

Jinsheng Ba

Personal Website | [GitHub](#) | [Google Scholar](#)

National University of Singapore

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EDUCATION

National University of Singapore

Ph.D. Candidate in Computer Science

Advisor: Manuel Rigger

Singapore

Jan 2020 – June 2024 (Expected)

Shandong University

B.Eng. in Computer Science

Shandong, China

Sep 2013 – Jun 2017

PUBLICATIONS

Finding Performance Issues in Database Systems Through the Lens of Cardinality Estimation

ICSE'24

Jinsheng Ba, Manuel Rigger

The 46th International Conference on Software Engineering, 2024

<https://github.com/sqlancer/sqlancer/issues/822>

Detecting Logic Bugs in Graph Database Management Systems via Injective and Surjective Graph Pattern Transformation

ICSE'24

Yuancheng Jiang, Jiahao Liu, Jinsheng Ba, Roland H.C. Yap, Zhenkai Liang, Manuel Rigger

The 46th International Conference on Software Engineering, 2024

<https://github.com/YuanchengJiang/GraphGenie>

Testing Database Engines via Query Plan Guidance

ICSE'23

Jinsheng Ba, Manuel Rigger

ACM SIGSOFT Distinguished Paper Award

The 45th International Conference on Software Engineering, 2023

<https://github.com/sqlancer/sqlancer/issues/641>

Efficient Greybox Fuzzing to Detect Memory Errors

ASE'22

Jinsheng Ba, Gregory J Duck, and Abhik Roychoudhury

ACM SIGSOFT Distinguished Paper Award

The 37th IEEE/ACM International Conference on Automated Software Engineering, 2022

<https://github.com/bajinsheng/ReZZan>

Stateful Greybox Fuzzing

SEC'22

Jinsheng Ba, Marcel Böhme, Zahra Mirzamomen, Abhik Roychoudhury

The 31st USENIX Security Symposium, 2022

<https://github.com/bajinsheng/SGFuzz>

WORK EXPERIENCE

Security Engineer

Jul 2017 – Dec 2019

Huawei

Beijing, China

- Analyze the security device log (IPS, WAF, Host-Guard, etc.) on the cloud to extract **threat intelligence** using Spark, Kafka, HBase.
- Optimize the machine learning algorithms to detect malware from dynamic execution traces and improve the recall by **13%**.
- Write virus analysis report and help customers to prevent attacks.

TEACHING EXPERIENCE

- Teaching Assistant for BT2102 Data Management and Visualisation (2022-2023 Semester 2)
- Teaching Assistant for BT2102 Data Management and Visualisation (2022-2023 Semester 1)
- Teaching Assistant for CS2040 Data Structures and Algorithms (2022-2023 Semester 1)

SERVICES

- Program Committee for DBTEST'24 Workshop co-located with SIGMOD'24.
- Program Committee for FSE'23 Artifact Evaluation.
- Program Committee for DEBT'23 Workshop co-located with ISSTA'23.
- Program Committee for PLDI'23 Artifact Evaluation.
- Student Volunteer for FSE'22.

AWARDS

- Dean's Graduate Research Excellence Award. (Aug 2023, NUS)
- ACM SIGSOFT Distinguished Paper Award. 10 out of 797 submissions 1.2% (Feb 2023, ICSE)
- Research Achievement Award. (Jan 2023, NUS)
- ACM SIGSOFT Distinguished Paper Award. (Oct 2022, ASE)
- Outstanding Graduate of Shandong Province. (Jun 2017, China)
- Outstanding Undergraduate Research Assistant. (Dec 2016, SDU)
- Outstanding Leader of Association in Shandong Province, the only one in SDU (Sep 2016, China)
- First Prize Scholarship of Shandong University. (Sep 2016, SDU)
- Second Prize for Microsoft Imagine Cup Contest (Jun 2015, Microsoft)

TALKS

- Invited talk at Ting Su's group of East China Normal University: Stateful Greybox Fuzzing. (July 2023, China)
- 45th International Conference on Software Engineering: Testing Database Engines via Query Plan Guidance. (May 2023, Australia)
- Open day at School of Computing, National University of Singapore: Testing Database Engines via Query Plan Guidance. (Feb 2023, Singapore)
- Seminar at Tsinghua University: Testing Database Engines via Query Plan Guidance. (Dec 2022, China)
- Seminar at TiDB company: Testing Database Engines via Query Plan Guidance. (Nov 2022, China)
- Security workshop at School of Computing, National University of Singapore: Efficient Greybox Fuzzing to Detect Memory Errors (Nov 2022, Singapore)
- Software engineering workshop at School of Computing, National University of Singapore: Testing Database Engines via Query Plan Guidance. (Nov 2022, Singapore)
- 37th IEEE/ACM International Conference on Automated Software Engineering: Efficient Greybox Fuzzing to Detect Memory Errors. (Oct 2022, USA)
- 31st USENIX Security Symposium: Stateful Greybox Fuzzing. (Aug 2022, USA)
- Mayday workshop at School of Computing, National University of Singapore: Stateful Greybox Fuzzing. (May 2022, Singapore)