Li Lin

Ph.d. student @Zhejiang University | Supervised by Prof. Lingfeng Bao

Department of Computer Science and Technology | linli1210@zju.edu.cn

Research Interests

Software security, Database testing, Third-party ecosystem.

Currently, I am researching the security and reliability problems of Database using software testing techniques, such as metamorphic testing. I am also interested in AI for SE, particularly in using LLMs for SQL generation.

Education

Master's degree in Computer Science and Technology, Xiamen University — Sept 2022 – June 2025

- Database Testing, Supervised by Prof. Rongxin Wu

Bachelor's degree in Computer Science and Technology, Xiamen University — Sept 2018 – June 2022

- GPA: 3.6/4.0

Publications

1. **DLBench: A Comprehensive Benchmark for SQL Translation with Large Language Models**
   Li Lin, Hongqiao Chen, Qinglin Zhu, Liehang Chen, Linlong Tang, Rongxin Wu.
   ASE 2025: The IEEE/ACM International Conference on Automated Software Engineering, November, 2025 (Under Review)

2. **QTRAN: Extending Metamorphic-Oracle based Logical Bug Detection Techniques for Multiple-DBMS Dialect Support**
   Li Lin, Qinglin Zhu, Hongqiao Chen, Zhuangda Wang, Rongxin Wu, Xiaoheng Xie.
   ISSTA 2025: The ACM SIGSOFT International Symposium on Software Testing and Analysis, September, 2025 (107/550=19.4%)

3. **PATEN: Identifying Unpatched Third-Party APIs via Fine-grained Patch-enhanced AST-level Signature**
   Li Lin, Jialin Ye, Chao Wang, Rongxin Wu.
   TSE 2025: IEEE Transactions of Software Engineering, vol. 51, no. 4, pp. 990-1006 , Apr. 2025.

4. **SQLess: Dialect-Agnostic SQL Query Simplification**
   Li Lin, Zongyin Hao, Chengpeng Wang, Zhuangda Wang, Rongxin Wu, Gang Fan.
   ISSTA 2024: The ACM SIGSOFT International Symposium on Software Testing and Analysis, June, 2024 (143/694=20.6%)

5. **ReachCheck: Compositional Call Graph Reachability Analysis in the Presence of Third-Party Libraries**
   Chao Wang, **Li Lin**, Chengpeng Wang, Jiafeng Huang, Congxia Wu, Rongxin Wu.
   TOSEM 2025: The ACM Transactions on Software Engineering and Methodology, 2025 (Under Review)

6. **Taming Python Compatibility Issues: Dealing with Version Constraint Configurations for Python Third-Party Libraries**
   Chao Wang#, **Li Lin#**, Zhuangda Wang, Chengpeng Wang, Rongxin Wu.
   Preprint, May 2023

7. **FTP: A Human Pose Estimation Method Integrating Temporal and Fine-Grained Feature Fusion**
   Shuqiang Cai, Chennan Ma, Xin Wang, **Li Lin**, Ming Yan, Xincheng Lin, Shuqi Fan, Siqi Shen.
   ACML 2024: Asian Conference on Machine Learning, December, 2024

# means equal contribution.

Experience

Ant Group, Shenzhen, China - Research Intern, working on LLM-aided bug detection. May 2024 – Aug 2024

- University-Industry Collaboration Project : Adaptive Syntax SQL Statement Simplification Technology for Database Correctness Testing

Nanyang Technological University, Singapore - Visiting Scholar. Jan 2025

Academic Service

Journal Reviewer: IEEE Transactions on Information Forensics & Security (TIFS) 2025

Talks

QTRAN: Extending Metamorphic-Oracle based Logical Bug Detection Techniques for Multiple-DBMS Dialect Support (conference talk), hosted by Issta25, Trondheim, June 2025
Automating and Enhancing DBMS Testing: From SQL Generation and Transformation to Simplification (invited talk), hosted by Cyber Security Research Center, Nanyang Technological University, Singapore, Jan 2025

Bug detection in DBMS (invited talk), hosted by AntGroup, ShenZhen, May 2024

SQLess: Dialect-agnostic SQL Query Simplification (invited talk), hosted by AntGroup, ChengDu, Jun 2024

SQLess: Dialect-agnostic SQL Query Simplification (conference talk), hosted by Issta24, Vienna, Sep 2024

SQLess: Dialect-agnostic SQL Query Simplification (invited talk), hosted by Ant Technology Research Institute, Online (Public), Nov 2024

Patents

Large Language Model-Based Method, Apparatus, and Computer-Readable Medium for Database Test Case Expansion.	Patent No: CN119807057A
The method and device for processing SQL statements.	Patent No: CN118035274A
Method and Device for Dependency Conflict Resolution Based on Call Graph.	Patent No: CN115016840B
Method for automated parsing and installation of third-party library dependencies in Python projects.	Patent No: CN114780109B

Additional Experience And Awards

Computer Proficiency Tests:

- PAT Programming Design Test Level B: 95/100
- PAT Programming Design Test Level A: 97/100

Scholarships:

- National Scholarship, 2024
- Outstanding Academic Scholarship, Department of Computer Science and Technology, Xiamen University for the Academic Years 2019-2020
- Outstanding Academic Scholarship, Department of Computer Science and Technology, Xiamen University for the Academic Years 2020-2021

Honors & Awards:

- Outstanding Master's Graduate of Xiamen University (June 2025)
- Award for Outstanding Master's Thesis (June 2025)
- Outstanding Paper of the 2024 Annual Academic Conference of the Fujian Computer Society (December 2024)
- First Prize in the National High School Students' Physics Competition, Fujian Province (October 2017)
- First Prize in the National College Students' Mathematical Modeling Competition, Fujian Province (September 2020)

Personal Evaluation

Passionate about programming and sharing knowledge, enjoy reading, and have a habit of reading source code and writing blogs.

My technical blogs:

- https://blog.csdn.net/matafeiyanll
- https://linli1724647576.github.io/