

# Boyan LI

[✉ bli303@connect.hkust-gz.edu.cn](mailto:bli303@connect.hkust-gz.edu.cn) | [🌐 liboyan.vip](http://liboyan.vip) | [/github.com/BugMaker-Boyan](https://github.com/BugMaker-Boyan) | [G Google Scholar](#)

## Education

Hong Kong University of Science and Technology (Guangzhou)	Guangzhou, China
Ph.D. Student in Data Science and Analytics (DSA)	Sep. 2024 – Present
Supervisor: <b>Prof. Yuyu LUO</b>	
Southern University of Science and Technology (SUSTech)	Shenzhen, China
B.Eng. in Computer Science and Technology	Sep. 2019 – Jul. 2023
GPA: 3.91/4.0 (Rank 2/183) / Honors: Outstanding Graduate, Highest Honors	

## Publications

\* indicates equal contribution. **Boyan Li** is bolded.

### First-Author Publications (Including Co-First)

- [1] **Alpha-SQL: Zero-Shot Text-to-SQL using Monte Carlo Tree Search**  
Boyan Li, J. Zhang, J. Fan, Y. Xu, C. Chen, N. Tang, Y. Luo  
*International Conference on Machine Learning (ICML), 2025 (CCF-A)*  
Deployed in [Huawei Cloud DataArts Insight](#) and [Wuhan Urban Operation Agent](#).
- [2] **DeepEye-SQL: A Software-Engineering-Inspired Text-to-SQL Framework**  
Boyan Li, C. Chen, Z. Xue, Y. Mei, Y. Luo  
*ACM SIGMOD International Conference on Management of Data (SIGMOD), 2025 (CCF-A, Under Review)*
- [3] **DPC: Training-Free Text-to-SQL Candidate Selection via Dual-Paradigm Consistency**  
Boyan Li\*, O. O. K. Hei\*, Y. Yu\*, Y. Luo  
*Annual Meeting of the Association for Computational Linguistics (ACL), 2026 (CCF-A, Under Review)*
- [4] **ROSE: An Intent-Centered Evaluation Metric for NL2SQL**  
W. Pei\*, S. Hou\*, Boyan Li\*, H. Chen, Z. Shi, Y. Luo  
*Annual Meeting of the Association for Computational Linguistics (ACL), 2026 (CCF-A, Under Review)*
- [5] **The Dawn of Natural Language to SQL: Are We Fully Ready?**  
Boyan Li, Y. Luo, C. Chai, G. Li, N. Tang  
*Proceedings of the VLDB Endowment (VLDB), 2024 (CCF-A)*
- [6] **DeepVIS: Bridging Natural Language and Data Visualization Through Step-wise Reasoning**  
Z. Shuai\*, Boyan Li\*, S. Yan, Y. Luo, W. Yang  
*IEEE VIS Conference (VIS), 2025 (CCF-A)*

### Co-authored Publications

- [7] **A Survey of NL2SQL with Large Language Models: Where are we, and where are we going?**  
X. Liu, S. Shen, **Boyan Li**, P. Ma, R. Jiang, Y. Zhang, J. Fan, G. Li, N. Tang, Y. Luo  
*IEEE Transactions on Knowledge and Data Engineering (TKDE), 2025 (CCF-A)*
- [8] **nvBench 2.0: A Benchmark for Natural Language to Visualization under Ambiguity**  
T. Luo, C. Huang, L. Shen, **Boyan Li**, S. Shen, W. Zeng, N. Tang, Y. Luo  
*Conference on Neural Information Processing Systems (NeurIPS), 2025 (CCF-A)*
- [9] **NL2SQL-BUGs: A Benchmark for Detecting Semantic Errors in NL2SQL Translation**  
X. Liu, S. Shen, **Boyan Li**, N. Tang, Y. Luo  
*ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2025 (CCF-A)*
- [10] **Augmenting Realistic Charts with Virtual Overlays**  
Y. Shi, **Boyan Li**, Y. Luo, L. Chen, N. Tang  
*CHI Conference on Human Factors in Computing Systems (CHI), 2025 (CCF-A)*
- [11] **EllieSQL: Cost-Efficient Text-to-SQL with Complexity-Aware Routing**  
Y. Zhu, R. Jiang, **Boyan Li**, N. Tang, Y. Luo  
*Conference on Language Modeling (COLM), 2025*
- [12] **A Survey of Data Agents: Emerging Paradigm or Overstated Hype?**  
Y. Zhu, ..., **Boyan Li**, et al.  
*IEEE Transactions on Knowledge and Data Engineering (TKDE), 2025 (Under Review)*
- [13] **Advances and Challenges in Foundation Agents**  
B. Liu, ..., **Boyan Li**, et al.  
*arXiv preprint, 2025*  
Ranked Top-1 in Hugging Face Daily Papers.

- [14] **Are Large Language Models Good Statisticians?**  
Y. Zhu, S. Du, **Boyan Li**, Y. Luo, N. Tang  
*Conference on Neural Information Processing Systems (NeurIPS), 2024 (CCF-A)*
- [15] **A Plug-and-Play Natural Language Rewriter for Natural Language to SQL**  
P. Ma, **Boyan Li**, R. Jiang, J. Fan, N. Tang, Y. Luo  
*arXiv preprint, 2024*

## Open Source & Systems

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- **DeepEye: Visual Workflow Data Agent System**

- Led the development of a low-code orchestration platform for transparent data analysis.
- **Award:** “Best Open-source Project Award” at AI Agent 2025 Competition.

- **Alpha-SQL (ICML 2025)**

[\[GitHub\]](#)

- Official implementation of the Monte Carlo Tree Search based Text-to-SQL agent.
- **Impact:** Deployed in **Huawei Cloud DataArts Insight** and **Wuhan Urban Operation Agent**.

- **NL2SQL Handbook (TKDE 2025)**

[\[GitHub\]](#)

- A comprehensive and continuously updated roadmap for NL2SQL researchers.
- Widely recognized as a seminal resource for tracking state-of-the-art advancements.

- **NL2SQL360 Evaluation Framework (VLDB 2024)**

[\[GitHub\]](#)

- A comprehensive testbed for fine-grained evaluation of NL2SQL solutions.

## Experience

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**Tsinghua University (Database Group)**

*Beijing, China*

*Exchange Student (Mentor: Prof. Guoliang Li)*

*Jun. 2025 – Dec. 2025*

**Huawei Central Research Institute**

*Shenzhen, China*

*Research Intern*

*Jul. 2022 – Sep. 2022*

## Honors & Awards

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**Research Excellence Awards**, DSA Excellence Awards 2025

*Dec. 2025*

**Runner-up, Best Project Award**, DSAA 6000R, HKUST(GZ)

*Nov. 2025*

**Best Open-source Project Award**, AI Agent 2025 Competition

*Oct. 2025*

**Merit Prize**, DSA Excellent Research Award 2024

*Jan. 2025*

**Best Project Award**, DSAA 5021, HKUST(GZ)

*Dec. 2024*

**Highest Honors in Computer Science & Engineering**, SUSTech

*Jun. 2023*

**Outstanding Graduate**, SUSTech

*Jun. 2023*

**Huawei Scholarship**, Huawei Technologies

*May. 2022*

**Excellent Student Scholarship**, SUSTech

*2020, 2021, 2022*

**National Encouragement Scholarship**, Ministry of Education of China

*Apr. 2020*

## Services

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**Conference Reviewer**: International Conference on Learning Representations (**ICLR**)

*2026*

**Invited Talk**: Huawei Squirrel Webinar, “DeepEye-SQL”

*Jan. 2026*