

# 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](#)

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## Academic Service

- LPAR'24 Subreviewer

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## 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)

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## Honors and Awards

- 2024 SIGMOD'24 Student Support Scholarships
- 2023 OSDI'23 Student Grants