

Haoran Ding

Shanghai Jiao Tong University

Shanghai, China

✉ nhaorand@gmail.com

🌐 haoran-ding.github.io

Research Interests

Formal Verification, Automated Reasoning, Computer Systems

I focus on the intersection of formal verification and computer systems, aiming to develop fundamental theories and practical tools that can enhance both system reliability and performance.

Education

09/2018 - 06/2025 *Ph.D. in Computer Science*, Shanghai Jiao Tong University,

Advisor: [Haibo Chen](#), [Zhong Shao](#), [Zhaoguo Wang](#).

10/2023 - 10/2024 *Visiting Student*, Yale University,

Advisor: [Zhong Shao](#).

09/2014 - 06/2018 *B.S. in Computer Science*, Nanjing University.

Publications

- VLDB'25 Zhe Jiang, Zhaoguo Wang, Haoning Lan, Chuzhe Tang, **Haoran Ding**, Lefeng Wang, Songyun Zou, Zhuoran Wei, Yongcun Liu, Xiang Yu, Yang Ren, Guoliang Li, Haibo Chen. GRewriter: Practical Query Rewriting with Automatic Rule Set Expansion in GaussDB. In *the 51st International Conference on Very Large Data Bases (VLDB'25)*, London, United Kingdom, Sep 2025
- SIGMOD'25 Yicun Yang, Zhaoguo Wang, Yu Xia, Zhuoran Wei, **Haoran Ding**, Ruzica Piskac, Haibo Chen, and Jinyang Li. Automated Validating and Fixing of Text-to-SQL Translation with Execution Consistency. In *2025 ACM SIGMOD International Conference on Management of Data (SIGMOD'25)*, Berlin, Germany, Jun 2025
- SIGMOD'24 **Haoran Ding**, Zhaoguo Wang, Yicun Yang, Dexin Zhang, Zhenglin Xu, Haibo Chen, Ruzica Piskac, and Jinyang Li. Proving Query Equivalence Using Linear Integer Arithmetic. In *2024 ACM SIGMOD International Conference on Management of Data (SIGMOD'24)*, Santiago, Chile, Jun 2024
- OSDI'23 **Haoran Ding**, Zhaoguo Wang, Zhuohao Shen, Rong Chen, and Haibo Chen. Automated Verification of Idempotence for Stateful Serverless Applications. In *17th USENIX Symposium on Operating Systems Design and Implementation (OSDI'23)*, Boston, MA, USA, Jul 2023
- SIGMOD'22 Zhaoguo Wang, Zhou Zhou, Yicun Yang, **Haoran Ding**, Gansen Hu, Ding Ding, Chuzhe Tang, Haibo Chen, and Jinyang Li. WeTune: Automatic Discovery and Verification of Query Rewrite Rules. In *2022 International Conference on Management of Data (SIGMOD'22)*, Philadelphia, PA, USA, Jun 2022
- SOSP'19 Mo Zou, **Haoran Ding**, Dong Du, Ming Fu, Ronghui Gu, and Haibo Chen. Using Concurrent Relational Logic with Helpers for Verifying the AtomFS File System. In *Proceedings of the 27th ACM Symposium on Operating Systems Principles (SOSP '19)*, Huntsville, Ontario, Canada, Oct 2019

Talks

Oct 04, 2024 Database Group, University of Washington
Hosted by [Prof. Dan Suciu](#)

Oct 03, 2024 Software Research Lunch, Stanford University
Hosted by [Rohan Yadav](#)

Oct 01, 2024 SoDA Group, Carnegie Mellon University
Hosted by [Prof. Eunsuk Kang](#)

Sep 19, 2024 ACSys Group and Systems Group, New York University
Hosted by [Prof. Joseph Tassarotti](#)

Sep 12, 2024 CyLab, Carnegie Mellon University
Hosted by [Prof. Limin Jia](#)

Sep 10, 2024 Programming Languages Group and SNS Group, Princeton University
Hosted by [Prof. Aarti Gupta](#)

Aug 13, 2024 PDOS Group, MIT
Hosted by [Upamanyu Sharma](#) and [Yun-Sheng Chang](#)

Aug 12, 2024 Systems Research Group, Northeastern University
Hosted by [Prof. Cheng Tan](#)

Academic Service

LPAR'24 Subreviewer

Teaching

CS2501 Discrete Mathematics, Shanghai Jiao Tong University
Head Teaching Assistant (Fall 24, Fall 23, Fall 22, Fall 21)

MA238 Discrete Mathematics, Shanghai Jiao Tong University
Head Teaching Assistant (Fall 20, Fall 19)

Honors and Awards

2024 SIGMOD'24 Student Support Scholarships

2023 OSDI'23 Student Grants