi, *VeriTxn: Verifiable Transactions for Cloud-Native Databases with Storage Disaggregation*, **SIGMOD**, 2024.
- **Zhanhao Zhao**. *Efficiently Supporting Adaptive Multi-Level Serializability Models in Distributed Database Systems*, Proceedings of **SIGMOD** (SRC), 2021.
- Wei Lu, **Zhanhao Zhao**, Xiaoyu Wang, Haixiang Li, Zhenmiao Zhang, Zhiyu Shui, Sheng Ye, Anqun Pan, Xiaoyong Du. *A Lightweight and Efficient Temporal Database Management System in TDSQL*, **PVLDB**, 2019.

Journal Papers

- Beng Chin Ooi, Shaofeng Cai, Gang Chen, Yanyan Shen, Kian-Lee Tan, Yuncheng Wu, Xiaokui Xiao, Naili Xing, Cong Yue, Lingze Zeng, Meihui Zhang, **Zhanhao Zhao***, *NeurDB: An AI-powered Autonomous Data System*, Science China Information Sciences (**SCIS**), 2024.
- **Zhanhao Zhao**, Hongyao Zhao, Qiyu Zhuang, Wei Lu, Haixiang Li, Meihui Zhang, Anqun Pan, Xiaoyong Du, *Efficiently Supporting Multi-Level Serializability in Decentralized Database Systems*, **TKDE**, 2023.
- Zhiyu Shui, Wei Lu, **Zhanhao Zhao**, Yueyang He, Xiao Zhang, Xiaoyong Du, *Theoretical Study on Multi-level Consistency Modeling in Distributed Databases*, Journal of Software (**JOS**), 2023. (in Chinese)
- Hongyao Zhao, **Zhanhao Zhao**, Wanqing Yang, Wei Lu, Haixiang Li, Xiaoyong Du, *Experimental Study on Concurrency Control Algorithms in In-memory Databases*, Journal of Software (**JOS**), 2022. (in Chinese)
- **Zhanhao Zhao**, Wei Lu, Hongyao Zhao, Zongyan He, Haixiang Li, Anqun Pan, Xiaoyong Du, *T-SQL: A Lightweight Implementation to Enable Built-in Temporal Support in RDBMSs*. IEEE Transactions on Knowledge and Data Engineering (**TKDE**), 2021.
- Haixiang Li, **Zhanhao Zhao**, Yijian Cheng, Wei Lu, Xiaoyong Du, Anqun Pan. *Efficient Time-interval Data Extraction in MVCC-based RDBMS*, World Wide Web Journal (**WWWJ**), 2019.
- **Zhanhao Zhao**, Feiran Huang, Xiaoli Wang, Wei Lu, Xiaoyong Du, *SQL-based Solution for Fast Graph Similarity Search*, Journal of Software (**JOS**), 2018. (in Chinese)

PATENTS

- Haixiang Li, Wei Lu, **Zhanhao Zhao**, Xiaoyong Du, Anqun Pan, TRANSACTION PROCESSING METHOD, APPARATUS, COMPUTER DEVICE, AND STORAGE MEDIUM, CN111143389B, 2022.
- Haixiang Li, Wei Lu, Xiaoyong Du, **Zhanhao Zhao**, Anqun Pan, DISTRIBUTED DATA READ METHOD AND APPARATUS, CN110196856B, 2022.
- Haixiang Li, Wei Lu, Xiaoyong Du, **Zhanhao Zhao**, Anqun Pan, DATA READ METHOD AND APPARATUS, COMPUTER DEVICE, AND STORAGE MEDIUM, US-2021-0382877-A1, 2021.

PROGRAMMING SKILLS

- **Languages:** Mandarin Chinese (Native), English (Fluent).
- **Coding:** C, C++, Java, SQL, L^AT_EX. Familiar with the source code of MySQL/PostgreSQL.

HONORS AND AWARDS

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| • CCF TCDB Outstanding Doctoral Dissertation Award | 2024 |
| • Graduates with Honors Award, Beijing Government | 2023 |
| • First-class Award for Science and Technology Progress, Shenzhen Government | 2022 |
| • National Scholarship for Ph.D Students, China | 2021 |
| • First-class Student Scholarship, Renmin University of China | 2018/2020 |
| • Graduates with Honors Award, Zhongnan University of Economics and Law | 2017 |
| • National Scholarship for Undergraduate Students, China | 2015 |
| • First-class Student Scholarship, Zhongnan University of Economics and Law | 2015 |